



FEDERAL PROJECT MANAGEMENT UNIT
FEDERAL WATER MANAGEMENT CELL
MINISTRY OF NATIONAL
FOOD SECURITY & RESEARCH
ISLAMABAD - PAKISTAN

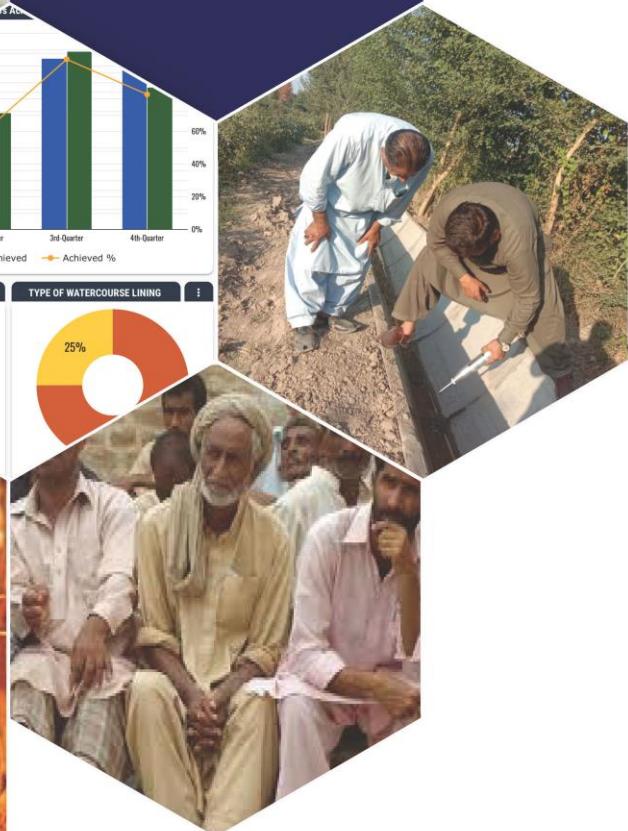
NATIONAL PROGRAM FOR IMPROVEMENT OF WATERCOURSES IN PAKISTAN PHASE-II: (NPIWC-II)

MONITORING, EVALUATION
AND IMPACT EVALUATION
CONSULTANTS



MONTHLY MONITORING REPORT

OCTOBER 2021



A Joint Venture of
G3 Engineering Lead Firm
Consultants (Pvt.) Ltd.



In Association with





Federal Project Management Unit (FPMU)
Ministry of National Food Security & Research, Islamabad

Monitoring, Evaluation and Impact Evaluation (ME&IE) Consultants

For

National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)

MONTHLY MONITORING REPORT
OCTOBER 2021

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ACRONYMS

ADA	Assistant Director Agriculture
AES	Agriculture Extension Services
AF	Acre-Feet
AJK	Azad Jammu & Kashmir
AWPB	Annual Work Plan and Budget
AWPs	Annual Work Plans
BCR	Benefit Cost Ratio
CFT	Cubic Feet
CMS	Content Management System
CSRD	Center for Social Research and Development
DAES	Director Agriculture Extension Services
DDA	Deputy Director Agriculture
DGA	Director General Agriculture
DTL	Deputy Team Leader
EAs	Executing Agencies
EIRR	Economic Internal Rate of Return
FCR	Financial Completion Report
FCRs	Final Completion Reports
FMFSR	Framework for Federal Financial Management System
FOs	Farmers Organizations
FPMU	Federal Project Management Unit
FWMC	Federal Water Management Cell
GAP	Gender Action Plan
GB	Gilgit Baltistan
G3EC	G3 Engineering Consultants
GIS	Geographic Information System
HEIS	High Efficiency Irrigation System
IAs	Implementing Agencies
ICR	Interim Completion Report
ICT	Islamabad Capital Territory
IRR	Internal Rate of Return
ICT	Information & Communication Technology
JV	Joint Venture
KP	Khyber Pakhtunkhwa
LLL	Laser Land Leveler
LPS	Liter Per Second
M&E	Monitoring and Evaluation
MAF	Million Acre Feet
ME&IE	Monitoring, Evaluation and Impact Evaluation
MIS	Management Information System
MNFSR	Ministry of National Food Security and Research
MMR	Monthly Monitoring Report
MT	Monitoring Template
MTE	Mid-Term Evaluation
NESPAK	National Engineering Services Pakistan

NPC	National Project Coordinator
NPIWC	National Program for Improvement of Watercourses
NPV	Net Present Value
NWMC	National Water Management Consultants
OFWM	On Farm Water Management
PC-1	Planning Commission-(Form-One)
PDO	Project Development Objectives
PIC	Project Implementation Committee
PIES	Project Impact Evaluation Study
PQC	Pre-Qualification Committee
QM&ER	Quarterly Monitoring and Evaluation Report
RBM	Results-Based Management
RFT	Running Feet
RWD	Responsive Web Design
SFT	Square Feet
SOPs	Standardized Operating Procedures
SPSS	Statistical Package for Social Sciences (Software)
SSCs	Supply and Service Companies
TABs	Tablets
TL	Team Leader
TOR	Terms of Reference
TPV	Third Party Validation
TWRD	Tail-Water Recovery Ditch
WG	Women Group
WST	Water Storage Tank
WUAs	Water Users Associations

EXECUTIVE SUMMARY

The report in hand, "Monthly Monitoring Report for the month of October 2021" comprises of six chapters.

Chapter-1 describes the project introduction in detail. The Government of Pakistan is implementing a project entitled "National Program for Improvement of Watercourses in Pakistan Phase-II" (NPIWC-II) at a total cost of PKR 154,542.355 million (Umbrella PC-I including Sindh) over a period of 05 years. This project will cover Punjab, KP, Balochistan and Gilgit Baltistan, Azad Jammu & Kashmir as well as Islamabad Capital Territory (ICT). The proposed project Phase-II will be beneficial for the country.

The NPIWC-II comprises of four components to be implemented in Punjab, KP, Balochistan, GB, AJK, and ICT:

- i) C1: Organization of Water Users Associations
- ii) C2: Watercourse Improvements: 47,278 Nos.
- iii) C3: Construction of Water Storage Tanks: 14,932 Nos.
- iv) C4: Provision of Laser Land Leveling Units: 11,610 Nos.

Chapter-2 describes Scope of Work of the ME&IE Consultants for the project. Since the ME&IE Consultants are going to monitor implementation of all criteria set, procedures defined and timeline agreed for implementation of various components, all these are reproduced in this report as ready reference to devise / design M&E strategy, methodology, procedures for monitoring and impact assessments of the project interventions.

The monitoring strategy planned to be followed by ME&IE Consultants is briefly described in Table-2.1. The strategy aims to be finalized and implemented in close coordination with the client and active participation of the beneficiaries as well as the project stakeholders.

Chapter-3 covers the details about the Monthly Monitoring Report. This Tenth (10th) Monthly Monitoring Report (MMR) covers the period from October 01, 2021 to October 31, 2021.

Chapter-4 of this report covers the activities completed during the reporting period are summarized below:

- Data collection from OFWM Department/NWMC for Baseline survey/regular monitoring
- Regular Monitoring of Interventions in the Field
- Data Collection of the Interventions in the Field
- Online Data Entry in Android Based Application.
- Baseline survey field visits
- Data entry, Data cleaning, Data processing and analysis
- Meetings of ME&IE Consultants with Stakeholders about Project Progress / Issues
- Monitoring / Data Collection on Social and Gender Component
- Refinement of NPIWC-II web site
- Data collection of interventions in MIS/GIS database
- Refinement of dashboard of Project Interventions
- Data collection of interventions in MIS/GIS database
- Implementation of MIS Dashboard in AJK
- Case Study on the Intervention

Chapter-5 of this report covers the details of ME&IE Consultants' activities initiated during the Fourth Quarter (October 1, 2021 to December 31, 2021) are listed below.

- Field Activities
- ICT Assignment
- Coordination
- Deliverables

Time span detail is mentioned in the Tentative Work Plan. **Annex-A**.

Chapter-6: of this MMR describes issues / problems faced by the consultants during the reporting period of the assignment.

Table-ES-1: Compliance Status of Tentative Work Plan (1st July to 30th September 2021)

No.	Activities Planned for the Reporting Quarter		Status
1	Field Activities:		
1.1	Regular Monitoring of Interventions in the Field	Complied	
1.2	Data collection of the interventions in the field	Complied	
1.3	Online data entry in android based application	Complied	
2	ICT Assignment:		
2.1	Development of Website of NPIWC-II	Complied/Refinement under process	
2.3	Monitoring online data collection and Data entry	Complied	
2.3	Monitoring Android based Mobile Application under implementation by field staff.	Complied	
2.4	Data collection of interventions in MIS/GIS database	Complied	
2.5	Designing of Dashboard of Project Interventions	Complied	
3	Coordination		
3.1	Meetings of TL with NPC and OFWM Departments regarding Project Progress / Issues	Meetings conducted on regular basis	
3.2	Meeting of DTLs with respective DTL of NWMC	Meetings conducted on regular basis	
4	Deliverables:		
4.1	Monthly Monitoring Report (MMR)	7 th MMR (JUL 2021)	Submitted
		8 th MMR (AUG 2021)	Submitted
		9 th MMR (SEPT 2021)	Submitted
		10 th MMR (OCT 2021)	To be submitted in stipulated time
4.2	Quarterly Monitoring & Evaluation Report (QM&ER)	3 rd QM&ER (JUL-SEPT 2021)	Submitted
4.3	Annual Monitoring and Evaluation Report	1 st AM&ER Submitted	
4.4	Baseline Survey Report Ph-1 (Draft)	Submitted	

CHAPTER-1: INTRODUCTION

1.1 PROJECT PROFILE

Project Name	National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)
Project Areas	Punjab, KP, Balochistan, Gilgit Baltistan, Azad Jammu & Kashmir, and Islamabad Capital Territory (ICT)
Sponsoring Agency	Ministry of National Food Security & Research
Executing Agencies (EAs)	<ol style="list-style-type: none"> 1. Federal Project Management Unit (FPMU), 2. DGA OFWM Punjab 3. DG OFWM KP 4. DGA OFWM Balochistan 5. Director Irrigation and Small Dams, AJK 6. Director WM, GB 7. Director Agriculture Extension Services (AES) ICT
Project Period	5 Year (2019-2024)
Total Project Cost	154,542.355 million (Umbrella PC-1, including Sindh)
ME&IE Consultancy Period	4 year
ME&IE Consultant:	JV of G3 Engineering Consultants (Pvt.) Ltd., EASE PAK Engineering services (Pvt.) Ltd., Centre for Social Research and Development (CSR) and ADA Consultants Inc. Canada
ME&IE Consultant Mobilized	November 20, 2020

1.2 PROJECT DESCRIPTION

1.2.1 Project Development Objectives

The Project Development Objectives (PDOs) are to improve irrigation water management at tertiary and field levels in Pakistan.

1.2.2 Project Objectives – General & Quantitative

1) General Objectives:

The Project aims to replicate the success achieved

during the NPIWC Phase-I and further improve the findings of the Project Impact Evaluation Study (PIES). The broad objectives of the project are as under:

- i) Social mobilization through capacity building of WUAs/ FOs,
- ii) Minimization of conveyance and field application losses,
- iii) Reduction in Water Logging and salinity,
- iv) Equity in water distribution,
- v) Reduction in water disputes/thefts/litigation,
- vi) Motivation/participation of farmers,
- vii) Poverty reduction through employment generation,
- viii) Increase in crops yield/sufficiency in food.

2) Quantitative Objectives:

The quantitative objectives of the Project are as under:

Project outputs

- i) Mobilization through capacity building of Water Users Associations/Farmers Organizations in improved water management techniques and their registration under On-Farm Water Management and Water User Associations Ordinance [Act] 1981 and organization of 47,278 WUAs.
- ii) Reconstruction/renovation and remodeling of 47,278 watercourses, involving complete earthen renovation, partial lining of critical reaches (50% of the total watercourse length as decided in the high-level meeting), and installation of water control structures. It is expected to save around 5.82 MAF per annum (approx. saving of 123 acre-feet (AF) per watercourse per annum).
- iii) Construction of 14,932 water storage tanks with 60% subsidy.
- iv) Provision of 11,610 Laser Land Levelers at 50% cost sharing, with the expectation to save about 50% irrigation water for wheat and about 68% of irrigation water for paddy.

Project impacts

- v) Reduction in Water Logging and salinity in project areas to the extent of 10%.
- vi) Cropping intensity is expected to increase by 5-20%.
- vii) Crop's yield is estimated to increase by 10-15%.
- viii) Equity in water distribution increased by about 30%.
- ix) Reduction in water disputes/thefts and litigation amongst the Farmers over water distribution by about 80%.
- x) Help poverty reduction through generation of employment.

xi) Self-sufficiency in food through utilization of water saved for edible oil seed production.

Project indirect benefits to industry/economic activities

xii) Cement industry, bricks Killen, Precast Structures Industry and other related industries' production will pick up.

Awareness support to farmers

xiii) Motivating farmers through an awareness campaign for watercourse improvement.
xiv) Providing technical material to farmers for optimal utilization of water resources in the shape of technical manual and operational guidelines.

1.2.3 Project Beneficiaries

Majority of the direct project beneficiaries constitute the number of farmers (owners as well as tenants) growing crops and orchards on the watercourses improved under NPIWC-II. Assuming 35 farmers on each watercourse, the total number of the farmers benefiting from the activity comes to 1.655 million. The same number will benefit due to Water Users' Associations (WUAs) in terms of cooperative management of irrigation water. Moreover, 14,932 will directly benefit from Water Storage Tanks and 11,620 as recipients of Laser Land Leveling Units. Thus, total gross direct beneficiaries are expected to be around 3.336 million households. However, net beneficiaries are expected to be 1.668 million.

Taking family size at five, total net population benefitting is expected to be 8.34 million people.

1.2.4 Project Components

The NPIWC-II comprises four components.

C1: ORGANIZATION OF WATER USERS ASSOCIATIONS:

Establishment/ reactivation of Water Users Associations (WUAs) through community driven implementation approach.

- i) Provide right of way for constructing watercourse,
- ii) Arrange skilled and unskilled labour required for reconstruction / maintenance of earthen water channel, installation of water control structures, and lining of critical reaches,
- iii) Procure construction materials for carrying out civil works,

- iv) Settle matters of disputes amongst the water users in respect of channel alignment, fixation of Naccas, distribution of work, etc.
- v) Make alternate arrangements for conveyance of water during execution of improvement works,
- vi) Carry out civil works in accordance with standards and specifications under the supervision of OFWM field staff,
- vii) Regularly undertake O&M of improved watercourses after its construction.

C2: WATERCOURSE IMPROVEMENTS:

47,278 Watercourses are planned to be improved /reconstructed and lined.

- i) New watercourses that are not yet improved under earlier programs / projects,
- ii) Reconstruction of more than 20 years old watercourses that outlived their economic / useful life,
- iii) Additional lining up to 50% of already improved watercourses.

C3: CONSTRUCTION OF WATER STORAGE TANKS:

Construction of 14,932 Water Storage Tanks (WSTs)

- i) Store water during the rainy season and times of no use in the commands of perennial / non-perennial canals for subsequent irrigations at the critical crop growth stages,
- ii) Provide flexibility for storage of plentiful canal and rainfall runoff water for its more expedient use subsequently,
- iii) Collect, store and filter water from:
 - Small Dams, Springs, Streams, Nallas etc.
 - Rainfall runoff over agricultural catchment during rainy season
 - Tube-wells and dug wells of low flows
 - Tail-waters from agricultural fields
- iv) Regulate the flows so that it can be used efficiently when needed at large flow rates.

C4: PROVISION OF LASER LAND LEVELING UNITS:

Provision of 11,610 Laser Land Leveling units to the farmers. The component will strengthen LASER land leveling services in the country through provision of Laser Land Leveling Units to farmers/service providers on 50% subsidized rates.

1.2.5 Project Targets

Project aims at achieving the targets (Figure-1.1) for 5 years starting from year 2019-20 to 2023-24. The targets for each province/Zone (excluding Sindh) are given below Figure-1.2.

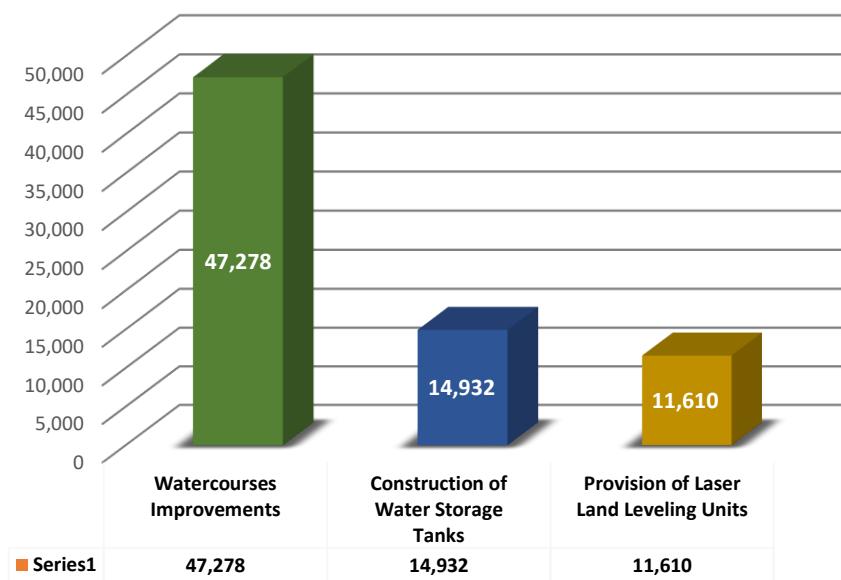


Figure 1.1: Pakistan Targets

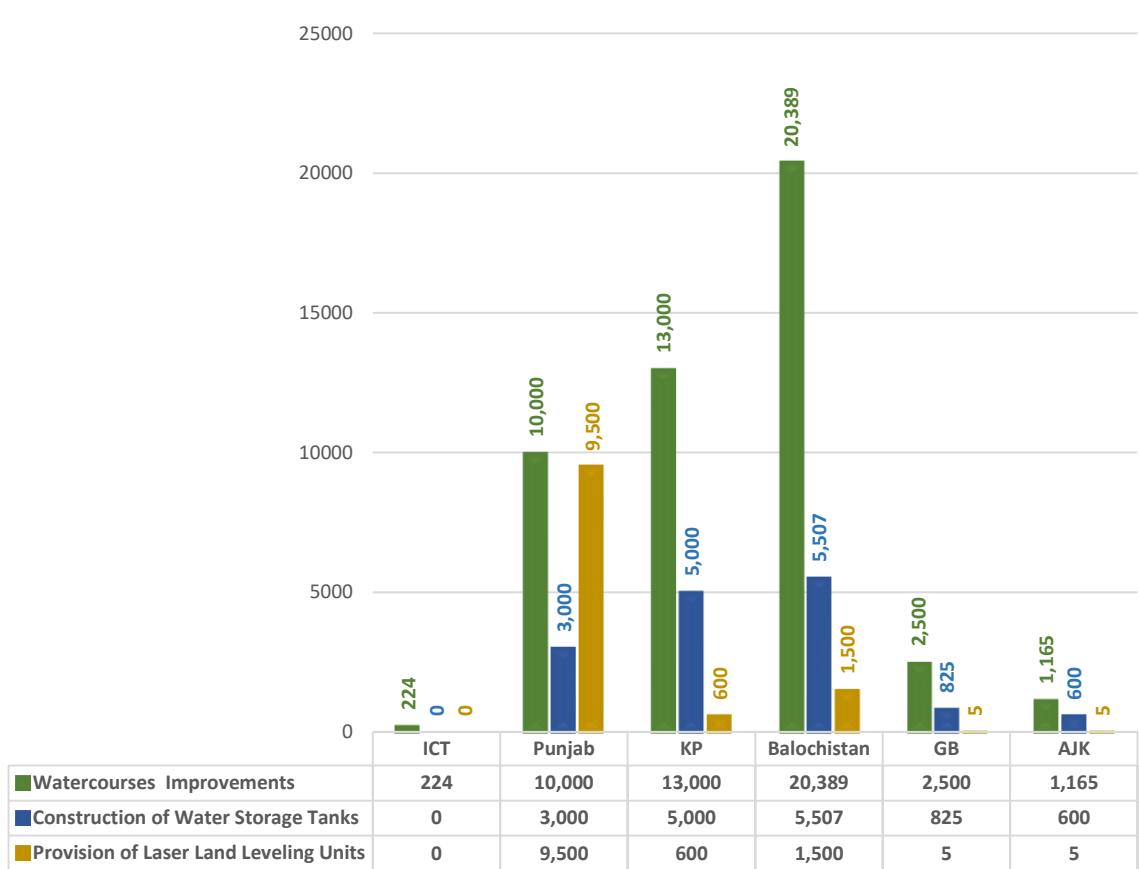


Figure 1.2: Zonal Target

CHAPTER 2: SCOPE AND SERVICES OF ME&IE CONSULTANTS

The ME&IE Consultants services are planned to be provided through a multi-disciplinary team of qualified professionals. All firms in the joint venture have rich experience in the field of monitoring and evaluations. The team deputed for this task in the project comprises highly qualified professionals having long practical experience of such projects earlier launched in Pakistan. The consultant will develop a State-of-the-Art Management Information System (MIS) with GIS focuses for NPIWC-II to monitor progress on project interventions and to carry out an effective monitoring process. The MIS will help decision makers to make informed the decisions.

2.1 OBJECTIVES

The objective of ME&IE Consultant's services is to carry out monitoring and evaluation of project impacts to ensure achievement of project development objectives.

2.2 SCOPE OF THE SERVICES

The ME&IE Consultants will be responsible for monitoring, evaluation and impact evaluation, and in this context will carry out the following activities:

- i) Undertake baseline, midline and endline surveys for the project activities / interventions in all the project areas,
- ii) Develop monitoring strategy, framework and Result-Based Monitoring (RBM) indicators,
- iii) Preparation of monthly, quarterly and annual monitoring, evaluation and validation reports of the project activities,
- iv) Assessing the water saving per annum on watercourses, water storage tanks and field levels as well as aggregate due to the project interventions,
- v) Assessing the improvement in water availability due to the provision of conveyance system,
- vi) Assessing the economic benefits to the agriculture in terms of changes in yields, irrigated area, cropping pattern, cropping intensity, farm income and employment in command area of watercourses and water storage tanks,
- vii) Assessing the extent of community mobilization, financial and administrative sustainability of water users' associations and

ensuring the maintenance of watercourses, water storage tanks and laser land Levelers,

- viii) Economic impact of project interventions,
- ix) Carry out the impact evaluation of the project intervention on the economy and stakeholders,
- x) Develop a website containing information on facilities and services, applications, procedures, watercourses, water storage tanks and laser Levelers database, etc. (while the project staff will maintain the website),
- xi) Provide technical support for the development of a custom-designed mobile application (Android Based) to capture on-site project progress and geo-tagged photos. It should be synchronized with the central MIS/GIS database and application for instant reporting and feedback to the management. The said requirement is based on the following functional features:

- *Development of a GIS database with all spatial layers related to activities being undertaken under the project*
- *Give technical assistance for up-gradation/up-gradation of water management GIS database.*
- *Development of web-based GIS application as a dashboard interface for comprehensive representation of all spatial and tabular information: custom designed web GIS application be developed for large LED screens, should be self-operative and represent project data on multiple layouts of application interface.*
- *Development of a MIS application as an integral part of web GIS to maintain information on facilities and services, applications, procedures, watercourses database, etc.*
- *Development of a custom designed mobile application (Android) to capture on-site project progress, geo-tagged photos; should be synchronized with the central MIS/GIS database and application for instant reporting and feedback to the management.*
- *Application should generate custom designed reports and analysis as per user-defined requirements.*
- *Application should generate alerts (SMS, email, web-notifications) to the user on the non-conformance of project's key indicators; the application should have the provision to custom define alerts levels and desired notifications.*

2.3 MONITORING STRATEGY

The monitoring strategy planned to be followed by ME&IE Consultants is briefly described in the following Table-2.1. However, detailed methodology and procedures to carry out the Monitoring,

Evaluations and Impact Evaluations of the project interventions were explained in Chapter 6 of Inception Report. The strategy aims to be finalized and implemented in close coordination with the client and active participation of the beneficiaries as well as the project stakeholders.

Table 2.1: Monitoring Strategy for ME&IE Activities

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
1	Baseline, midline and endline surveys	Team Leader, Socio-Economic Expert, Agricultural Economist and Deputy Team Leader of the respective province/unit.	<ul style="list-style-type: none"> Baseline and impact surveys will be carried out on sample basis. Data will be collected by field teams on pre-designed data collection tools through an android application on TABs. Baseline and impact surveys will be carried out in phases as target watercourses are not preselected. Baseline will be carried out before the intervention and the impact one year (two crop seasons) after the completion of the intervention. The midterm study will review the project progress at middle of the project implementation The endline study will assess the impact of the project interventions.
2	Reporting	All core team members	<p>Following periodic reports will be prepared and submitted:</p> <ul style="list-style-type: none"> Draft Inception Report 45 days after the agreement, Final Inception Report one week after the issuance of comments by the client on the draft, Monthly Monitoring Report on 10th of following month, Quarterly Monitoring Report on 10th of the first month of the following quarter, Annual Monitoring and Evaluation Report during first month of the following year, Baseline Survey Reports (in three phases), First Phase Baseline Survey report will be submitted within the four months after the start of the assignment i.e., Submission of final inception report/Beginning of field activities. Impact Survey Reports (in phases) – two months after the data collection completion for the impact phase, Midline report in the middle of the assignment, Endline Report at the end of endline Survey, Draft Assignment completion Report at completion of the physical works, Final Assignment Completion Report at completion of works and financial transactions. It will also include the full economic benefit of the project (NPIWC-II) on agriculture sector as well as on the GDP of Pakistan, Special Reports, as and when asked by the client.
3	Water saving assessment	Irrigation Agronomist, Field Team/ Engineers	<p>Water Saving on Watercourses:</p> <ul style="list-style-type: none"> Water flow will be measured on sample watercourses selected for the baseline and impact surveys The flow will be measured at four points of the selected watercourses: close to water outlet, head reach, middle reach and tail reach. The measurements will be done through current meters.

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
			<ul style="list-style-type: none"> Based on water savings on sample watercourses, total water savings will be estimated for all project watercourses. The savings will be reported per watercourse, per annum and aggregate for the project in LPS and Acre feet.
			<p>Water Savings on WSTs</p> <ul style="list-style-type: none"> Since WSTs will be filled and emptied on a continuous basis, the water savings will be assessed on the basis of water pumped from the tank to irrigate the fields. The assessment will be done either by readings on the pump gauge or periodically interviewing the farmer. Based on water savings on sample WSTs, total water savings will be estimated for all project WSTs. The savings will be reported per WST, per annum and aggregate for the project in LPS and in Acre feet. <p>Water savings due to Laser Land Leveling</p> <ul style="list-style-type: none"> Water savings at field level will be assessed through farmers' interviews. The impact survey form will include questions to be asked from the farmers who got their land leveled: <ul style="list-style-type: none"> In how much time an acre was irrigated before watercourse improvement and land leveling In how much time an acre is irrigated after watercourse improvement with land leveling <p>The difference will be water saving due to laser land leveling</p>
			<p>Based on water savings on sample LLL units, total water savings will be estimated for all project LLL units. The savings will be reported per LLL unit, per annum and aggregate for the project in LPS and in Acre feet.</p>
4	Community mobilization	Social and Gender Specialist and Socio-Economic Expert	<p>The extent of community mobilization will be assessed by investigating whether:</p> <ul style="list-style-type: none"> WUAs is functional Holds regular meetings and keep record of them Makes decisions democratically The participation in the organization is voluntary It is financially and administratively sustainable Takes steps and ensures maintenance of watercourses, WSTs and laser land leveler
5	Economic benefits assessment for agriculture	Team Leader, Socio- Economist and Agricultural Economist	<ul style="list-style-type: none"> As indicated at serial No. 1, Agriculture data will be collected before (baseline) and after (impact) the watercourse improvement and WSTs construction. In both the surveys same forms will be used and same sampled farmers will be interviewed Data on variables such as crop yields, irrigated area, cropping pattern, cropping intensity, farm income and employment will be collected and analyzed The difference between before and after situations minus natural growth will be assumed as economic benefits to the agriculture
6	Impact evaluation-on the economy	Team Leader, Agricultural Economist and Socio-Economic	<ul style="list-style-type: none"> The results of the baseline and impact surveys will be used to quantify impact on the economy Additional food produced due to the project will be estimated. It is benefit towards food security

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
		Expert	<ul style="list-style-type: none"> Project costs and benefits will be compared in economic and financial terms to carry out economic and financial analysis. Parameters like IRR, NPV and BCR will be estimated.
7	Impact evaluation-on the stakeholders	Team Leader, Agricultural Economist and Socio-Economic Expert	<ul style="list-style-type: none"> Analysis as in serial 6 will be carried out with reference to various stakeholders, like community, government, farmers, etc.
8	Spot checking	Team Leader, Deputy Team Leaders & Field teams/Engineers.	During the field visits for WUAs baselines impacts of Watercourses, WSTs and laser units, the interventions will be spot checked for quality of construction, material, functioning and beneficiaries' satisfaction etc.
9	Process monitoring	Field Teams of Agriculture Deptt., Project Consultants, ME&IE Consultants & ICT/Technology Specialist	<ul style="list-style-type: none"> The process data for all the interventions will be fed to the MIS/GIS database. Client's field staff and field teams of consultants will furnish data of their activities. The ME&IE will assist in developing mobile application for this purpose From this data reports will be generated for process monitoring All interventions will be fully (100%) covered.
10	Project website and MIS/GIS dashboard development	ICT / Technology Specialist (Including all other core team staff will also coordinate in completing data for the MIS/GIS	<ul style="list-style-type: none"> The State-of-the-art MIS / Progress Monitoring Model will be developed for NPIWC-II. Customized forms will be developed to collect data from the implementing teams on-site for progress monitoring These forms will be made available to the teams on smart phones through an android application The teams will be adequately trained to use the application Data on physical and financial stages with dates will be fed to the system for process monitoring GIS coordinates for watercourses, WSTs, laser units (if available) and WUAs offices will be uploaded to the system and could be viewed / reached by the management online The system will be maintained on GOOGLE server so that it is accessible by the management from anywhere in Pakistan and abroad Custom reports will be possible as the user demands / desires The results could be displayed on small as well as large screens.
11	Development of Android based application	ICT / Technology Specialist	All the data collection forms / tools will be executed through customized developed Android based applications accessible with smart phones / TABs.

2.4 FRAMEWORK AND RESULTS-BASED MONITORING (RBM) INDICATORS

The framework and Results-Based Monitoring (RBM) Indicators are identified in Table-2.2 of Inception Report. The indicators will be further enhanced and refined in consultation with the client as well as stakeholders.

They will also get improved as the project implementation progresses as in the light of real and on the ground situations.

CHAPTER 3: MONTHLY MONITORING REPORT

3.1 INTRODUCTION

Monthly Monitoring Report (MMR) explains the understanding towards all activities to be carried out as per TORs of ME&IE assignment and their completion within stipulated time frame.

3.2 OBJECTIVE OF MONTHLY MONITORING REPORT

The Main objective of the Monthly Monitoring Report is to update the Client about the activities carried out by the ME&IE Consultants during the reporting period. Reporting is an integral part of monitoring and evaluation framework.

3.3 REPORTING PERIOD

This Tenth Monthly Monitoring Report (MMR) covers the period from October 01, 2021 to October 31, 2021.

The Tenth Monthly Monitoring Report (MMR) has been prepared under the guidance and supervision of Mr. Saif Ullah Ejaz Chaudhry; Director G3 Engineering Consultants authorized representative of ME&IE Consultants. The core team of NPIWC-II participated in the preparation of this Report in hand.

The Report In-hand provides the progress made in various activities relating to the accomplishment of Monitoring activities of project interventions e.g., field monitoring activities, ICT assignments etc. This report also describes all activities to be carried out as per quarterly work plan.

CHAPTER 4: ACTIVITIES DURING THE REPORTING PERIOD

During the reporting month Consultants carried out different field as well as in-house activities related to ME&IE. However higher management of consultants made some appointments/ replacements in the key positions of consultants.

APPOINTMENTS / REPLACEMENTS OF KEY POSITIONS

During the reporting month, higher management of ME&IE Consultants has made following replacements in key positions with the approval of Client.

- i. Dr. Usman Mustafa has been appointed as Team Leader/M&E Specialist for NPIWC-II Project w.e.f. October 8, 2021, while Dr. Muhammad Abdul Quddus has been appointed as Agricultural Economist at National Office for NPIWC-II Project w.e.f. October 8, 2021. This change has been made with the approval of client vide NPC office Letter No. F, 1-8/2020-FPMU-(CV-M&E) dated October 7th, 2021.
- ii. Dr. Umar Farooq has been appointed as Deputy Team Leader National Officer after resign of Dr. Sawrar Zahid. Dr. Umar Farooq joined ME&IE consultants' team at National officer w.e.f. October 4, 2021, after approval from Client vide NPC office letter No. F.1-8/2020-FPMU-(CV-M&E) dated September 28, 2021.

4.1 REGULAR MONITORING OF INTERVENTIONS IN THE FIELD

The routine monitoring is containing a brief analysis of the results; calculating achievement rates and establishing trends, relevant findings that may help or constraint the future data collection activities in the established periods and, if appropriate, propose specific solutions assessing the advantages and disadvantages of each.

The regular monitoring assignments under NPIWC-II are comprised of input-output and process as defined in the Annual Work Plan / Budget and tracking of the outcomes indicators. Regular routine monitoring will look at the extent to which the proposed project activities are being implemented as planned.

Monitoring activities carried out by the ME&IE consultants during the reporting period are summarized below.

4.1.1 Regular Monitoring of Interventions in the Field - ICT Zone

ICT Zonal office remained engaged in different project activities including coordination with all Zonal Offices of ME&IE Consultants.

ICT Zone Field Team planned it Field Monitoring visit of Gilgit Baltistan project areas to collect as much data for Baseline as well monitoring point of view. The schedule was planned from 10th October 2021. It was envisaged that due to slow construction process of watercourses in hilly areas, a good baseline data could be collected. This visit was planned as a joint visit of Islamabad and KPK teams but due to bad weather conditions and blockage of roads, this visit was postponed.

As per data / information shared by Gilgit Baltistan Water Management Department, they have completed total 195 watercourses and 136 Water Storage Tanks till August 2021 under NPIW-II program.

However, ICT field team coordinated with the Directorate of Water Management Islamabad for the collection of available data of completed watercourses. The available data was collected from files and entered in prescribed format by the IT team members. The data was later cleaned and provided to ICT Specialist for uploading to Live Dashboard of ICT.

ICT Zonal office ME&IE Experts also remained engaged in review and refinement in first baseline survey.

Team Leader Dr. Usman Mustafa conducted scheduled his monitoring visit of Gilgit Baltistan project areas, District Ghizer and Gilgit, from 20 October 2021 to 21 October 2021. Team Leader conducted his 2 days' field visit of GB jointly with Mr. Tahir Anwar National Program Coordinator (NPC) and his staff.

Following personnel participated in the visit.

1. Mr. Tahir Anwar, NPC
2. Mr. Ali Raza Naqvi, Irrigation Agronomist FPMU

3. Dr. Usman Mustafa Team Leader ME&IE Consultants NPIWC-II
4. Mr. Iftikhar Arian, DTL-NWMC
5. Adil Hussain Deputy Director OFWM & Irrigation Department District Ghizer
6. Naeem Abbas Assistant Engineer OFWM & Irrigation Department District Ghizer
7. Local Farmers

Team Leader visited project interventions in District Ghizer and Gilgit including watercourses and water storage tanks constructed under the project NPIWC-II.

Discussions were held with farmers' representatives and personnel of On Farm Water Management and Irrigation Departments of GB. Team Leader conducted discussions with department personnel and interviewed different farmers while visiting watercourses and water storage tanks. Farmers were asked to share their point of views regarding the program NPIWC-II and benefit they achieved through this program. Farmers shared their point of views in terms of benefits received through this program and also expressed their further expectations.

4.1.2 Regular Monitoring of Interventions in the Field Punjab Zone

Monitoring /Visit of various interventions, in the Field, is one of the important regular features of field teams. For the Baseline survey of the watercourse, measurement of water flow in the watercourse is the pre-requisite. In this regard DTL and the field team in-charge visited department of Irrigation and Drainage, University of Agriculture, Faisalabad to get the orientation and guidance for water flow measurement in a watercourse.

4.1.3 Regular Monitoring of Interventions in the Field KP - Zone

KP Zonal office remained engaged in different activities during the reporting month. Consultants conducted a number of meetings with client and field time was provided training of water flow measurement by pigmy meter.

4.1.4 Regular Monitoring of Interventions in the Field - Balochistan Zone

The Balochistan ME&IE Consultants' team conducted several activities during the reporting

month i.e., October 2021. Detail of activities completed by Balochistan Zonal team is listed below:

- i. Regular Monitoring / Spot Check Field Visits.
- ii. Meetings with OFWM officials and other stakeholders.

4.1.4.1 Detail of Field Monitoring Visits - Balochistan Zone

The schemes of F.Y. 2019-20 and F.Y. 2020-21 were monitored in the current month to evaluate the impact of the project.

During the current month field teams visited 03 districts of Balochistan i.e., Naseerabad, Sohbatpur, and Quetta to monitor the works of F.Y. 2019-20.

Team Composition:

The Balochistan Field Team was comprised of 03 teams as listed below:

Team - 1

1. Mr. Tariq Khoso, M&E Expert
2. Mr. Saleem Abro, M&E Expert

Team - 2

1. Mr. Naseeb Jan, M&E Expert
2. Mr. Qaisar Tareen, M&E Officer

Team -3

1. Mr. Manzoor Kasi, M&E Expert
2. Mr. Hamza Qureshi, M&E Officer
3. Ms. Mahgul Baloch, M&E Officer

The field teams-1 visited 02 districts i.e. Naseerbad and Sohbatpur and monitored 04 Watercourses of F.Y. 2019-20. The team-3 visited 01 district Quetta and monitored 02 Water Storage Tanks of F.Y. 2020-21.

4.2 DATA COLLECTION OF THE INTERVENTION IN THE FIELD

ME&IE Consultants of all the Zonal offices remained engaged in different field activities as well as in-house project activities during the reporting month. Detail of field monitoring / data collections is given below.

4.2.1 Regular Monitoring of Interventions in the Field - ICT Zone

ICT Zone Field Team planned its Field Monitoring visit of Gilgit Baltistan project areas to collect as

much data for Baseline as well monitoring point of view. The schedule was planned from 10th October 2021. But due to bad weather conditions and blockage of roads, this visit was postponed. However some data was shared by Gilgit Baltistan Water Management Department. As per data received from GB WMD, they have completed total 195 watercourses and 136 Water Storage Tanks till August 2021 under NPIW-II program. ICT ME&IE experts coordinated with the Directorate of Water Management Islamabad for the collection of available data of completed watercourses.

4.2.2 Regular Monitoring of Interventions in the Field –Punjab Zone

DTL and one of the concerned field team in-charge visited department of Irrigation and Drainage, University of Agriculture, Faisalabad to get the orientation and guidance for water flow measurement in a watercourse. The relevant authority demonstrated the procedure of water flow measurement and also provided some relevant literature on it.

Later on, the field teams practiced the measurement of water flow at the spot in the field as per procedure learnt. The detailed of this exercise is given below.

Methodology used for Water Flow Measurement:

Equipment Used: Pygmy Current Meter

Working principle:

- Current meter Measures Velocity (V)
- Direct / By counting revolutions per unit time
- Area of Segments (A)
- $Q = A \times V$

Segmental Area:

- Measure top width of water / channel
- Measure bottom width of channel
- Divide width in segments (each segment area = 10% of total area)
- Record width of each segment
- Mark distance from initial point for each segment
- Take average depth of water in each segment
- Measure velocities at 0.2 & 0.8 if depth >60 cm
- Measure velocities in center of each segment
- Find average velocity by counting pings/table
 $V = 0.123 N + 0.007N = \text{Revolutions/Second}$
- Calculate Q of each segment by $Q = A \times V$

- Add Q of all segments for total discharge

Specifications:

Model 1205

Flow Velocity – feet per second (meter per second)

- Minimum .25fps (.075mps)
- Maximum 3 fps (.914 mps)

Weight – Pounds (kilograms) .25 lb (.11kg)
 Suspension Means - Wading Rod

Field Observations:

With the help of above cited formula, water flow was measured at different spots within the range of 100m. It was a good of exercise for the learning field monitoring team. This exercise was carried out at on Water Course No 18575–CR. Observations made during this exercise are as under:

Sr. No	Design Discharge (Cusec)	Actual Discharge Measured (Cusec)
1	3	2.71
2	3	2.68
3	3	2.68

Average Discharge = 2.69 Cusics

Following field team members participated in the exercise of water flow measurement at water course no 18575–CR Raiwind Lahore.

Name	Designation
Muhammad Rizwan Suleman	Field Team In charge /ME&IE Expert
Muhammad Zubair	Field Team In charge /ME&IE Expert
Syed Ali Haider	Field Team Engineer /ME&IE Expert



Figure 4.1: Field Team taking Water Flow Measurement at Watercourse No. 18575-CR Raiwind Lahore

The brief profile of watercourse is given as under:

Category of Watercourse	Additional
W.C No.	18575 – CR
Name of Chairman	Haji Rehmat
Cell No	0300 – 9440436
Village/chak/Moza	Rakh Jud Uddin
Union Council	Paji
Minor	Judu
National Assembly	NA- 136
Provincial Assembly	PP – 172
Location	Tail
New Lining	1345 Meter
Total Land (Haji Rehmat)	37.5 Acre
Crops Grown During Rabi and Kharif	Kharif 2021 Rice – 27.5 Acre Kharif Fodder/Maize and Super Nepra Grass - 10 Acre Rabi 2021 - 22 Wheat – 27.5 Acre Rabi Fodder - 10 Acre

Farmers Comments

According to the chairman of the Water User Association farmers getting benefits of improvement of the watercourse as under.

- Farmer was happy because before the improvement of watercourse huge amount of water wasted in the field. As a result of improvement of watercourse (additional Lining)

the farmer is getting adequate water supply.

- Now the farmer is Cultivating 100% area under Kharif and Rabi crops. Prior to it he was unable to do so. Being at the tail is too happy with such improvement.

As a result of close coordination of field team members with field staff of the OFWM department, the basic data of target of various interventions for the year 2021 – 22 are summarized as under:

Zones	Reg ular	Additi onal	Sub Total	WST	LLL
Subzone-1	147	675	822	162	11 00
Subzone-2	151	305	456	71	30 5
Subzone-3	82	240	322	45	30 5
Rawalpindi Division	-	-	-	222	-

The Basic data /targets of each sub-zone were collected by telephonic conversation with OFWM Department which is being processed at zonal office Punjab for the coming phases of baseline survey phase – II. The detail of interventions on each subzone is given in tables below.

Target of Various Interventions during 2021-22
In Subzone – 1

Division	District	WC Targets		Sub Total	WST	LLL
		Regular	Additional			
Faisalabad	Faisalabad	0	75	75	30	125
	Jhang	8	75	83	18	130
	Chiniot	25	55	80	8	70
	T.T.Singh	0	75	75	50	90
Total		33	280	313	106	415
Sahiwal	Sahiwal	17	70	87	8	110
	Pakpattan	22	65	87	12	110
	Okara	25	60	85	10	120
Total		64	195	259	30	340
Lahore	Lahore	5	45	50	5	55
	Sheikhupura	20	50	70	5	110
	Nankana Sahib	15	45	60	5	70
	Kasur	10	60	70	11	110
Total		50	200	250	26	345
Total Sub Zone 1		147	675	822	162	1100

Target of Various Interventions during 2021-22
Subzone – 2

Division	District	Watercourse (No.)		Sub Total	WST	LLL
		Regular	Additional			
Gujranwala	Gujranwala	35	60	95	6	110
	Hafizabad	25	60	85	10	90
	Narowal	25	60	85	9	75
	Sialkot	35	60	95	6	90
	M. B. Din	35	60	95	3	80
	Gujrat	25	60	85	18	65
Total		180	360	540	52	510
Sargodha	Sargodha	40	80	120	27	85
	Khushab	40	65	105	27	70
	Bhakkar	40	80	120	10	85
	Mianwali	31	80	111	7	65

Target of Various Interventions during 2021-22
Subzone – 3

Division	District	Regular	Additional	Sub Total	WST	LLL
Bahawalpur	Bahawalpur	23	55	78	49	150
	R. Y Khan	27	80	107	79	150
	Bahawalnagar	15	55	70	65	150
Total		65	190	255	193	450
D. G. Khan	D. G. Khan	25	60	85	32	90
	Muzaffargarh	20	60	80	8	90
	Layyah	10	50	60	8	90
	Rajanpur	20	60	80	7	60
Total		75	230	305	55	330
Multan	Multan	22	60	82	13	65
	Khanewal	22	60	82	11	90
	Vehari	20	60	80	12	90
	Lodhran	18	60	78	9	60
Total		82	240	322	45	305

District Wise Target Water Storage Tank targets in Rawalpindi Division during 2021-21

Sr. #	Division	District	Water Storage Tank/Ponds (No.)
1	Rawalpindi	Rawalpindi	57
2		Attock	53
3		Chakwal	86
4		Jhelum	26
Total: -			222

4.2.3 Regular Monitoring of Interventions in the Field –KP Zone

Regular Monitoring activities of KP Zone comparative remained very slow, however experts remained engaged in other activities related to ME&IE. On October 6, 2021, KP Zonal office conducted training of

field staff on water flow measurement of a watercourse. DTL KP Zone organized this training in collaboration with AGES consultants.

Following personnel participated in this training.

1. Mr. Matloob Hussain, Field Team Members
2. Dr. Humayun Khan, DTL KP Zone

3. Engineer Zubair shah AGES Consultants Field Team Members
4. Engineer Zubair shah, AGES Consultants
5. Engineer Rehmat shah, Field Team Members

Engineer Zubair shah explained the method of water flow measurement of different flows i.e., low, medium, and high-level. He explained the application of pigmy meter for measuring the water flow. By taking the hypothetical measurements the water flow was calculated with the help of formulas. Participants practiced calculation of water flow; LPS by applying mathematical formulas.

With the company of two resource persons participants visited a watercourse nearby the university town and carried out physical demonstration of water flow measurement by Pigmy Current Meter. This exercise was performed by the participants under the supervision of the Engineers Zubair Shah and Engineer Rehmat Shah from AGES Consultants.



Figure 4.2: DTL KP Zone introducing Engineer Zubair Shah for providing training on Water Flow Measurement to Field Team.



Figure 4.3: Engineer Zubair Shah from AGESC providing Training to Field Team of KP Zone



Figure 4.4: During Training Field Team Engineers performing water flow measurement by pigmy meter on a watercourse.

4.2.4 Regular Monitoring /Field Visits Details - Balochistan Zone

Detail of Field Activities carried out by Balochistan field teams is given below.

4.2.4.1 Field Visits detail of Regular Monitoring / Spot Checking - Balochistan Zone

Team – 1: Monitored by Mohammad Tariq, FTI / M&E Expert and Saleem Ahmed M&E Officer.

1. Field Visit Date – 28th Oct, 2021

Scheme:	Watercourse
Name of Farmer:	Abdul Quddus
Name of village:	Abdul Samad Lehri
Union council:	Jhuder Shumali
Chairman WUA:	Abdul Qudus
District:	Naseerabad
Tehsil	Dera Murad Jamali
Coordinates	N: 28.495753 E: 68.2143128
Source of irrigation:	Canal
Total length of watercourse:	410.6 Meters
Estimated length of lining:	350 Meters

Command area of watercourse:	80 Acres
No of beneficiaries:	6
Starting date:	Not available
Year of construction:	2019-20
Cost of Construction of WC:	2,825,815/=
Quality of Work	Satisfactory. However, in some places back filling was not proper.
IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	5 Acre cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	No
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Farmer said that Water Saving Increased and Conveyance loss decreased 50% Increased cropping of vegetables. Medi station and Soil and water testing center should be provided. Facing difficulties due to electricity shortage. There are almost 16-20 hours load shedding in this area
General Observations	<ul style="list-style-type: none"> Overall farmer was happy and thankful on Government initiatives
Bottlenecks	<ul style="list-style-type: none"> The completed file of scheme was not available with staff of OFWM.

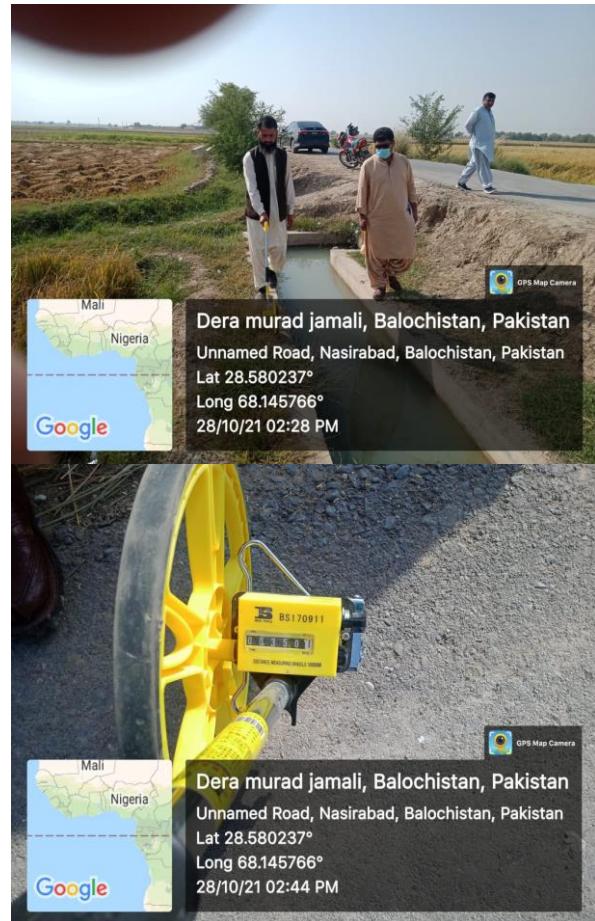


Figure 4. 5: Measuring Length of WC Abdul Quddus

2. Field Visit Date – 28th October, 2021

Scheme:	Watercourse
Name of Farmer:	Sanaullah
Name of village:	Abdul Majeed Lehri
Union council:	Jhuder Shumali
Chairman WUA:	Sanaullah
District:	Naseerabad
Tehsil	Dera Murad Jamali
Coordinates	N: 29.4829823 E: 67.6360474
Source of irrigation:	Canal
Total length of watercourse:	438.5 Meters
Estimated length of lining:	368.0 Meters
Command area of watercourse:	350 Acres
No of beneficiaries:	6
Starting date:	N/A
Construction Year:	2019-20
Cost of Construction of WC:	2,825,815/=
Quality of Work	Not Satisfactory,

	Some cracks found in WC
IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	6 Acres cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	No
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Farmer said that Water Saving Increased and Conveyance loss decreased 50% Increased cropping of vegetables. Facing difficulties due to heavy load shading of 16-20 hours in a day.
General Observations	<ul style="list-style-type: none"> Overall farmer was happy and quite satisfied
Bottlenecks	<ul style="list-style-type: none"> The completed file of scheme was not available with OFWM staff.



Figure 4.6: Watercourse at Farm



Figure 4.7: Cracks Seen In Pictures

3. Field Visit Date – 28th October, 2021

Scheme:	Watercourse
Name of Farmer:	Shafeeq Ahmed
Name of village:	Dirghee
Union council:	Dirghee
Chairman WUA:	Shafeeq Ahmed
District:	Sohbat Pur
Tehsil	Sohbat Pur
Coordinates	N: 29.4829227 E: 67.6360169
Source of irrigation:	Canal
Total length of	404.0 Meters

watercourse:	
Estimated length of lining:	377.9 Meters
Command area of watercourse:	20 Acres
No of beneficiaries:	6
Starting date:	Not available
Construction date:	2019,20
Cost of Construction of WC:	2,825,815
Quality of Work	Satisfactory,
IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	2 Acre cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	No
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Water Saving Increased and Conveyance loss decreased 40% Increased cropping 10%
General Observations	<ul style="list-style-type: none"> Farmer were demoing that 10 years old WC may also be considered for new schemes.



Figure 4.8: Monitoring visit WC Shafiq Khosa District Sohtbatpur with Mr. Imdad khosa DDA Sohtat Pur

4. Field Visit Date – 28th October, 2021

Scheme:	Watercourse
Name of Farmer:	Ghulam Haider
Name of village:	Ghulam Haider
Union council:	Ghuri
Chairman WUA:	Ghulam Haider
District:	Sohbat Pur
Tehsil	Faridabad
Coordinates	N: 28.4776396 E: 68.4561469
Source of irrigation:	Canal
Total length of watercourse:	540.0 Meters
Estimated length of lining:	357.3 Meters
Command area of watercourse:	350 Acres
No of beneficiaries:	6
Starting date:	N/A
Construction Year:	2019-20
Cost of Construction of WC:	2,825,815/=
Quality of Work	Not satisfactory
IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	6 Acres cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	No

Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Water Saving increased 50% Cropping intensity increased 10%
General Observations	<ul style="list-style-type: none"> Watercourse was not properly maintained by the farmer, back filling in various points were missing.

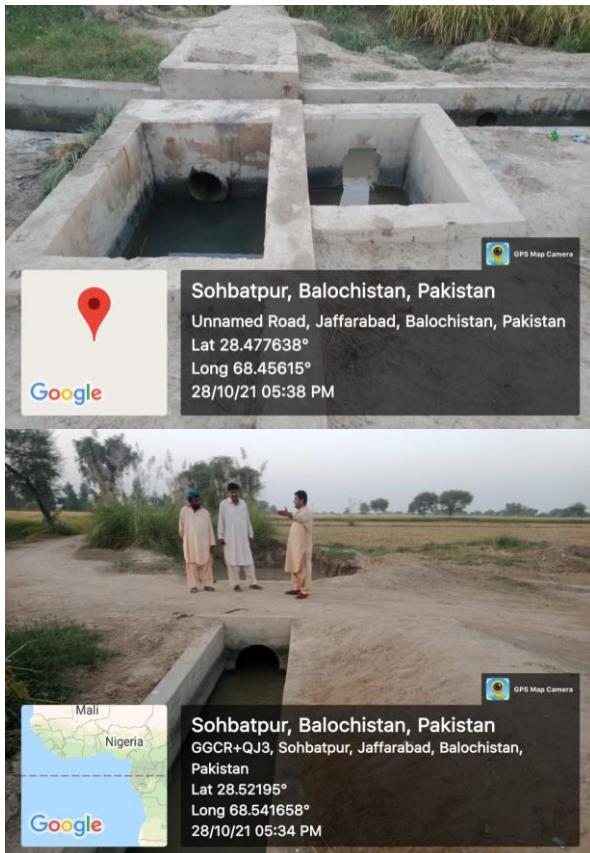


Figure 4.9 Ghulam Haider WC Dist Sohbatpur

Team – 3: Monitored by Rizwan Ahmed, DTL. Manzoor Ahmed Kasi, M&E Expert and Mah Gul Noor, Saleem Ahmed Abro and Hamza H. Qureshi, M&E Officers.

1) Field Visit Date – 25th October, 2021

Scheme	Water Storage Tank
Farmer Name	Saleh Muhammad
Name of village:	Qasiabad
Union council:	Kechi Baig
Chairman WUA:	Saleh Muhammad
District:	Quetta

Tehsil	Chiltan
Coordinates	N: 30.07338 E: 66.95636
Source of irrigation:	Tube Well
Type of Construction of water storage tank:	Brick Masonry
Shape of Water storage tank	Square
Size of water storage tank:	41x40.3 Ft.
Depth of WST:	4.8 Ft.
Command area of water storage tank:	30 Acres
No of beneficiaries:	1
Financial Year of Scheme	2020-2021
Quality of work	Not Satisfactory
IMPACT:	
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Not applicable, As source of water was Tube well, He was solo owner
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	Yes
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Found happy with government initiatives.
General Observations	<ul style="list-style-type: none"> Backfilling was not done of 3 sides of WST. Bricks used in the construction were of sub-standard. WST was not being cleaned properly due to which mud, fungi, shoppers, stones etc., were found.



Figure 4.10: Group photo with OFWM staff (above) and view of WST (below)

2) Field Visit Date – 25th October, 2021

Scheme	Water Storage Tank
Farmer Name	Waseem Khan
Name of village:	Mustafabad
Union council:	Shadinzai
Chairman WUA:	Waseem Khan
District:	Quetta
Tehsil	Chiltan
Coordinates	N: 30.147504 E: 66.952871
Source of irrigation:	Tube Well
Type of Construction of water storage tank:	Brick Masonry
Shape of Water storage tank	Square
Size of water storage tank:	60x60 Ft.
Depth of WST:	4.7 Ft.

Command area of water storage tank:	20 Acres
No of beneficiaries:	1
Financial Year of Scheme	2020-2021
Quality of work	Not Satisfactory
IMPACT:	
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Not applicable, As source of water was Tube well, He was solo owner
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	Yes
Overall feedback of Farmer / Beneficiary	Found satisfied due to benefits of the WST, but had complaint regarding quality of WST.
General Observations	<ul style="list-style-type: none"> A crack was found in one corner of WST, causing of seepage.



Figure 4.11: View of Crack in the wall of WST (above),
Group photo with OFWM Staff at Site (below)

4.3 ONLINE DATA ENTRY IN ANDROID BASED APPLICATION

Data collection carried out through Android Based Application developed by ICT Specialist of ME&IE Consultants NPIWC-II.

Data entry is done directly by the field monitoring teams of all the zonal offices and is uploaded in the MIS system. The data is being observed and monitored by the ICT Expert of ME&IE Consultants.

4.4 MEETINGS OF ME&IE CONSULTANTS WITH STAKEHOLDERS REGARDING PROJECT PROGRESS / ISSUES

4.4.1 Meetings of ME&IE Consultants – ICT Zone 4.4.1.1 Team Leader ME&IE Consultants NPIWC-II Visit of GB Project Areas 20 October 2021 to 21 October 2021

Team Leader Dr. Usman Mustafa conducted 2 days' joint field visit of Gilgit Baltistan project areas along

with Mr. Tahir Anwar National Program Coordinator (NPC), Mr. Ali Raza Naqvi (Irrigation Agronomist) Federal Water Management Cell, and Mr. Iftikhar Ali Arain DTL-NWMC.

Team Leader visited Watercourses and Water storage tanks constructed under the project NPIWC-II.

Discussions were held with farmers' representatives and personnel of On Farm Water Management and Irrigation Departments of GB. Team Leader conducted discussions with department personnel and interviewed different farmers while visiting watercourses and water storage tanks. Farmers were asked to share their point of views regarding the program NPIWC-II and benefit they achieved through this program. Farmers shared their point of views in terms of benefits received through this program and also expressed their further expectations.

Detail of Visit is as under:

1- Visit of District Ghizer: 20 October 2022

Team Leader along with NPC, Irrigation Agronomist, and DTL-NWMC visited watercourse of Mr. Muneer Land owner.

Overall following personnel joined this visit.

1. Mr. Tahir Anwar, NPC
2. Mr. Ali Raza Naqvi, Irrigation Agronomist FPMU
3. Dr. Usman Mustafa Team Leader ME&IE Consultants NPIWC-II
4. Mr. Iftikhar Arain, DTL-NWMC
5. Adil Hussain Deputy Director OFWM & Irrigation Department District Ghizer
6. Naeem Abbas Assistant Engineer OFWM & Irrigation Department District Ghizer
7. Farmers

Adil Hussain Deputy Director OFWM, District Ghizer, Naeem Abbas Assistant Engineer District Ghizer and Farmers welcomed the NPC, Team Leader and participants of the visit.

Farmers thanked NPC and participating visiting the watercourse and listen the farmers' issues regarding the water availability for their lands.



Figure 4.12: NPC, TL, Irrig. Economist, DTL-NWMC, DD Ghizer & Asst Engr. Ghizer in discussion with Farmers



Figure 4.13: NPC, TL, Irrig. Economist, DTL-NWMC, DD Ghizer & Farmers at the during visit of Watercourse

NPC and the participants visited watercourses and listened the point of views of the farmers. On questioning farmer's point of view on availability of water before and after improvement of water course, farmer told that;

"Before improvement of watercourse we usually faced shortage of water for our agricultural land / crops. Most of the times we borrow water from each other to fulfill the water requirement for our crops. Before improvement there was also wastage of water due to water logging and also took time to reach the lands. After improvement of watercourse we now have plenty of water and are irrigating our lands in a better way. Farmer said that they are very happy on this intervention of OFWM & Irrigation Department; they are thankful to the department on facilitating the farmers by improving the watercourses. Farmers requested NPC to give approval for the improvement of remaining portion of their watercourse so that that get sufficient water upto the tail of watercourse".



Figure 4.14: Farmer Giving Detail of Watercourse to NPC & Team Leader (Screen shot of Video Clip)

Farmers Says; ab hamain dosroon se pani udar lene ki Zarorat nahi narti



Figure 4.15: NPC & TL ME&IE Consultants with Farmers along with Irrigation Agronomist and DTL-NWMC (Screen Shot from Video Clip)



Figure 4.16: Team Leader ME&IEC Visiting under Construction Watercourse



Figure 4.17: Farmers with NPC & Team Leader visiting under Construction Watercourse



Figure 4.20: NPC, Team Leader and Irrigation Economist visiting Water Storage Tank also being used for Fisheries Development

2- Visit of Gilgit: 21 October 202

NPC, Team Leader, Irrigation Agronomist, and DTL-NWMC visited newly constructed watercourse along with farmers. NPC appreciated construction quality of watercourse and keen interest of farmers in improvement of watercourses under the project.



Figure 4. 18: Newly Constructed Watercourse



Figure 4. 19: NPC Visiting Newly Constructed Watercourse

NPC and Team Leader listened farmers issues and their satisfaction level on the intervention of improvement of watercourse under the NPIWC-II program.

Farmers expressed their satisfaction and told that they are now getting more water and for their crops. Farmers requested to carry out further improvements of watercourses to facilitate them. Farmers are not planning to improve cropping pattern and planting orchids.

On inquiring about some digging in the areas of water channels, the farmer replied that now he is intended to plant new orchard instead of field crops.

A watercourse was damaged due to land sliding. Farmer placed a plastic sheet on its damaged bed to receive water for his land which shows interest of farmers in availing water from the watercourse.



Figure 4.21: NPC, Team Leader and other participants with Farmers

Team Leader asked representative of farmers regarding their arrangements for maintenance of watercourse. He replied that each farmer is responsible to take care of watercourse falling within his land. He further added that if a farmer does not take care of watercourse falling in his land, we shall charge him a fine.



Figure 4.22: Farmers Says, if a Farmer doesn't take care of his watercourse we shall fine him

provision of funds and their contribution towards the improvement of watercourses. Farmer told that they are very cooperative. Team Leader asked in a joking mode from the farmer "did department personnel demand some Chae Pani from farmers". He replied;



Figure 4.24: Farmers says Department Personnel did Demand eve a cup of Tea from Farmers (Screen shot of a video Clip)



Figure 4.23: Team Leader in Discussion with Farmers (A Screen Shot of Video Clip with farmers)

Team Leader asked the farmer about the behavior and conduct of Department personnel regarding the



Figure 4.25: TL ME&IE Consultant Listening Farmers' Issues



Figure 4.26: NPC and TL ME&IE Consultants Listing to Farmers

3- Meeting with Director Water Management & Irrigation Department Mr. Sher Jehan

NPC, Team Leader, Irrig. Economist, and DTL-NWMC along with representative of the farmers met Director Water Management and Irrigation Department in his office and discussed the progress on NPIWC-II. NPC asked Mr. Sher Jehan Director WM & Irrigation to share his concern regarding the intervention of the NPIWC-II program.



Figure 4.27: NPC, Irrig. Economist, Team Leader ME&IE and DTL-NWMC in Meeting with DD OFWM & Irrig. Department GB



Figure 4.28: NPC, Irrig. Economist, Team Leader ME&IE, DTL-NWMC, and Farmers in Meeting with Director OFWM & Irrig. Department GB

4- Meeting with Secretary Water Management & Irrigation Department Mr. Ahsan Ali

NPC and Team Leader ME&IE also met Secretary Water Management and Irrigation Department Gilgit Baltistan in his office and gave briefing to secretary on NPIWC-II program and future planning on the project.

NPC presented project progress report to Secretary. Secretary showed his satisfaction on the project interventions.



Figure 4.29: NPC & TL ME&IEC Meeting with Secretary OFWM – NPC Presented Project Progress Report to Secretary

5- Interview to Media

Representative of media (PTV, and Newspaper) also met the NPC and Team Leader. Team Leader explained to media NPIWC-II project is a Project of Prime Minister of Pakistan for improvement of Agriculture in Pakistan. NPC told to media that this project will be very beneficial for the country and will bring a big revolution in the agriculture sector. He to that in five years 2500 water channels will be constructed with a cost of 5 billion Pak. Rs.



Figure 4.30: NPC in an Interview on PTV



Figure 4.31: Team Leader with NPC in an Interview on PTV



Figure 4.32: Media Coverage of NPC & Team Leader Visit to GB

4.4.2 Meetings of ME&IE Consultants – KP Zone

Date	October 1, 2021
Venue	AGES Consultants' office 57-E, Canal Road Peshawar
Participants	

1. Mr. Muhammad Nasir, Chief AGES Consultants
2. Dr. Humayun, DTL KP Zone ME&IE consultants
3. Mr. Mehmoodul Hasan, FTI ME&IE consultants Team
4. Mr. Inamullah FTI ME&IE consultants Team

Meeting Agenda/Points discussed:

Training of Field Team on Pigmy Meter for Water Flow Measurement

In continuation of the workshop held in August 30-31, and September 1, 2021, in National Office Islamabad, the DTL KP zone approached, Sardar Muhammad Zafar, Superintendent Engineer (S.E) Irrigation Department KP, for the deputation of an expert to act as resource person for water measurement training of the field teams of ME/IE consultants. As the Irrigation Department KP has engaged AGES Consultants for the same purpose, so S.E. requested Chief Consultant AGES to provide the same services to our survey teams. On the reference of SE, the DTL KP zone arranged a meeting with the Chief Consultant AGES and expressed interest in acquiring services of an engineer for training on water measurement of the Field Teams by Pigmy Current Meter. The matter was discussed in detail in a very cordial atmosphere and Mr. Muhammad Nasir, Chief of AGES Consultants promised to provide the engineer for said purpose. It was agreed that two Civil Engineers will be deputed on October 6, 2021 from the AGES consultants and they will impart training to the field teams.



Figure 4.33: Meeting of the DTL KP and FTIs with the Chief Consultants AGES

Date	October 12, 2021
Venue	Directorate of Water Management KP
<ol style="list-style-type: none"> Participants Dr. Rabnawaz Khan, District Director OFWM Department, Provincial Coordinator NPIWC-II Mr. Fawad Ahmad, IT Manager ME/IE Consultants NPIWC-II Engineer Muhammad Jameel, OFWM Department KP 	
Meeting Agenda:	
<p>Meeting of Mr. Fawad Ahmad IT Manager KP zonal office with Dr. Rabnawaz Khan, District Director/ Provincial Coordinator NPIWC-II to discuss Data Format</p> <p>The DTL KP Zonal office deputed Mr. Fawad Manager IT ME/IE Consultants NPIWC-II to Water Manager Department to discuss the data format we required for our field survey. The Officials of the Water Management Department agreed to facilitate the Field Survey Team in this regard.</p>	



Figure 4.34: Meeting with Ali Raza Jamali, Director General, Agriculture, OFWM, Balochistan, Quetta

4.4.3 Meetings of ME&IE Consultants – Balochistan Zone

Date	5 th October 2021
Venue	Office of Director General, OFWM at Sariab Road, Quetta.
Participants	
<ol style="list-style-type: none"> Mr. Ali Raza Jamali, Director General, Agriculture, OFWM, Balochistan, Quetta. Mr. Manzoor Kasi, FTI / M&E Expert, ME&IE Consultants. 	
Meeting Agenda/Points discussed:	
<ol style="list-style-type: none"> The DG requested give necessary direction to concern staff regarding submission of complete data/beneficiary inventor of F.Y 2019-20 and FY 2020-21 as per provided formats which is required for Balochistan Dashboard. The issue of uncompleted files and issuance of TS were also discussed. The status of new schemes of F.Y. 2021-22 were also discussed. The FTI/M&E Expert briefed to DG about planning of monitoring visits regarding Baseline Phase-2. 	

Date	5 th October 2021
Venue	Office of Director General, OFWM at Sariab Road, Quetta.
Participants	
<ol style="list-style-type: none"> Mr. Faqir Muhammad, Deputy Director, Agriculture, OFWM, Mastung. Mr. Behram Mulghani, Agriculture Officer, OFWM, Quetta Mr. Manzoor Kasi, FTI / M&E Expert, ME&IE Consultants. 	
Meeting Agenda/Points discussed:	
<ol style="list-style-type: none"> The FTI/M&E Expert of ME&IE Consultants met with Mr. Behram Mulghani, Agriculture Officer, OFWM regarding collection the data/beneficiary inventory of F.Y 2019-20 and FY 2020-21. The FTI/M&E Expert also met with Deputy Director, OFWM, Mastung to discuss the field progress. 	



Figure 4.35: Meeting of Mr. Manzoor Kasi, FTI / M&E Expert with Mr. Faqir Muhammad, DD, Mastung and Mr. Behram Mulghani, Agriculture Officer, Quetta

Date	5 th October 2021
Venue	Office of Director General, OFWM at Sariab Road, Quetta.
Participants	
i.	Mr. Muhammad Yahya Hasni, Deputy Director, Agriculture, OFWM, Kharan.
ii.	Mr. Manzoor Kasi, FTI / M&E Expert, ME&IE Consultants.
Meeting Agenda/Points discussed:	
i.	The FTI/M&E Expert of ME&IE Consultants met with Mr. Yahya Muhammad Hasni, DD, Kharan OFWM regarding collection the data/beneficiary inventory of F.Y 2019-20 and FY 2020-21.
ii.	The FTI/M&E Expert also met with Deputy Director, OFWM, Mastung to discuss the field progress.



Figure 4.36: Meeting of Mr. Manzoor Kasi, FTI / M&E Expert with Mr. Muhammad Yahya Hasni, DD, Kharan

4.5 INTERNAL MEETINGS OF ME&IE CONSULTANTS

4.5.1 Joint Meeting / Workshop in National Office Islamabad

Date	27th October 2021
Venue	National Office, ME&IE Consultants, Islamabad.
Participants	
i.	Dr. Usman Mustafa, Team Leader ME&IE Consultants NPIWC-II
ii.	Dr. Umar Farooq, DTL, Islamabad
iii.	Dr. Humayoun Khan, DTL, KPK

- iv. Muhammad Yousaf Bhatti, DTL, KPK
- v. Rizwan Ahmed, DTL, Balochistan
- vi. Prof. Dr. Muhammad Abdul Quddus Malik, Agriculture Economist ME&IE Consultant NPIWC-II
- vii. Dr. Mansab Ali, Irrigation Economist ME&IE Consultants Water
- viii. Muhammad Amjad Shakeel, Project & Documents Controller

Meeting Agenda/Points discussed:

After taking over charge of Team Leader Dr. Usman Mustafa conducted a Zoom Meeting with all the DTLs and other staff members of ME&IE Consultants, to discuss the project progress and issues being faced by the consultants.

- i. The Team Leader, Dr. Usman Mustafa, welcomed all the participants and requested Dr. Humayoun Khan, DTL KP Zone for reciting few verses from the Holy Quran. After recitation of Holy Quran. Team Leader formally inaugurated the meeting and following discussions were held and decisions were made in the meeting.
- ii. Dr. Usman Mustafa introduced himself as new Team Leader of ME&IE Consultants.
- iii. Dr. Umar Farooq, DTL, Islamabad also introduced himself as new DTL and shared his past work experience
- iv. Financial issues were discussed
- v. Dr. Muhammad Abdul Quddus suggested that a mock exercise should be done on monitoring tools before starting 2nd phase of baseline survey.
- vi. Team Leader suggested that first of all the DTLs should review the MTs and give their suggestion for amendments / improvement and addition / deletion of any indicator and forward to Dr. Umar Farooq DTL National Office Islamabad.
- vii. Team Leader instructed that we have to take baseline of each water related developmental activity in the project areas.
- viii. Team Leader instructed that each zonal office must prepare at least one case study of intervention of their relevant zone every month and include in Monthly Monitoring Report.
- ix. Team Leader advised all the DTLs to make short video clips of discussions with farmers, prepare case studies of success stories of the project interventions by making flyers / broachers of case studies
- x. All the Zonal office must consider highlighting the economic aspects, gender aspects as well as social aspects of the project.
- xi. Team Leader said that a Project Manual is under preparation to facilitate all the zonal offices.

4.5.2 Internal Meetings of Zonal Office Punjab

Date	22 October 2021	23 October 2021		
Venue	Punjab Zonal Office Lahore			
Participants				
All Field Teams Members				
Meeting Agenda:				
To review and update on Monitoring tools and baseline Questionnaire. Two Days training was organized by the field teams under the supervision of Mr. Muhammad Yousaf Bhatti (DTL Punjab) from 25-10-2021 to 26-10-2021. All field staff was given a mock exercise before going to field for better understanding of field environment. All this was carried out to minimize errors while uploading data through android base application ODK (Open Data Kit) and the interview with farmers. One person was a farmer and the other became an interviewer for questioning. This yielded a very positive result before field visit.				



Figure 4.37: Review Training of Field at Punjab Zonal Office Lahore



Figure 4.38: Mock Exercise between Two Field Members

4.6 ICT ASSIGNMENT

4.6.1 Development of Website of NPIWC-II

The development of Website for NPIWC Phase-II was started by the month of February 2021. The following activities have been completed: -

- Held meetings with the Stakeholders to identify the project website requirements
- Website layout structure prepared
- Design & Development of website completed.

The Revision/up-dation of the Project website has been presented to NPC office and got approval on all changes. Currently all changes have been incorporated accordingly as per requirements of the Client.

The final Beta version was demonstrated to NPC in his office by August 2021. Now it is completed in all respect.

4.6.2 Designing of Dashboard of Project Interventions

Dashboard is completed in all respect. ICT Team acquired Watercourses data from OFWM ICT Zone. ICT team carried out cleaning and validation of all back log data of watercourses and put it on Dashboard.

4.7 MONITORING / DATA COLLECTION ON SOCIAL AND GENDER COMPONENT

The case studies are envisioned to offer all stakeholders an opportunity to unpack and understand the role of gender differences in driving agriculture and effects of irrigational outcomes, how program impacted, identify, and whether the program also promotes gender equality and women's empowerment. The cases are not meant to be perfect examples of how gender differences are identified and managed, but are meant as a learning tool intended to:

1. Provide insight into specific areas where gender differences exist.
2. Showcase real programs that have intentionally worked to integrate a gender lens into their delivery, whether from the outset or as a course correction.
3. Examine challenges and emerging lessons about integrating gender across programming and policy.

Case studies consist of three phases:

1. The **base line phase** focuses on an assessment of local conditions and practices and builds relationships. The assessment covers four areas:
 - program and policy environment;
 - current conditions and practices;
 - physical conditions; and
 - social and cultural conditions
2. During the **implementation phase** staff and partners works with community members through a participatory approach for mapping the landscape of current practices. How the project activities impacting local lives social financially. Measuring the effects at midline

Finally, in the **post implantations phase**, conduct follow-up household visits, attend community meetings, and share technical advice for maintaining facilities to ensure the communities remain after the program's completion.

A format for Case study has been devices and is attached as **Annex-E** to this Report.

4.8 CASE STUDY ON THE INTERVENTION

Project's Economic Outlook

A Success Story of a Farmer at Tail of an Improved

Watercourse:

A watercourse is a community irrigation channel used for sharing water among shareholders through a weekly rotation system called "Warabandi". Community watercourses are connected to farmers' fields through a complex system of channels and ditches. Water losses in watercourses are of significant nature, mainly through spillage, seepage, side leakage, evaporation etc. which results in a shortage of irrigation water at the farm level, particularly in tail reaches that compel the farmers to use groundwater for irrigation purposes.

The improvement of watercourses is a community-driven activity that is being undertaken through a participatory approach with the active involvement of Water Users Associations (WUAs), organized and registered on each watercourse. This community-based development model is helping the poor and small land holders to improve their living standards. Here is a success story of a member of Water Users Association Mr. Ahmad Rabani (Treasure) and a farmer having this land holding at the tail of watercourse.



Figure 4.39: Figure 4. 1Mr.Ahmad Rabani (Treasure of WUA)

Brief profile of Watercourse is given as under:

Wc. ID	43000-R
Category	Additional
Year of Improvement	2019-20
*Already Lined	3969 meters
New Lining	1319 meter (50%)
Name of Chairman	Muhammad Ismail
Contact No.	0300-6374757
Name of Treasure/Farmer	Mr. Ahmad Rabani
Minor/Distributary	Rana Minor
Contact No.	0302-7306302
Mouza/Qasba	Maral
Tehsil	Multan
District	Multan

*Improved during the F.Y. 2002-2003 to 2016-2017 under various phases of ADP.



Figure 4.40: View of 43000-R Water Course Qasba Maral Tehsil & District Multan

The community of **Water Course 43000-R, Mouza/Qasba Maral, tehsil Multan, district Multan** were facing huge water losses problem due to seepage, side leakage and spillage since long and usually experiencing water shortage at their farms as they

were unable to use groundwater because of its extremely poor quality for irrigation and being very costly.

While searching for solution, the community learnt about the government facility for watercourse improvement and approached the OFWM staff for rescue. The OFWM staff suggested the farmers for re-organizing a water user association for improvement of the watercourse. The community availed the facility being provided by the Government which has changed their lives.

According to Mr. Rabani:

"Before the improvement of a watercourse, my whole land (125 Acres) was uncultivated because of being at the tail end of watercourse and water shortage and water theft. After improvement of the water course I am getting plenty of water and now all of my land (125 Acres) is being irrigated due to proper flow of water at the tail end of watercourse"

Mr. AHMAD RABANI, the shareholder of the watercourse and treasure of the WUA, shared the benefits of improved watercourse. He added that "conflicts/disputes have also been reduced significantly. Major conflicts among the farmers were due to water theft and side leakage of the water which used to damage the crops of other farmers having lands along the watercourse".

In reply to the questions on benefits of such improvement of watercourse he replied that improved watercourse enabled us to irrigate more land with the same quantity of water. It also helped us to save labor expenses as 5-10 workers were required for irrigation before the improvement of the watercourse. Now one worker is enough for the purpose. He further shared that "another major benefit is better cropped with canal water as groundwater is not fit for the growth of crops and causes lower yields. Before watercourse improvement, the shareholders quit growing sugarcane due to water shortage and the land of some farmers had become almost barren owing to shortage of water leading to use of poor-quality groundwater but now they have not only started to grow sugarcane but their wheat and other crops' yield has also been doubled.

Mr. Ahmad Rabani's face reflects the happiness about this intervention when asked how much benefits are expected, he claimed the benefits are defined but how much, time in near future will tell it.



Figure 4.41: Field Team Multan interviewing the farmer
Mr. Ahmad Rabani

"Mr. Ahmad Rabani says we are very thankful to the government for this opportunity and advised other farmers to take full advantage of this intervention scheme of the government."

CHAPTER 5: WORK PLAN-ACTIVITIES OF THIRD QUARTER

The ME&IE Consultants' activities initiating during the Fourth Quarter 2021 (October 1, 2021 to December 31, 2021) are listed below. A tentative Work Plan for 4th Quarter (October 1, 2021 to December 31 2021) showing time span detail is given as **Annex-A**.

Pre-Field Activities

Training sessions regarding Testing of Monitoring tools and Android based system and their hands on practice were conducted at ME&IE Zonal offices during the course of reporting period.

Field Activities

- i) Data collection from OFWM Department /NWMC for Baseline survey/regular monitoring
- ii) Training Session of field staff and Key staff on Survey Manual of MTs and Android Base System
- iii) Training of Measurement of water flow-Pygmy current meter
- iv) Determinants of Sample size at District/Tehsil levels with the assistance from ADA/DDA (OFWM)
- v) Baseline survey field visit
- vi) Data entry, Data cleaning, Data processing & data Analysis
- vii) Regular Monitoring

ICT Assignment

- i) Development of website of NPIWC-II.
- ii) Development of Android based Mobile Application.
- iii) Testing of Monitoring tools on Android based system.
- iv) Data collection of interventions in MIS/GIS database.
- v) Designing of dashboard of Project Interventions.

Coordination

- i) Meeting of DTLs with respective DTL of NWMC
- ii) Meetings of Team Leader and for refinement of Monitoring Tools.

Deliverables

The detail of deliverables of ME&IE Consultants with the timelines are as under:

Document	Status
Draft Inception Report	Submitted
Final Inception Report	Submitted
Monthly Monitoring Report-First (DEC 2020-JAN 2021)	Submitted
Monthly Monitoring Report-Second (FEB 2021)	Submitted
Monthly Monitoring Report-Third (MAR 2021)	Submitted
Quarterly Monitoring & Evaluation Report-First (JAN-MAR 2021)	Submitted
Monthly Monitoring Report-Fourth (APR 2021)	Submitted
Monthly Monitoring Report-Fifth (MAY 2021)	Submitted
Monthly Monitoring Report-Sixth (JUNE 2021)	Submitted
Quarterly Monitoring & Evaluation Report-Second (APR-JUN 2021)	Submitted
Monthly Monitoring Report-Seventh (JULY)	Submitted
Monthly Monitoring Report-Eighth (AUGUST 2021)	Submitted
Annual Monitoring and Evaluation Report	Submitted
Baseline Survey Report (Draft)	Submitted
Monthly Monitoring Report-Ninth (SEPTEMBER 2021)	Submitted
Quarterly Monitoring & Evaluation Report-Third (JULY - SEPTEMBER 2021)	Submitted
Special Reports: <ul style="list-style-type: none"> • Monitoring Tools • Survey Manual • PAM • Working Paper on Technology and Methodology for Implementation of Android Based Field Progress Data Collection and GIS Based Progress Monitoring Analytical Dashboard 	Submitted
Monthly Monitoring Report-Ninth (OCTOBER 2021)	To be submitted within stipulated time

Deliverables/Reporting Requirements is placed at **Annex-D**.

Matrix of Responsibilities

The Matrix of Responsibilities is placed at **Annex-B**.

CHAPTER 6: ISSUES / BOTTLENECKS

The ME&IE Consultants are continuously following constraints for timely initiating the activities:

- Non availability of Technical Sanctions of the watercourses required for baseline survey
- Non-availability of complete up-to-date inventory / data of all interventions from the Client, Provincial Agricultural Departments & NWMC (NESPAK) till to date.
- Due to non-availability of NWMC (NESPAK) deliverables/reports, ME&IE Consultants are facing hurdles to evaluate working of NWMC. In this regard the cooperation of NWMC and respective Directorates is required.

ANNEXES A to E

ANNEX-A: TENTATIVE WORK PLAN

ANNEX - A: TENTATIVE WORK PLAN OF 4TH QUARTER

TENTATIVE WORK PLANNED FOR 4th QUARTER (October To December 2021)												Legend	
No.	ACTIVITIES	3 Months-Year 2021 (Weeks)											
		October				November				December			
		WK-1	WK-2	WK-3	WK-4	WK-1	WK-2	WK-3	WK-4	WK-1	WK-2	WK-3	WK-4
1	Field Activities												
1.1	Regular Monitoring of Interventions in the Field	↓	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	↓
1.2	Data collection of the interventions in the field	↓	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	↓
1.3	Baseline Survey stage - 2		↓	-----	-----	-----	-----	↓					
1.4	Online data entry in android based application	↓	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	↓
2	ICT Assignment												
2.1	Development of website of NPIWC-II	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2.2	Monitoring online data collection and Data entry	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2.3	Monitoring Android based Mobile Application under implementation by field staff.	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2.4	Data collection of interventions in MIS/GIS database	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	↓
3	Coordination												
3.1	Meetings of TL with NPC and OFWM Departments regarding Project Progress / Issues	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3.2	Meeting of DTLs with respective DTL of PC & concerned OFWM Departments	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
4	Deliverable												
4.1	Monthly Monitoring Report	↓	-----	↓	-----	↓	-----	↓	-----	↓	-----	↓	-----
4.2	Quarterly Monitoring Report	↓	-----	↓	-----			↓	-----			↓	-----
4.3	Baseline Survey Report stage - 2							↓	-----	↓			

ANNEX - B: MATRIX OF RESPONSIBILITIES

MATRIX OF RESPONSIBILITIES

SR. NO.	DELIVERABLE / ACTIVITIES	LEGEND			
		● Primary Responsibility	○ Secondary Responsibility	○ Assistance	ME&IE Consultants
NPC-FPMU	Agriculture Dept. (OEWMA)	Project Consultants	ME&IE Consultants		
1	Provision of Pre-requisite data of project components for starting of Field Activities: <ul style="list-style-type: none"> • Organization of Water Users Associations, • Watercourses Improvement, • Water Storage Tanks, • Laser Land Levelers, 	○	●	-	-
2	Certification of operational documents of the project, <ul style="list-style-type: none"> • Design, cost estimates, completion reports of watercourses, • Design, cost estimates, completion reports of water storage tanks, 	○	○	●	-
3	Undertake baseline, midline and endline surveys of the project activities/interventions in all the project areas.	-	-	-	●
4	Develop monitoring strategy, framework and Result Based Monitoring (RBM) indicators,	-	-	-	●
5	Assessing the water saving per annum on watercourse and water storage tanks as well as aggregate due to the project interventions.	-	-	-	●
6	Assessing the improvement in water availability due to provision of conveyance system.	-	-	-	●
7	Assessing the economic benefits to the agriculture in terms of increase in yield, irrigated area, cropping pattern, cropping intensity, farm income and employment in command area of watercourses and water storage tanks.	-	-	-	●
8	Assessing the extent of community mobilization, financial and administrative sustainability of Water Users' Associations and ensuring the maintenance of watercourses, water storage tanks and laser land levelers.	-	-	-	●
9	Economic Impact of project interventions.	-	-	-	●
10	Carryout impact evaluation of the project investment on the economy and stakeholders.	-	-	-	●
11	Preparation of Monthly, Quarterly and Annual Monitoring, Evaluation and Validation Reports of the project activities.	-	-	-	●
12	Develop a website containing information of facilities and services, applications, procedures, watercourses, water storage tanks, and laser levelers database etc. (Maintaining website should be the responsibility of project staff).	-	-	-	●
13	Provide technical support for the development of a custom-designed mobile application (Android) to capture on-site project progress, geo tagged photos; should be synchronized with the central MIS/GIS database and application for instant reporting and feedback to the	-	-	-	●

ANNEX - C: MONITORING LOG-FRAME

Annex-C: Monitoring Log-frame

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
C1: Organization of Water Users' Associations (WUAs)	Reactivation of existing / organization of water users' associations. Ensuring one on each target watercourse. Total WUAs ensured 47,278.	a) Community mobilization at 47,278 watercourses	a) Total 47,278 WUAs reactivated / established/registered	a) Right of way of 47,278 watercourses available b) Skilled and unskilled labour required for watercourse improvement available c) Construction material for civil works of watercourses procured d) Alternate arrangement for water conveyance during construction made e) Watercourse improved	a) Disputes among the water users settled b) Farmers' branched improved c) Water allocation made amicably d) Maintenance of watercourses, WST and laser units done e) Cooperation among farmers increased	a) 47,278 watercourses improved and 15 percentage points conveyance losses reduced b) Litigation among farmers reduced	a) The functioning of the WUAs will be established through sample interview surveys of WUAs members twice during the project period
C2: Watercourses Improvements	Improvement of 47,278 watercourses on	a) Establishment of 47,278 Water users'	a) 47,278 WCAs established; b) 47,278 WCAs	a) Conveyance losses for improved	a) Increase in cropping intensity on	a) Increase in farm income; b) Increase in	a) The water flow measurements will be carried

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
	cost sharing basis: 40% farmers in terms of labour, and 60% funded by project.	associations (WUAs); b) Registration of 47,278 WUAs; c) Improvement and realignment of earthen section of 47,278 watercourses; d) Lining of up to 50% length of 47,278 watercourse either by: <ul style="list-style-type: none"> • Precast concrete parabolic lining (PCPL) segments, or • Rectangular brick masonry, or any other method as approved by the project	registered; c) 47,278 watercourses improved and lined;	watercourses decreased by about 15 percentage points. b) 1.654 million households benefited from the activity; c) 11.347 million acres served with improved watercourses	improved watercourses by 5-24%; b) Increase in crop yields. c) Increase in irrigated area d) Increase in agriculture output per unit of water by about 37%	employment for farm labour; c) Reduction in poverty; d) Enhanced food security for the country.	out at before and after watercourse improvement on 2-5% sample basis; b) Agriculture survey before and after watercourse improvement on 2-5% sample basis; c) The survey will determine: <ul style="list-style-type: none"> • Cropping pattern before and after the improvement; • Cropping intensities before and after improvement; • Before and after crop yields; • Before and

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
							<p>after employment;</p> <p>d) The difference between before and after will be considered the result of the intervention after netting out the contribution of the growth pattern of the crop sector otherwise.</p>
C3: Construction of Water Storage Tanks (WSTs)	<p>a) Construction of 14,932 water storage tanks</p> <p>b) They agree to contribute 40% of the cost</p> <p>c) Agree to first construct the tank with his/her own</p>	<p>a) 14,932 small farmers mobilized to construct water storage tanks for irrigation</p> <p>b) Agree to first construct the tank with his/her own</p>	<p>a) 14,932 WSTs constructed</p> <p>b) 14,932 WSTs operated and maintained</p>	<p>a) Water which was otherwise largely going to be wasted is saved</p> <p>b) Irrigation provided at critical stages of the crops</p> <p>c) Flexibility achieved for irrigation</p>	<p>a) More area irrigated</p> <p>b) Increased cropping intensities</p>	<p>a) Increased crop yields</p> <p>b) Increased total crop output quantum</p> <p>c) Increased farm income</p> <p>d) Increased farm employment</p>	<p>a) 2-5% sample of WSTs will be surveyed</p> <p>b) A data collection form will be designed to measure water saving due to WSTs</p> <p>c) The forms used for baseline and impact surveys in case of</p>

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
		funds and then received subsidy at 40% on issuance of FCR					watercourses will also be used for WSTs d) Same data analysis will be carried out here as in case of watercourses.
C4: Provision of Land Leveling Units	a) Provision of 11,610 laser land leveling units to farmers and service providers on a cost sharing basis: 50% by farmer / service provider and 50% by the project.	a) 11,610 laser units provided to farmers / service providers; b) Farmers trained in using the units.	a) 11,610 farmers / service providers received PLL units; b) Farmers / service providers received training in using the units.	a) Land levelled on Farmers' / service providers' farms; b) Land levelled on fellow farmers on rent; c) Total 3.483million acres levelled by 11,610 units.	a) Water application efficiency increased at field level; b) Even germination of seed. c) Field application losses reduced by 10 percentage points d) Water productivity increased by 24%	e) Increased area under irrigated crops; f) Enhanced crop yields g) Increased farm income	a) The land levelling is expected to save irrigation water and result in better and even germination of seeds which can enhance crop yields. The crop yields thus affected will be reflected in agriculture sample surveys. b) 2-4% sample units will be visited by ME&IE Consultants

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
							<p>teams after one years of delivery</p> <p>c) The unit will be verified</p> <p>d) Area treated during the year will be collected</p> <p>e) Farmers' feedback collected on quality of the unit, quality of the after-sale service, etc.</p>

ANNEX - D: DELIVERABLES/REPORTING REQUIREMENTS

Deliverables/Reporting Requirements

Sr. No.	Document	Copies	Due
1	Draft Inception Report	8	45 days after the effectiveness of the Consulting services Agreement.
2	Final Inception Report	15	One week after the issuance of comments by the Client on Draft Inception Report
3	Monthly Monitoring Report	10	10 th of the following month
4	Baseline Survey Report	10	4 months after start of the assignment
5	Midline Survey Report	10	In the middle of the assignment
6	Endline Survey Report	10	At the end of the endline survey
7	Quarterly Monitoring and Evaluation Report	10	10 th of the first month of following quarter
8	Annual Monitoring and Evaluation Report	10	During first month of following year
9	Draft Assignment Completion Report	5	At completion of physical works / activities
10	Final Completion Report	25	At completion of works as well as financial transactions
11	Special Reports	10	As and when required

ANNEX - E: DRAFT FORMAT FOR CASE STUDY ON GENDER COMPONENT

FORMAT FOR A CASE STUDY ON GENDER AND SOCIAL IMPACT

CASE STUDY <Template (Draft)>

PROFILE:

W.C./WST:

Division:

District:

Tehsil:

(Picture of Community)

BASE LINE SITUATIONS:

AWARENESS

PGS (FIRST VISIT)

PGS (2ND VISIT)

IMPACT ASSESSMENT:

PGS (3RD VISIT)

FINAL CASE STUDY

RESULTS:

- ❖ Livelihood
 -
 -
- ❖ Financial agriculture
 -
 -
- ❖ Food Productivity/Agriculture richness
 -
 -
- ❖ Women empowers
 -
 -
- ❖ Overall Impact
 -
 -
- ❖ Sustainable development goals
 -
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