



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

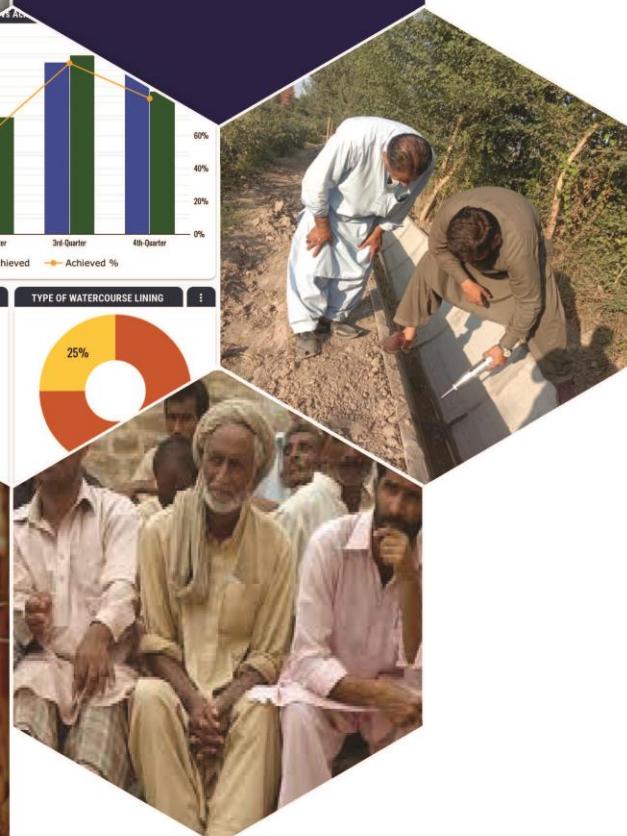
NATIONAL PROGRAM FOR IMPROVEMENT OF WATERCOURSES IN PAKISTAN PHASE-II: (NPIWC-II)

MONITORING, EVALUATION
AND IMPACT EVALUATION
CONSULTANTS



MONTHLY MONITORING REPORT

JUNE 2021





**Federal Project Management Unit (FPMU)
Federal Water Management Cell (FWMC)
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 JUNE 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
PPMU	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 June 2021" is comprising 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 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 Sixth Monthly Monitoring Report (MMR) covers the period from June 01, 2021 to June 30, 2021.

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

- Meetings and trainings
- Training of Measurement of water flow-Pygmy current meter
- Baseline survey field visit
- Data entry, Data cleaning, Data processing & data Analysis
- Regular Monitoring
- Development of web site of NPIWC-II
- Data collection of interventions in MIS/GIS database
- Meeting of DTLs with respective DTL of NWMC
- Deliverables

Chapter-5 of this report covers the details of ME&IE Consultants activities initiated during the Second Quarter 2021 (April 1, 2021 to June 30, 2021) are listed below.

- Pre- Field Activities
- 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 April to 30th June 2021)

No.	Activities Planned for the Reporting Quarter	Status
1	Pre-field Activities:	
1.1	Functional Field Offices in Punjab, KP & Balochistan Zones	Complied
2	Field Activities:	
2.1	Data collection from OFWM Department/NWMC for Baseline survey/regular monitoring	Complied
2.2	Training Session of field staff and Key staff on Survey Manual of MTs and Android Base System	Complied
2.3	Training of Measurement of water flow-Pygmy current meter	Complied
2.4	Determinants of Sample size at District/Tehsil levels with the assistance from ADA/DDA (OFWM)	Complied
2.5	Baseline survey field visit	Complied
2.6	Data entry, Data cleaning, Data processing & data Analysis	Under completion
2.7	Regular Monitoring	Complied
3	ICT Assignment:	
3.1	Development of web site of NPIWC-II	Complied/Refinement under process
3.2	Development of Android based Mobile Application	Complied
3.3	Testing of Monitoring tools on Android based system	Complied
3.4	Data collection of interventions in MIS/GIS database	Complied
3.5	Designing of dashboard of Project Interventions	Complied/Implementation under process
4	Coordination	
4.1	Meeting of DTLs with respective DTL of NWMC	Meetings conducted on regular basis
5	Deliverables:	
5.1	Monthly Monitoring Report (MMR)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>4th MMR (APR 2021)</p> <p>5th MMR (MAY 2021)</p> <p>6th MMR (JUN 2021)</p> </div> <div style="text-align: center;"> <p>Submitted</p> <p>Submitted</p> <p>To be submitted on Stipulated time</p> </div> </div>
5.2	Quarterly Monitoring & Evaluation Report (QM&ER)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1st QM&ER (JAN-MAR 2021)</p> <p>2nd QM&ER (APR-JUN 2021)</p> </div> <div style="text-align: center;"> <p>Submitted</p> <p>To be submitted on Stipulated time</p> </div> </div>
5.3	Baseline Survey Report	Under completion

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. DGA OFWM KP 4. DGA OFWM Balochistan 5. Director Irrigation and Small Dams, AJ&K 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 (CSRD) 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 (PDO) 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 in 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 for 5 years starting from year 2019-20 to 2023-24. The targets for each province/Zone (excluding Sindh) are given below Figure-1.1, 1.2.

Project Targets:

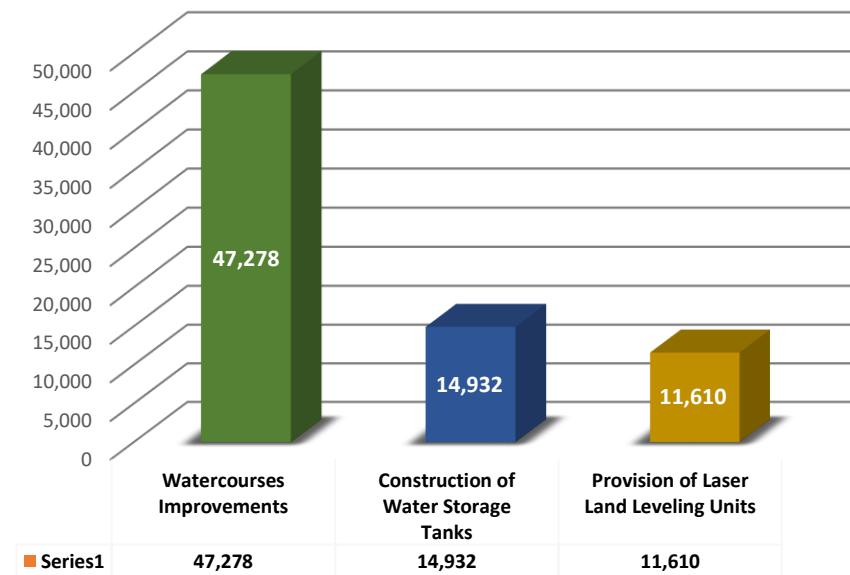


Figure-1.1: Pakistan Targets

Zonal Targets:

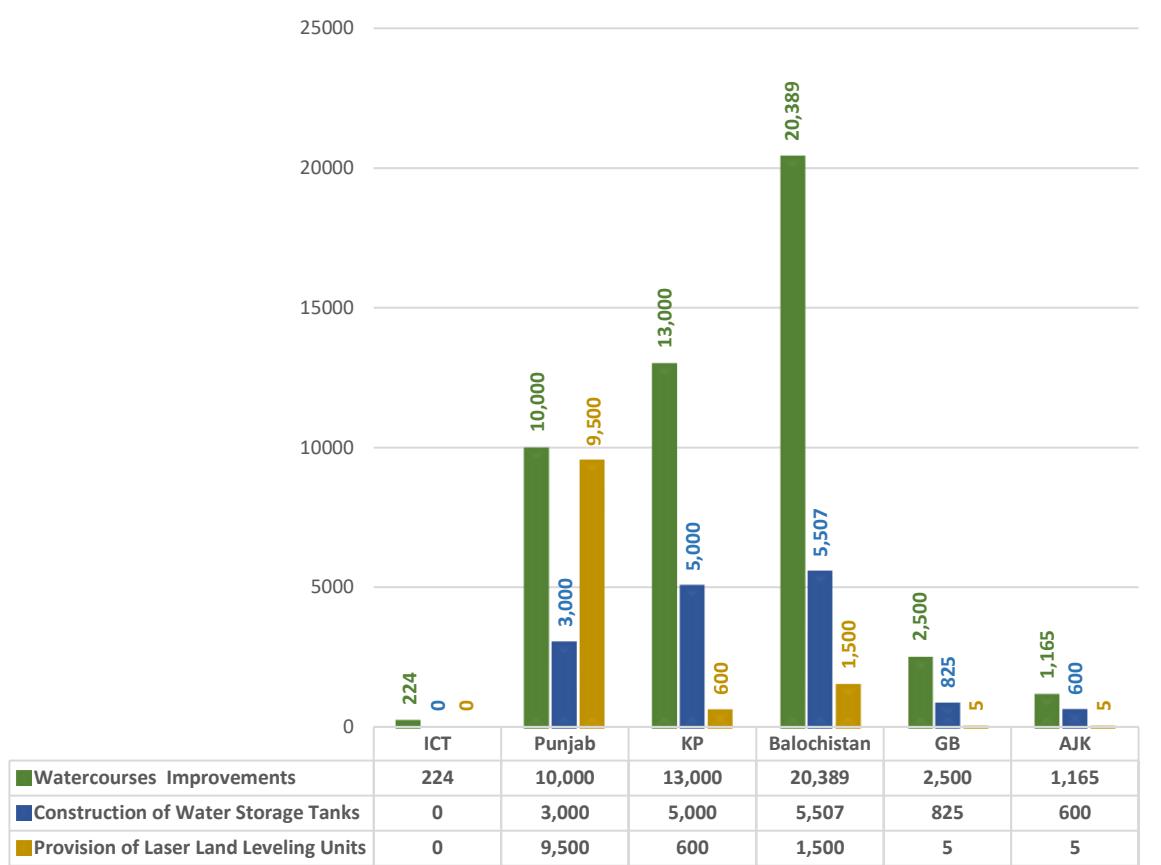


Figure-1.2: Zonal Targets

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 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 end line 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),
- xii) 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-dation/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 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 levelled: <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 Expert	<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 Project costs and benefits will be compared in economic and

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
			<p>financial terms to carry out economic and financial analysis.</p> <ul style="list-style-type: none"> 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 carrying 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 Sixth Monthly Monitoring Report (MMR) covers the period from June 01, 2021 to June 30, 2021.

The Sixth Monthly Monitoring Report (MMR) has 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., Baseline Survey field activities. This report also describes all activities to be carried out as per quarterly work plan.

CHAPTER 4: ACTIVITIES DURING THE REPORTING PERIOD

Monthly Monitoring Report (MMR) provides details of all activities of ME&IE Consultants carried out during the reporting month as per TORs of the assignment and their completion within stipulated time frame.

All the Zonal offices of the ME&IE Consultants remained engaged in different projects activities respective to their zonal office requirements. Zonal office prepared the methodology for the baseline survey and conducted trainings of the field staff for conduction of Baseline survey of the targeted areas of the project.

4.1 SUBMISSION OF FIFTH MONTHLY MONITORING REPORT

The Fifth Monthly Monitoring Report, May 01, 2021 to May 31, 2021 was submitted to the Client within stipulated time on June 10, 2021. All the zonal offices submitted their respective monthly monitoring reports to Team Leader describing the activities carried out during the reporting period. The Monthly Monitoring Report describes the achievement of the consultants during the period under discussions and also gave a tentative work plan for the Third Quarter 2021 (July 1, 2021 to September 30, 2021).

4.2 PRE-FIELD ACTIVITIES

4.2.1 Meetings of ME&IE Consultants – National Office & ICT Zone

Date	4 th June 2021
Venue	National Office, Islamabad
Participants	
i.	Mr. Iqbal Chohan, Director WM, Rawalpindi
ii.	Dr. Sarwar Zahid, DTL National Office
iii.	Mr. Ebadat-ur-Rehman, ME&IE Consultants
Meeting Agenda/Points discussed:	
Director Water Management of Rawalpindi Division Mr. Iqbal Chohan was invited to National Office and he paid a visit for this meeting. Following discussions were held in the meeting:	
i.	DTL Dr. Sarwar Zahid shared schedule of ME&IE Consultants' schedule of baseline survey field visits with Director WM and asked for required data of water storage tanks being constructed in financial year 2020-21.

- ii. Director WM Mr. Iqbal explained the technical aspects of WSTs being constructed in Rawalpindi Division under NPIWC-II.
- iii. Mr. Iqbal assured full support and cooperation of OFWM Team, Rawalpindi to ME&IE Consultants for Baseline Survey.

After the meeting, Mr. Iqbal shared the details of water storage tanks via email and Field Team of ICT unit selected the required sample through randomization.



Figure-4.1: Meeting with Director WM, Rawalpindi at National Office

Date	4 th June 2021
Venue	National Office, Islamabad
Participants	
i.	Dr. Sarwar Zahid, DTL National Office
ii.	Mr. Ebadat-ur-Rehman, ME&IE Consultants
iii.	Miss Syeda Sana Gull, ME&IE Officer
ii.	Miss Hafiza Maryam Iqbal, ME&IE Officer

Meeting Agenda: MTs

A mock exercise of field interview was conducted for the practice and training of Field Team of ICT & AJK. Team members cleared their points regarding project and the monitoring & evaluation process. This practice exercise was for the better command of field team on monitoring tools.



Figure-4.2: Field Team Zonal Office ICT / AJK in Practice of Field Survey at National Office

Date	7 th June 2021
Venue	National Office, Islamabad
Participants	
i. Dr. Sarwar Zahid, DTL National Office ii. Mr. Ebadat-ur-Rehman, ME&IE Consultants iii. Miss Syeda Sana Gull, ME&IE Officer iv. Miss Hafiza Maryam Iqbal, ME&IE Officer	

Meeting Agenda/Points discussed:

Planning for Baseline Survey by ICT Zonal office Field Survey Team.

Dy. Team Leader, Dr. Sarwar Zahid and Field Team of ICT & AJK had an extensive meeting regarding baseline surveys. Following were the main discussions of this meeting:

- i. NPIWC-II & Role of ME&IE Consultants
- ii. Sampling Methodology for baseline surveys.
- iii. Schedule of the baseline visits.
- iv. Monitoring tools and android application.



Figure-4.3: ICT & AJK Field Team in discussion on Scheduled of Baseline Survey visits.

asked for required data of watercourses being constructed in the financial year 2020-21.
 iii. Mr. Mubeen Ahmad explained the technical aspects of WCs being constructed in ICT under NPIWC-II and assured us the full support and cooperation of OFWM Team, ICT.



Figure-4.4: Meeting with Mr. Mubeen Ahmad, Sub-Engineer, OFWM ICT.

Date	11 th June 2021
Venue	ICT Agriculture Complex
Participants	
i. Mr. Waqar Anwar, Director (AES), ICT ii. Mr. Mubeen Ahmad, Field Engineer iii. Dr. Sarwar Zahid, DTL National Office iv. Mr. Ebadat-ur-Rehman, ME&IE Consultants	

Meeting Agenda/Points discussed:

Meeting of ME&IE Consultants and OFWM Staff, ICT was held at ICT Agricultural Complex. In this meeting, DTL Dr. Sarwar Zahid & Mr. Ebadat-ur-Rehman shared their observations of Pre-Testing visit at Phulgran Village and inquired about the system of WUA in Islamabad Capital Territory. The discussion in the meeting was as follow:

- i. OFWM staff explained the present situation of NPIWC-II in ICT. The system of WUA is unknown in ICT.
- ii. Topography & source of water in Islamabad.
- iii. 20 out of 45 watercourses (pipelines) has been installed in ICT in financial year 2020-21.

DTL Dr. Sarwar Zahid asked for an official document based on which OFWM negated the Umbrella PC-1 i.e. formation of WUA. The response on same is still awaited.

Date	8 th June 2021
Venue	National Office, Islamabad
Participants	
i. Mr. Mubeen Ahmad, Field Engineer (OFWM) ii. Dr. Sarwar Zahid, DTL National Office iii. Mr. Ebadat-ur-Rehman, ME&IE Consultants	

Meeting Agenda/Points discussed:

Discussion on Baseline Survey Program
Meeting was conducted with the Field Engineer (OFWM), Mr. Mubeen Ahmad in the National Office of ME&IE Consultants. Following were the discussions in the meeting.

- i. Dr. Sarwar Zahid, DTL National Office briefed the role of ME&IE Consultants and upcoming baseline surveys.
- ii. DTL Dr. Sarwar Zahid shared the schedule of ME&IE Consultants' baseline field visits and



Figure-4.5: Meeting of ME&IE Consultants with Director (AES), ICT



Figure-4.6: Presentation on Progress of ME&IE Consultants



Figure-4.7: Progress Review Meeting

Date	June 14, 2021
Venue	Director General (DG) Agriculture (OFWM) Office 21 Davis Road Lahore
Participants	
i.	Malik Muhammad Akram , Director General (OFWM) Punjab
ii.	Hafiz Qasir Yaseen-Deputy Director HQ (OFWM)/Project Coordinator
iii.	Mr. Tahir Mehmood-Assistant Director (OFWM) (Technical)
iv.	Mr. Muhammad Tariq Khan Deputy Team Leader NWM Consultant Lahore
v.	Dr. Muhammad Abdul Quddus - Team Leader, ME&IE Consultants
vi.	Mr. Muhammad Yousaf Bhatti - Deputy Team Leader, ME&IE Consultants
vii.	Mr. Awais Saqi - Field Team In charge, ME&IE Consultants
viii.	Mr. Shumail Mehmood - PMIS Data Expert, ME&IE Consultants
ix.	Mr. Irfan Aziz - Coordinator ME&IE Consultants
Meeting Agenda: Progress Review	
Presentation on Progress of implementation of Project and Deployment of Staff Status by Mr. Muhammad Tariq Khan Deputy Team Leader NWM Consultant Lahore.	
Presentation on Progress of Baseline Survey and Deployment of Staff Status by Mr. Muhammad Yousaf Bhatti Deputy Team Leader ME & IE Consultant Lahore.	
D.G Agriculture asked DTL ME & IE Consultant Punjab Zone Lahore to Submit the details Regarding Baseline Survey and Field Team Mobilization to the Coordinator.	

Date	11-12 June 2021
Venue	Punjab Zonal Office Lahore
Participants	
i.	Mr. Muhammad Yousaf Bhatti (DTL Punjab)
ii.	Field Incharges (3 No.)
iii.	Field Enumerators (6 No.)

Meeting Agenda: Progress Review
Two Days training was organized by the field teams under the supervision of Mr. Muhammad Yousaf Bhatti (DTL Punjab) from 11-06-2021 to 12-06-2021. All field staff were 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 during field visit.



Figure-4.8: Mock Exercise between Two Field Members

4.2.3 Meetings of ME&IE Consultants - KP Zone

Date	8 th June 2021
Venue	On Farm Water Management
Participants	
i. Dr. Rabnawaz, Project Director NPIWC-II ii. Dr. Abdul Quddus, TL iii. Mr. Rizwan Saleem ICT Specialist iv. Muhammad Bilal ME&IE Consultants	
Meeting Agenda: Dashboard	
The meeting started at 12 pm at his office on 8 th June 2021. During the meeting, it was shared with him that what will be the mode of data from ME&IE and how it will be reflected at Dash Board.	
He advised that it would be good to load the KP data and come with presentation of KP only, so he may further discuss things for improvement. It was agreed with him and discussed about the indicators, which will be reflected on Dashboard.	
He further advised that ME&IE may coordinate themselves with the District Officers for collection of TS data and other information whenever required.	

Date	8 th June 2021
Venue	Project Management Unit
Participants	
i. Dr. Abdul Quddus, TL ii. Mr. Behram Jan, PMU Coordinator iii. Mr. Asad, PMU Dy Coordinator iv. Mr. Saeed Dy Coordinator v. Mr. Rizwan Saleem ICT Specialist vi. Muhammad Bilal ME&IE Consultants	
Meeting Agenda: General Project discussion	
It was told by Dr. Rabnawaz that one of the monitoring office name Project Management Unit (PMU) has asked them to contact ME&IE focal person and they may come to PMU for few discussions.	
ME&IE team after closing meeting with Dr. Rabnawaz, left for PMU office where they met with Mr. Bahram Jan (Coordinator), Mr. Asad and Saeed Dy Coordinators.	
It was told by Mr. Bahram Jan that they are monitoring field activities of different project from Govt. of KP and during their field visit it was found that ME&IE team was not available at field level. It was cleared to him that ME&IE team will start their	

visit shortly because team is busy in finalizing of its monitoring tools on android and as it will be permitted by NPC, teams will depart for field activities.

He further shared a letter with Team Lead, regarding the Joint Review Meeting (JRM), which was planned for 10th June and asked that a representative may participate in the said meeting.

It was agreed by Team Lead that they will participate and share their updates.

Date	10 th May 2021
Venue	Project Monitoring Unit
Participants	
i. Secretary Agricultural ii. Dr. Abdul Quddus, TL (ME&IE-NPIWC-II) iii. Dr. Usman TL (ME&IE-WC-KP) iv. Muhammad Bilal ME&IE Consultants v. PMU Staff vi. OFWM DG vii. Soil Conservation DG viii. NESPAK Representative ix. AGES Representative	
Meeting Agenda: Joint Review Meeting	

A Joint Review meeting (JRM) was called by Project Monitoring Unit (PMU) KP for sharing their updated monitoring progress with Secretary Food KP and line departments. During the meeting, presentations were made from PMU and ME&IE regarding the projects.

The following has been noted accordingly.

After arrival of Secretary, Mr. Behram Jan (PMU Coordinator) started his presentation for the last month and year. He presented his monitoring report for all the project of KP being running by different stakeholders. He shared different shortcoming of the department in his presentations.

During his discussion he told that they feel that Third party monitoring may start their activities earliest towards monitoring and impact evaluation. It was expressed by ME&IE that they will cover all the targets with time and as they have to cover 2% data for baseline and 5% for monitoring, so it will not be a problem. However, it was briefed that Govt wish to check the impact

of their interventions year wise and it would be great to start the activities timely.

He told project consultants that they have performed very less number of visits for verification of project activities; in response their representative told that they don't have appropriate number of vehicles & offices, thus it is a problem for them to pay complete verifications. Secondly they told that they do not get continuous availability of OFWM staff for field visit, here DG OFWM assured him that he will order to his office to nominate one dedicated person who will work only with Project Consultant and OFWM will support them completely.

Mr. Behram Jan told that at some places project design and actual structures were mismatching and any change in structure was not submitted for approval. He asked Third party to keep care for such schemes.

He told that at few places they faced problem in recognizing the watercourses structures. They asked OFWM to stamp their name for all the structures being installed under NPIWC-II. Here the Secretary advised the project consultants that they may not verify schemes where structures were not stamped.

Secretary advised DG OFWM to control the over construction of project target being mentioned in PC-1.

During different discussion and presentation of ME&IE the following instructions/suggestion were given by Secretary Agriculture:

1. Govt. is interesting in water saving as well crop productivity and intensity. ME&IE may also calculate that how much extra land has come under cultivation. It was told to him that ME&IE already covering this requirement in their data.
2. He asked ME&IE to hire appropriate Agriculture Agronomist for this calculation, where it was told to him that ME&IE has already hired Agronomist for such purpose.
3. ME&IE may collect the data of farmers' spending on their life style e.g. Education, health etc. It was assured to him that this data is already part of the baseline.
4. It would be great to provide training to OFWM staff for their record keeping and making it digital.

5. A provincial dash board is already in place and it would be better that ME&IE may put their data in that dash board instead of making separate dash board. It was cleared to him that as this funding is at National level, so ME&IE will first establish their National level system and later it could be discussed for provincial system.

6. ME&IE must incorporate Livestock and fisheries relevant questions in their survey. It was told by TL that ME&IE have included these questions in their baseline questionnaire.

7. ME&IE should report the quality of Yards in their environment question, where it was told by TL that it is in their mandate and they will do it.



Figure-4.9: Joint Review Meeting at PMU

Date	14/06/2021
Venue	OFWM office Peshawar
Participants	
i)	Dr. Rab Nawaz DG OFWM KP
ii)	ME&IE Consultants team: Mr. Muhammad Bilal, Mumtaz Ullah, Inam Ullah, Mhamood Ul Hassan
Meeting Agenda: Baseline Survey	
A coordination meeting with DG Of OFWM Dr. Rab Nawaz took place on 14 th June at his office Peshawar, where Field Team Incharges of all three KP Zones were introduced to him. A baseline survey plan was shared with him and support was requested at field level in terms of provision of human resource for facilitating the ME&IE at field level survey.	
Dr. Rab Nawaz told that now a days OFWM staff is busy in their closing and will visit to AG Office for submission of annual expenses during 15 th to 20 th June, however, on request, he told that his team will be available from 16 June.	

**4.2.4 Meetings of ME&IE Consultants -
Balochistan Zone**

Date	June 02, 2021
Venue	Zoom meeting.
Participants	
i.	Dr. Muhammad Abdul Quddus Team Leader
ii.	Muhammad Yousaf Bhatti Dy. Team Leader, Lahore
iii.	Rizwan Ahmad Dy. Team Leader, Quetta
iv.	Mr. Bilal, ME&IE Consultants
Meeting Agenda/Points discussed:	
A meeting was held by the Team Leader on Zoom and following points were discussed:	
I.	Discussed MMR for the month of May 2021
II.	Planning/implementation of Baseline Survey.
III.	Discuss the methodology of baseline
IV.	All DTL asked to prepare the tentative work plan for baseline field activities.
V.	The TL requested to conduct a joint training of all field staff on Baseline MTs and measuring tools.

Date	June 08, 2021
Venue	Office of Deputy Director, Naseerabad, DMJ
Participants	
I.	Mr. Anwar Aadil, Deputy Director, Agriculture Department, Naseerabad
II.	Mr. Tariq, M&E Expert I/C, Team – 1, Naseerabad Zone.
Meeting Agenda/Points discussed:	
A meeting was held by the Team Leader on Zoom and following points were discussed	
I.	It was introductory meeting -
II.	Discussed the baseline survey activities
III.	Shared planning / role of M&E Consultants with DD.
IV.	The DD extended his support for M&E Consultants at all levels.



**Figure-4.10: Meeting with farmers at site WST
Fareed Umrani Village Ameer Bukhsh Umrani UC
Sikandarabad District Naseerabad**

Date	June 11, 2021
Venue	Office of ME&IE Consultants, Cant, Quetta.

Participants
I. Mr. Khalid Mehmood, Deputy Team Leader, Project Consultants, NPIWC-II, NESPAK
II. Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, G3EC
III. Mr. Manzoor Kasi, M&E Expert, I/C, M&E Consultants, G3EC.

Meeting Agenda: Coordination meeting with NWMC
The DTL, Project Consultants visited the ME&IE Consultants Office at Cant, Quetta. The DTL, M&E Consultants showed him different sections of M&E Office. He also met with M&E Staff. The both DTL discussed the all-ongoing project activities and shared the updated project progress.

Date	June 16, 2021
Venue	Office of Deputy Director, Naseerabad, DMJ

Participants
I. Mr. Ali Mardan, Site Engineer, OFWM, DMJ
II. Mr. Tariq, M&E Expert, M&E Consultants,
III. Mr. Saleem Abro, M&E Officer, M&E Consultants
IV. Mr. Hamza Qureshi, M&E Officer, M&E Consultants.

Meeting Agenda/Points discussed:
A meeting was held by the M&E Consultants, Team-1 with OFWM Staff and discussed the following points.
I. It was introductory meeting -
II. Discussed the baseline survey activities
III. Shared visit plan with OFWM Staff.
IV. The OFWM staff assured their full support at all field activities.



Figure-4.11: Meeting of ME&IE Consultants (Team-1) with Mr. Ali Mardan, Site Engineer, OFWM, D M Jamali at office OFWM Office, Naseerabad.

Date	June 16, 2021
Venue	Office of OFWM, Quetta at Sariab Road, Quetta.
Participants	
I.	Mr. Abdul Ghaffar Jaffar, Agriculture Officer, OFWM
II.	Mr. Khuda Dost, M&E Officer, M&E Consultants
III.	Mr. Rafiullah, M&E Officer, M&E Consultants
Meeting Agenda/Points discussed:	
A meeting was held by the M&E Consultants, Team-3 with OFWM Staff and discussed the following points.	
I.	The M&E Consultants discussed the baseline survey activities
II.	Shared visit plan with OFWM Staff district Quetta.
III.	The OFWM staff assured their full support at all field activities.
	
Figure-4.12: Meeting of ME&IE Consultants (Team-3) with Mr. Abdul Ghaffar Jaffar, Agriculture Officer, OFWM at Quetta Office,	

Date	June 18, 2021
Venue	Office of Deputy Director, OFWM, Quetta at Sariab Road, Quetta.
Participants	
I.	Mr. Noor Ahmed, Deputy Director, OFWM, Quetta.
II.	Mr. Rafiullah, M&E Officer, M&E Consultants
Meeting Agenda/Points discussed:	
A meeting was held by the M&E Consultants, Team-3 with OFWM Staff and discussed the following points.	
I.	The M&E Consultants discussed the baseline survey activities
II.	Shared visit plan with OFWM Staff district Quetta.
III.	The Deputy Director assigned his staff to support M&E Consultants during Baseline Field Activities.



Figure-4.13: Meeting of Deputy Director (Noor Ahmed) at his office, Quetta

Date	June 21, 2021
Venue	Office of M&E Deputy Director, OFWM, Kalat
Participants	
I.	Mr. Sikandar Shah, Deputy Director, OFWM, Kalat
II.	Mr. Manzoor Kasi, FTI/ M&E Expert
III.	Mr. Rafiullah, M&E Officer
IV.	Mr. Khuda Dost, M&E Officer
Meeting Agenda/Points discussed:	
A meeting was held with Deputy Director, OFWM, Kalat in his office at Kalat. The M&E Consultants met with him on agenda mentioned below:	
I.	The M&E Expert, I/C and his team briefed to DD about Baseline Survey Field Activities
II.	The sites issued discussed in the meeting.
III.	The Deputy Director deputed his staff to facilitate the M&E Consultants during field visits.
	
Figure-4.14: Meeting with Mr. Sikandar Shah, DD in his office at District Kalat.	

Date	June 23, 2021
Venue	Office of M&E Consultants at Cant, Quetta
Participants	
I.	Mr. Rizwan Ahmed, DTL, ME&IE Consultants
II.	Mr. Naseeb Jan, FTI/ M&E Expert
III.	Mr. Manzoor Kasi, FTI/ M&E Expert
IV.	Mr. Tariq, Field Team In charge/M&E Expert
V.	Mr. Qaisar Tareen, M&E Officer

- VI. Mr. Rafiullah, M&E Officer
- VII. Mr. Khuda Dost, M&E Officer
- VIII. Mr. Saleem Abro, M&E Officer
- IX. Mr. Hamza Qureshi, M&E Officer

Meeting Agenda/Points discussed:

An internal meeting was held by the DTL, Balochistan with all field teams after the completion of first baseline survey. Following points were discussed.

- I. The DTL appreciated to all field team members on achieved the targets 100% within stipulated timelines successfully.
- II. The DTL asked to M&E Expert to submit detailed Baseline Survey Report by 25th June 2021.
- III. The field team shared field observations with DTL
- IV. All field teams appreciate the OFWM staff cooperation and support during baseline field activities in all districts.



Figure-4.15: View of internal official meeting after completion of Baseline Survey at Zonal Office Quetta.



Figure-4.16: View of internal official meeting after completion of Baseline Survey at Zonal Office Quetta.

4.2.5 Detail of Collective Meetings of ME&IE Consultants

Date	June 11, 2021
Venue	Zoom meeting from G3EC Head office Lahore
Participants	
i.	Ch. Saif Ul Ejaz, Authorized Representative G3JV
ii.	Dr. Abdul Quddus Malik, Team Leader
iii.	All DTLs & Field Incharges of 4 Zones
iv.	All Core Team Members
Meeting Agenda: Baseline survey planning	
The meeting was conducted by the Authorized Representative G3EC Lead JV firm with Core team of ME&IE Consultants from his good office located at Head Office G3 Engineering Consultants (Pvt.) Ltd on Zoom to finalize the planning strategies of field surveys regarding baseline survey. Following points were discussed in detail:	
<ul style="list-style-type: none"> • Data Accuracy • Coordination • Time Management 	
The Chair asked participants to fully focus on their current assignment with devotion.	

Date	June 30, 2021
Venue	Office of Deputy Director, Zhob.
Participants	
I.	Mr. Ali Muhammad Durrani, Deputy Director, OFWM, Zhob
II.	Mr. Naseeb Jan, Field Team In charge/ M&E Expert
Meeting Agenda/Points discussed:	
An internal meeting was held by the M&E Expert, Naseeb Jan with Mr. Ali Murad Durrani, DD, Zhob in his good office at Zhob. Following points were discussed.	
I.	The M&E Expert shared the up to-date M&E activities with DD.
II.	The DD briefed about the M&E role in NPIWC-II.
III.	The upcoming field visits regarding regular monitoring shared with DD.
IV.	The DD extend his support for M&E Consultants at all levels.

Date	June 28, 2021
Venue	Zoom meeting from G3EC Head office Lahore
Participants	
i.	Ch. Saif Ul Ejaz, Authorized Representative G3JV
ii.	Dr. Abdul Quddus Malik, Team Leader
iii.	All DTLs & Field Incharges of 4 Zones
iv.	All Core Team Members
Meeting Agenda: Project Progress Review	
The progress review meeting was conducted by the Authorized Representative G3EC Lead JV firm with Core team of ME&IE Consultants from his	

good office located at Head Office G3 Engineering Consultants (Pvt.) Ltd on Zoom to review the performance of field teams in Baseline survey. The chair was briefed in detail about the working of field teams in baseline survey. The Chair showed his satisfaction and asked DTLs & Field Team Incharges to carry on regular field monitoring.

4.3 FIELD ACTIVITIES

4.3.1 Training of Pygmy Current Meter

An online training session via ZOOM was carried out on 15th June 2021 by the ICT team at Lahore on the use of PYGMY meter at watercourse for all ME&IE field teams. The training was continued more than 2 hours and teams were given details regarding utilization of PYGMY meter.

According to training, PYGMY meter has 2 main parts, one is its rotary fan which moves with water and produces sound. While second thing is its head phone. A person who wore head phone, holds a stop watch and run it for 40 seconds. During these 40 seconds the operator listen and count the rotation of the rotary fan and record the reading. This reading will be further calculated in formulas and we receive answer in flow Liter/second.

It was further shared that the 1st Reading must be taken from head of the watercourse and the PYGMY meter may be kept 10 meters away from watercourse outlet (Mogha). If the area of the watercourse is less than 3 square feet, then a total of 3-3 readings will be collected from Head, mid and Tail section (total 9 readings). While if its area lies between 3 to 4 square feet than 6 readings will be collected at each Head, mid and tail section. At increase of each square feet, an addition of 3 readings will be carried out at head, mid and tail section.



Figure-4.17: View of Training attended by Zonal Team of KP for PYGMY meter.



Figure-4.18: Training session by Zonal Team, KPK



Figure-4.19: View of Pygmy Meter Training on Zoom

4.3.2 Determinants of Sample size at District / Tehsil levels

Sample size of the Watercourses

For determining the sample size, the total target number of watercourses was served as the population. A sample size of 2 to 3 (%) percent of the total targeted number of watercourses was drawn by using stratified sampling approach. The sample drawn will be divided in proportion of the population amongst provinces/units/divisions and then districts.

In our approach we have used **Cochran's Sample Size Formula**. The Cochran formula allows us to calculate an ideal sample size at a given desired level of precision, desired confidence level, and the estimated proportion of the attribute present in the population. The present project NPIWC-II evaluation purposes, the target number of watercourses constitutes the population. Keeping in view the dispersion of the project interventions, time and financial constraints and human resources for data collection, we have used this formula. Cochran's formula is considered especially appropriate in situations with large populations. A sample of any given size provides more information about a smaller

population than a larger one, so there's a 'correction' through which the number given by Cochran's formula can be reduced if the whole population is relatively small.

The Cochran formula is:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where:

- e is the desired level of precision (i.e., the margin of error)
- p is the (estimated) proportion of the population which has the attribute in question,
- q is 1-p
- Z square is a numerical measurement that describe a value's relationship to the mean of a group of values. A level of reliability.

Modification for the Cochran Formula for Sample size determination is used where Smaller Population exist as in our case.

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where:

- n_0 is Cochran's sample size
- N is the population size, and
- n is the new, adjusted sample size.

Overall Sample Size in Project Area (Pakistan)

The overall sample size of various interventions in the project area has been estimated at 2 % to 3 %. The overall NPIWC-II area comprises three (3) provinces i.e., Punjab, KP, Balochistan, and three units i.e., GB, AJK, ICT. Sample size for each intervention is given in the below Table.

Table-4.1: Target Units & Sample Size of Different Intervention in Project Area

Sr. No	Province / Unit	WC Target Unit (*)	Sample Size	Say Size	WST Target Unit	Sample Size	LLL Target Unit	Sample Size
1	Punjab	10000	264	300 (3%)	3000	60 (2.0%)	9500	300 (3.2%)
2	KP	13000	265	300 (2.7%)	5000	100 (2.0%)	600	20(3.3%)
3	Balochistan	20389	268	450 (2.2%)	5507	110(2.01%)	1500	50(3.3%)
4	GB	2500	75	75 (3.0%)	825	17 (2.1%)	5	2(40.0%)
5	AJK	1165	35	35 (3.0%)	600	13 (2.2%)	5	2(40.0%)
6	ICT	224	15	15 (7%)	-	-	-	-
Total Project Area		47278	922	1175 (2.5%)	14932	300 (2.0%)	16610	374 (2.3%)

Baseline Study of Water Storage Tanks (WSTs)

Sample Size of Water Storage Tank (1st Stage Sampling)

The same formula (Cochran's formula and its modifications) was used in an estimate of the sample size of the total water storage tanks 14,932 in the project area. The sample size becomes 300 (more than 2%).

4.3.3 Baseline Survey Field Visit

The Baseline Survey was carried out from 15th June to 23rd June 2021 in ICT, Punjab, KP & Balochistan zones. The zone wise breakup of WCs & WSTs visited by field teams is shown in figure-4.20.

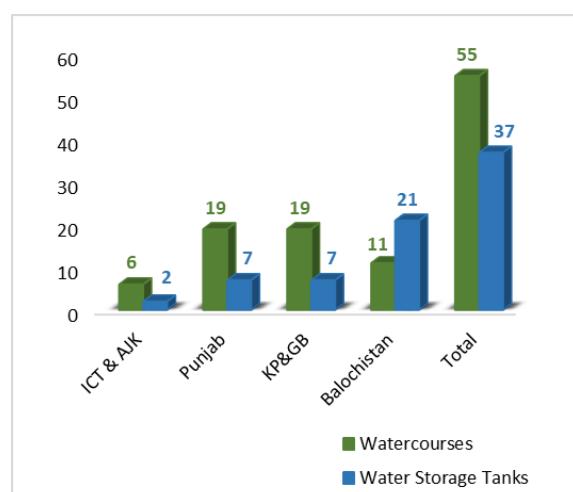


Figure-4.20: Zone wise breakup of WCs & WSTs visited by ME&IE Field Teams

4.5.5.1 Baseline Survey by ICT Zonal Office

Before starting the Baseline Survey ICT Zonal Survey team conducted pretesting survey of two sites in UC Phulgran ICT Zone on 10 June 2021. Detail of this survey visit is explained below.

Pre-testing Visit -1 at Phulgran Village

The owner of this watercourse is Mr. Raja Zaheer Ahmad, who is retired from Punjab Police. His age is 76 with 7 family members. One of his sons is lawyer and other runs a store at F-7 Markaz.

Date of Visit	10 June 2021
Location	Phulgran, ICT
Name of Owner	Mr. Raja Zaheer Ahmad, Land Owner
Length of watercourse	500 meters
Condition of watercourse	It is new watercourse
ME&IE Consultants' team:	
i) Dr. Sarwar Zahid, Deputy Team Leader	
ii) Mr. Ebadat-ur-Rehman, ME&IE Consultants	
iii) Ms. Syeda Sana Gull, Field Team Member	
iv) Ms. Hafiza Maryam Iqbal, Field Team Member	
Client's Representative:	
i) Mr. Muneeb Ahmad, Field Engineer (Department of Water Management, ICT)	



Figure 4.21: Visit of Watercourse in UC Phulgran

ME&IE field team interviewed the owner of watercourse Raja Zaheer Ahmed and gathered data on the questionnaires.

Field team also visited an under construction water storage tank in this village. Mr. Muneeb Ahmad, Field Engineer (WM Department ICT) explained the technical aspects of whole construction process.



Figure 4.22: Under Construction Water storage Tank in UC Phulgran

After site visit ME&IE team visited house of Raja Zaheer Ahmed to conduct a household survey of the respondent at Pulgran house UC Phulgran.



Figure 4.23: Pre-testing field visit (1st) at Raja Zaheer House, Phulgran.

Pre-testing Visit -2 at Phulgran Village

Date of Visit	10 June 2021
Location	Phulgran, ICT
Name of Owner	Mr. Raja Asim, Land Owner
Length of watercourse	500 meters
Condition of watercourse	It is new watercourse

ME&IE Consultants' team:

- i) Dr. Sarwar Zahid, Deputy Team Leader
- ii) Mr. Ebadat-ur-Rehman, ME&IE Consultants
- iii) Ms. Syeda Sana Gull, Field Team Member
- iv) Ms. Hafiza Maryam Iqbal, Field Team Member

Client's Representative:

- ii) Mr. Muneeb Ahmad, Field Engineer (Department of Water Management, ICT)

The 2nd Project visited was from the same village Phulgran. The owner's name was Raja Asim Iftikhar. He is an Advocate (LLB, LLM). His is 37

years old with 6 family members. He has 4 servants. He has two pieces of land, 100 kanal and 50 Kanal. He is cultivating all the land by himself. He has no concept of WUA. According to the intervention they are getting water from a perennial Nalla flowing below the land, bring it in WST. It was told that there is no water logging in the area. It was told that that there were no trees cut even then they are going to plant olive trees in vast area. The farmer has his own agriculture tools. They grow their own wheat and maize for domestic use and for gift. The product depends on rain. Single farmer is owner of the land. The water pump will be of 16 Hp. The length of the pipe (WC) is 575 M.



Figure-4.24: Pre-testing field visit (2nd) at Phulgran House, Phulgran.

questionnaire of baseline survey. The team also visited the water storage tank site. The work will be started in 2-3 days. We also met the engineer of this WST. He and Mr. Yaseen explained the technical aspects of whole construction process. Following is the summary and observations of this visit:

Chak Khushi	
Province/Unit	Punjab
Division	Rawalpindi
District	Chakwal
Tehsil	Kallar Kahar
Village	Chak Khushi
Name of WST	Chak Khushi
Coordinates	N 32.768335, E 72.734366
No. of beneficiaries	1
Culturable Command Area (CCA)	12 Acres
Name of WUA Chairman	M. Rizwan Haider
Total No. of Water Users	6
Cropping Pattern	Maize, Wheat
Type of WST	Concrete
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	0.764 LPS
Main Source of water	Bore
Additional Source of water	Nalla
Size of WST	9.14*9.14*1.52 M
Date of Technical Sanction	02-06-2021
Sanctioned Cost	Rs. 574,784/-
Government's Share	Rs. 300,000/-
Farmer's Share	Rs. 274,784/-

Base Line Visit -1: Rawalpindi

Water Storage Tank No. 1: Rawalpindi

Location: Chak Khushi, Kallar Kahar, Chakwal

Date: 15th June 2021

Survey Time: 12:40 PM to 3:00 PM

Survey Team:

Dr. Sarwar Zahid, Deputy Team Leader
 Mr. Ebadat-ur-Rehman, ME&IE Consultants
 Ms. Syeda Sana Gull, Field Team Member
 Ms. Hafiza Maryam Iqbal, Field Team Member
 Mr. Abdul Sattar, Deputy Director WM Kallar Kahar
 Mr. Yaseen, Supervisor WM, Kallar Kahar
 Mr. Muhammad Afzaal, Supervisor WM, Kallar Kahar

Description of Visit:

Zonal Field Team of ICT & AJK along with Dr. Sarwar Zahid, Deputy Team Leader and Team of Water Management, Kallar Kahar visited a water storage tank at Chak Khushi. The owner of this WST is Mr. Rizwan Haider. The Field Team In-charge and Field Team Members asked him questions as given in the



Figure-4.25: ME&IE Consultants' Baseline visit to Chak Khushi, Kallar Kahar

Water Storage Tank No. 2: Rawalpindi

Location: Manaq Pur, Kallar Kahar, Chakwal

Date: 15th June 2021

Survey Time: 3:30 PM to 5:00 PM

Survey Team:

Dr. Sarwar Zahid, Deputy Team Leader

Mr. Ebadat-ur-Rehman, ME&IE Consultants
 Ms. Syeda Sana Gull, Field Team Member
 Ms. Hafiza Maryam Iqbal, Field Team Member
 Mr. Yaseen, Supervisor WM, Kallar Kahar
 Mr. Muhammad Afzaal, Supervisor WM, Kallar Kahar

Additional Source of water	No
Size of WST	7.62*7.62*1.52 Meters

Description of Visit:

Zonal Field Team of ICT & AJK along with Dr. Sarwar Zahid, Deputy Team Leader and Team of Water Management, Kallar Kahar had its second visit to a water storage tank at Manak Pur. The owner of this WST is Mr. Muhammad Khan, who do business of fruits at Sargodha. The Field Team In-charge and Field Team Members asked him questions as given in the questionnaire of baseline survey. He gave answers to all asked questions very calmly.

As the owner is new, he planned to cultivate olives on the whole area. He does not possess any livestock. There was no increase in labor observed yet.

The team took the measurement of WST bed using the measuring tape and recorded the observations. The construction work is under process. Mr. Yaseen & Mr. Afzaal explained the technical aspects of whole construction process. Following is the summary and observations of this visit:

Manaq Pur	
Province/Unit	Punjab
Division	Rawalpindi
District	Chakwal
Tehsil	Kallar Kahar
Village	Manaq Pur
Name of Water Storage Tank	Manaq Pur
Coordinates	N 32.774440 , E 72.697618
No. of beneficiaries	1
Culturable Command Area (CCA)	8.5 Acres
Name of WUA Chairman	Muhammad Khan
Total Number of Water Users	3
Cropping Pattern	Olive (Not sown yet)
Type of WST	Concrete
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	1.48 LPS
Main Source of water	Bore



Figure-4.26: Field Team questioning land owner for baseline survey

Baseline Visit No. 2: Muzaffarabad

Watercourse No. 1: Muzaffarabad

Location: Mera Dupatta, Muzaffarabad

Date: 17th June 2021

Survey Team:

Mr. Ebadat-ur-Rehman, ME&IE Consultants

Ms. Syeda Sana Gull, Field Team Member

Ms. Hafiza Maryam Iqbal, Field Team Member
 Mr. Ghulam Murtaza Chatha, Field Team In-charge (NESPAK)

Mr. Tariq Malik, Assistant Director

Mr. Faizan Waheed, Sub-Engineer

Description of Visit:

Zonal Field Team of ICT & AJK went to Muzaffarabad for baseline survey of watercourses. Firstly, the Team visited the Department of Irrigation & Small Dams, Muzaffarabad and met Mr. Khawaja Ejaz, Director / Mr. Nadeem, Deputy Director / Mr. Ghulam Murtaza Chatha, Team In-charge NESPAK / Mr. Tariq Malik, Assistant Director / Mr. Faizan Waheed, Sub-Engineer. Team took details of watercourses under survey and collected the required documents and information from them. Then along with the team of OFWM visited a watercourse at Mera Dupatta. Following is the summary and observations of this visit:

Mera Dupatta	
Province/Unit	AJK
Division	Muzaffarabad
District	Muzaffarabad

Tehsil	Muzaffarabad
Village	Mera Dupatta
Name of Watercourse	Mera Dupatta
Coordinates	N 34.209854 , E 73.6495426
No. of beneficiaries	13
Culturable Command Area (CCA)	52.88 Acres
Name of WUA Chairman	Raja Nazeer Khan
Total Number of Water Users	14
Cropping Pattern	Rice, Maize, Wheat, Potatoes
Type of Watercourse	PCC
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	84.95 LPS
Main Source of water	Nalla Nowshera
Additional Source of water	No
Sanctioned Lining Length	701.04 m
Date of Technical Sanction	21-01-2020
Sanctioned Cost	Rs. 2811498/-
Government's Share (80 %)	Rs. 2257198/-
Farmer's Share (20 %)	Rs. 564300/-



Figure-4.27: ME&IE Consultants' Baseline visit to Mera Dupatta, Muzaffarabad



Figure-4.28: Field Team with OFWM & NESPAK staff at Muzaffarabad

Watercourse No. 2: Muzaffarabad

Location: Dhani Mai Sahiba, Muzaffarabad

Date: 21st June 2021

Survey Team:

Mr. Ebadat-ur-Rehman, ME&IE Consultants
Ms. Syeda Sana Gull, Field Team Member
Ms. Hafiza Maryam Iqbal, Field Team Member
Mr. Tariq Malik, Assistant Director
Mr. Faizan Waheed, Sub-Engineer

Description of Visit:

Zonal Field Team of ICT & AJK went to Muzaffarabad for baseline survey of 2nd watercourse under survey. Firstly, the Team visited the Department of Irrigation & Small Dams, Muzaffarabad and met Mr. Basharat Hussain, Project Director / Mr. Tariq Malik, Assistant Director / Mr. Faizan Waheed, Sub-Engineer. Team took details of watercourse under survey and collected the required documents and information from them. Then, along with the team of OFWM visited a watercourse at village Dhani Mai Sahiba. Following is the summary and observations of this visit:

Dhani Mai Sahiba	
Province/Unit	AJK
Division	Muzaffarabad
District	Muzaffarabad
Tehsil	Muzaffarabad
Village	Dhani Mai Sahiba
Name of Watercourse	Dhani Mai Sahiba
Coordinates	N 34.405197 , E 73.4821156
No. of beneficiaries	48
Culturable Command Area (CCA)	23.125 Acres
Name of WUA Chairman	Muhammad Rafiq Abbasi
Total Number of Water Users	48

Cropping Pattern	Krum Saag, Desi Methi, Paalak, Peas
Type of Watercourse	PCPS
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	28.32 LPS
Main Source of water	Nalla
Additional Source of water	No
Sanctioned Lining Length	3587 m
Date of Technical Sanction	19-03-2020
Sanctioned Cost	Rs. 3,819,144/-
Government's Share (80 %)	Rs. 3,055,315/-
Farmer's Share (20 %)	Rs. 763,829/-



Figure-4.29: FTI ME&IE with OFWM Staff at WC Dhani Mai Sahiba



Figure-4.30: ME&IE Consultants' Baseline visit to Dhani Mai Sahiba, Muzaffarabad.

Baseline Visit No. 3: Mirpur

Watercourse No. 1: Mirpur

Location: Lehri-6, Mirpur

Date: 18th June 2021

Survey Team:

Mr. Ebadat-ur-Rehman, ME&IE Consultants
 Ms. Syeda Sana Gull, Field Team Member
 Ms. Hafiza Maryam Iqbal, Field Team Member
 Mr. Javed Qamar, Deputy Director
 Mr. Mohammad Ali, WMO
 Mr. Shahid Mughal, Sub-Engineer

Description of Visit:

Zonal Field Team of ICT & AJK went to Mirpur for baseline survey of watercourses. Firstly, the team visited the Department of Irrigation & Small Dams, Mirpur and met Mr. Javed Qamar, Deputy Director / Mr. Mohammad Ali, WMO / Mr. Shahid Mughal, Sub-Engineer. Team took details of watercourses under survey and collected the required documents and information from them. Then, along with the team of OFWM visited a watercourse at Lehri village. The work at this watercourse has not yet started but their technical sanction is issued. Team took the measurements of precast slabs. Mr. Shahid & Mr. Mohammad Ali explained the technical aspects of whole construction process. Following is the summary and observations of this visit:

LEHRI-6	
Province/Unit	AJK
Division	Mirpur
District	Mirpur
Tehsil	Mirpur
Village	Lehri
Name of Watercourse	Lehri-6
Coordinates	N 33.0921058, E 73.7010088
No. of beneficiaries	3
Culturable Command Area (CCA)	12.5 Acres
Name of WUA Chairman	Allah Ditta
Total Number of Water Users	6
Cropping Pattern	Maize, Wheat, Potatoes
Type of Watercourse	PCPS
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	28.32 LPS
Main Source of water	Tubewell
Additional Source of water	No
Sanctioned Lining Length	266.25 m
Date of Technical Sanction	11-11-2020
Sanctioned Cost	Rs. 344097/-
Government's Share (80 %)	Rs. 275278/-
Farmer's Share (20 %)	Rs. 68819/-



Figure-4.31: ME&IE Consultants' Baseline visit to Lehri, Mirpur



Figure-4.32: Checking the pre-cast slabs at Lehri, Mirpur

Watercourse No. 2: Mirpur

Location: New Sunian, Mirpur

Date: 18th June 2021

Survey Team:

Mr. Ebadat-ur-Rehman, ME&IE Consultants
 Ms. Syeda Sana Gull, Field Team Member
 Ms. Hafiza Maryam Iqbal, Field Team Member
 Mr. Javed Qamar, Deputy Director
 Mr. Mohammad Ali, WMO
 Mr. Shahid Mughal, Sub-Engineer

Description of Visit:

Zonal Field Team of ICT & AJK along with OFWM team went to the 2nd watercourse at New Sunian village in Mirpur. The work at this watercourse has not yet started but their technical sanction is issued. Team took the measurements of precast slabs. Mr. Shahid & Mr. Mohammad Ali explained the technical aspects of whole construction process. Following is the summary and observations of this visit:

NEW SUNIAN	
Province/Unit	AJK
Division	Mirpur
District	Mirpur
Tehsil	Mirpur
Village	New Sunian
Name of Watercourse	New Sunian
Coordinates	N 33.0702398 , E 73.7925129
No. of beneficiaries	3
Culturable Command Area (CCA)	5 Acres
Name of WUA Chairman	Rashid Iqbal
Total Number of Water Users	6
Cropping Pattern	Maize, Wheat, Potatoes, Rice
Type of Watercourse	PCPS
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	28.32 LPS
Main Source of water	Tubewell
Additional Source of water	No
Sanctioned Lining Length	518.75 m
Date of Technical Sanction	31-03-2021
Sanctioned Cost	Rs. 705400/-
Government's Share (80 %)	Rs. 564320/-
Farmer's Share (20 %)	Rs. 141080/-



Figure-4.33: Checking the dimensions of pre-cast slabs at New Sunian, Mirpur.



Figure-4.34: ME&IE Consultants' Baseline visit to New Sunian, Mirpur

	E 73.2025685
No. of beneficiaries	1
Culturable Command Area (CCA)	7.4875 Acres
Name of WUA Chairman	Misbahuddin Chohan
Total Number of Water Users	4
Cropping Pattern	Bitter Gourd, Tomatoes, Peas
Type of Watercourse	PVC 3"
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	8 LPS
Main Source of water	Nalla (River Swaan)
Additional Source of water	No
Sanctioned Lining Length	580 m
Date of Technical Sanction	24-06-2020
Sanctioned Cost	Rs. 955389/-

Baseline Visit No. 4: Islamabad

Watercourse No. 1: ICT

Location: Sihala, ICT

Date: 22nd June 2021

Survey Team:

Mr. Ebadat-ur-Rehman, ME&IE Consultants
 Ms. Syeda Sana Gull, Field Team Member
 Ms. Hafiza Maryam Iqbal, Field Team Member
 Mr. Mubeen Ahmad, Sub-Engineer

Description of Visit:

Zonal Field Team of ICT & AJK went to Sihala village for baseline survey of watercourses. Firstly, the Team visited the Department of Water Management, ICT and met Mr. Mubeen Ahmad, Sub-Engineer for details and data of watercourses under observation. Then, along with the team of OFWM visited a watercourse at Sihala.

The landowner was reluctant in sharing the information with us. He noted seriously the listening of call by one of the team members. The farmer also pointed out lengthy questionnaire.

Following is the summary and observations of this visit:

Sihala	
Province/Unit	ICT
Division	ICT
District	ICT
Tehsil	ICT
Village	Sihala
Name of Watercourse	Sihala
Coordinates	N 33.5625639,



Figure-4.35: ME&IE Consultants' Baseline visit to Sihala, ICT



Figure-4.36: ICT & AJK Field Team asking questions of baseline survey at Sihala, ICT.

Watercourse No. 2: ICT

Location: Tumair, ICT

Date: 23rd June 2021

Survey Team:

Mr. Ebadat-ur-Rehman, ME&IE Consultants
 Ms. Syeda Sana Gull, Field Team Member
 Ms. Hafiza Maryam Iqbal, Field Team Member
 Mr. Mubeen Ahmad, Sub-Engineer

Description of Visit:

Zonal Field Team of ICT & AJK went to Tumair village for baseline survey of watercourses. Field Team of ME&IE Consultants along with the team of OFWM visited a watercourse at Tumair. Following is the summary and observations of this visit:

Tumair	
Province/Unit	ICT
Division	ICT
District	ICT
Tehsil	ICT
Village	Tumair
Name of Watercourse	Tumair
Coordinates	N 33.672494 , E 73.2830883
No. of beneficiaries	1
Culturable Command Area	2.75 Acres
Name of WUA Chairman	Sher Bahadurzada Khan
Total Number of Water Users	4
Cropping Pattern	Wheat, Maize
Type of Watercourse	PVC 3"
Water Logging & Salinity	No
Warabandi System	No
Designed Discharge	8 LPS
Main Source of water	Nalla (Mini Dam)
Additional Source of water	No
Sanctioned Lining Length	400 m
Date of Technical Sanction	23-06-2020
Sanctioned Cost	Rs. 1326587/-



Figure-4.38: ME&IE Consultants' Baseline visit to Tumair, Islamabad Capital Territory

4.5.5.2 Baseline Survey by Punjab Zonal Office

Coordination with OFWM-Field Offices

It was necessary for ME&IE Consultants to coordinate with OFWM Department field offices. Coordination with OFWM was pre-respective. Therefore, the Deputy Team Leader briefed the field teams of ME&IE consultants concerned how to coordinate/consult with DDA (OFWM) / ADA (OFWM) and other field officers of various sub-zones. The main objective of these conversations was to introduce the role of ME&IE Consultants and the availability of OFWM-field staff and WUA chairman for the field visits.

Then field team Incharge consulted with the OFWM department Deputy Director Agriculture (District level), Assistant Director Agriculture (Tehsil level), and other relevant officers in their respective sub- zones.

Team Incharge of each field survey team remained in contact with OFWM offices of their respective zones to get data / information related to the NPIWC-II project. The team Incharges emphasized on:

- Technical sanction issue of watercourses
- Availability of basic data of sampled watercourses
- Visit to the site of intervention/owner of water storage tank
- Contact with chairman water user's association

Data Collection Techniques

With coordination and assistance of the OFWM Field staff, targeted interventions were approached in their areas. The general criteria for selection such intervention was followed as under:

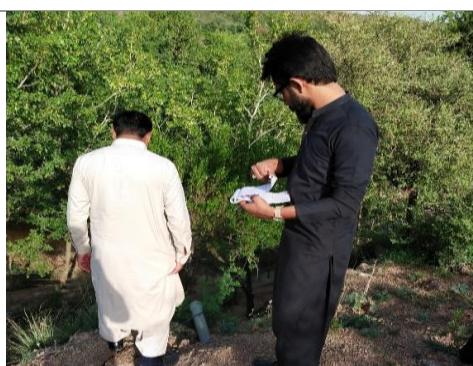


Figure-4.37: Checking the design of pipeline installed at Tumair, ICT

- a. Watercourses Criteria for Selection of an Intervention:
 - i. Watercourse Technical Sanctions (TS) has been issued or likely to be issued soon.
 - ii. Water flow on the watercourse could be measured before actual improvement of the watercourse starts.
 - iii. Due sharing of Regular Watercourses will be given in the Sample
 - iv. Water user association (Through Chairperson of the same water course will also become an independent respondent for ME&IE study purposes).
 - v. Water Storage Tank- The main criteria was Technical Sanction (TS) Issued, regardless the stage of construction.

Data Collection Tools / Instruments

Different types of data / information were used to collect data from various stakeholders during conduction of the baseline survey. It starts from the formation / organization of the Water Users Association and concludes with data on agricultural production asked from sample farmers. Various monitoring and Evaluation tools (MTS) were pre-designed and pre-tested for this purpose. These MTs have been converted into android-based applications on mobile phones. The

information shared / observation recorded and responses of respondents were filled through tabs / smartphone using this android based application. The data collected from the field will be uploaded to the MIS / GIS system online for further process and analysis.

The different tools / instruments / questionnaires pre-design and pre-tested before implementation in the field, pertain to:

- i. Basic data information from OFWM department regarding sampled interactions.
- ii. Data on monitoring and evaluations of sampled interventions.
- iii. Benchmark / baseline level information from users of improved watercourse and water storage tanks regarding their input – output level at respective farms.

Data Collection Method

Important methods of data collections, used in study include:

- i. Data sharing with OFWM department in the field.
- ii. One to one interview with Chairman WUA.
- iii. Face to face interventions with beneficiaries of watercourse and water storage tanks.

Allocation of Field Teams

Team Sub Zone-1		Team Sub Zone-2		Team Sub Zone-3	
Division	District	Division	District	Division	District
Faisalabad	Faisalabad	Gujranwala	Gujranwala	Bahawalpur	Bahawalpur
	Jhang		Hafizabad		R.Y Khan
	Chiniot		Narowal		Bahawalnagar
	T.T. Singh		Sialkot	D.G. Khan	D.G. Khan
Sahiwal	Sahiwal		M.B. Din		Muzaffargarh
	Pakpattan		Gujrat		Layyah
	Okara	Sargodha	Sargodha		Rajanpur
Lahore	Lahore		Khushab	Multan	Multan
	Sheikhupura		Bhakkar		Khanewal
	Nankana Sahib		Mianwali		Vehari
	Kasur				Lodhran
Sub Zone-1 Areas Visited by Team-1		Sub Zone-1 Areas Visited by Team-2		Sub Zone-1 Areas Visited by Team-3	
District Kasur Tehsil Kasur, Kot Rada Kishain and Chunian. District Okara Tehsil Depalpur		District Gujranwala Tehsil Wazirabad and Nowshera Virkan. District Gujrat Tehsil Gujrat.		District Muzaffargarh, Tehsil Kot Addu	

List of visited Watercourses Sub Zone-1

Sr. No	WC ID	Status	WC Type	Address
1	3854/L	ICR-II	Regular	Mozah Bakar kay Tehsil Kasur Distt Kasur
2	11430/R	ICR-II	Additional	Bhuddo ki Tehsil Chunia Dist. Kasur
3	20100/L	ICR-I	Additional	Arora Mian khan Tehsil Depalpur Dist. Okara
4	10483/L	ICR-I	Additional	Sharif Abad Tehsil Depalpur Dist. Okara
5	18000/L	ICR-I	Additional	Mozah Budhana Tehsil Depalpur Distt Okara
6	67700/L	ICR-II	Additional	Fareed Pur Suhaag Tehsil Depalpur Distt Okara

List of visited Watercourses Sub Zone-3

Sr. No	WC ID	Status	WC Type	Address
1	26590/L	ICR-I	Additional	Mozah Shadi Khan Munda, Kot Addu, Muzaffar Garh
2	211073/R	ICR-I	Additional	Chak 521 TDA Kot Addu, Muzaffar Garh
3	17600/L	ICR-I	Additional	Raan, Kot Addu, Muzaffar Garh
4	94934/L	ICR-II	Additional	Chak 604 TDA Kot Addu, Muzaffar Garh
5	46922/L	ICR-I	Additional	583 TDA, Kot Addu, Muzaffar Garh
6	26338/R	ICR-II	Regular	Khar Sharqi, Kot Addu, Muzaffar Garh

List of visited Watercourses Sub Zone-2

Sr. No	WC ID	Status	WC Type	Address
1	21600-R	ICR-2	Additional	Tung Khurd Nowshera Virkan Gujranwala
2	58622-TL	ICR-1	Additional	Pandoki, Wazirabad Gujranwala
3	18715-R	ICR-1	Additional	Hazrat Kalian Wala, Wazirabad Gujranwala
4	12445-R	ICR-2	Additional	Dhella Chahta, Wazirabad, Gujranwala
5	125800-R	ICR-2	Additional	Garmula Virkan, Nowshera Virkan, Gujranwala
6	63100-L	ICR-2	Additional	Moza Pagalla, Nowshera Virkan, Gujranwala
7	73300-R	ICR-2	Regular	Khan Musalmans Nowshera Virkan Gujranwala

Pictorial View of Team-1 Field Visits



Figure-4.39: Discussion of field team with DDA
Kasur Rana Tajammal Husain



Figure-4.40: Field team with ADA Kot Radha
Kishan Dr. Nadeem Jafery at ADA office



Figure-4.41: Improper back filling of watercourse 3854/L Kasur



Figure-4.45: Visit of WST with ADA at Moza Mojo-ki



Figure-4.42: Alternate way of watercourse 3854/L



Figure-4.46: Meeting with ADA Kot Radha Kishan Dr. Nadeem Jafery



Figure-4.43: View of Concreted WST



Figure-4.47: Visit of field team with ADA at sight of Moza Budho-ki WC 11430/R



Figure-4.44: Discussion with ADA Kasur Mr. Hafiz Ilyas



Figure-4.48: Data collection from beneficiaries of WC-20100/L Depalpur



Figure-4.49: View of concreted WST 42/2L Okara



Figure-4.53: Data collection from beneficiaries of WC-10483/L



Figure-4.50: View of Outlet for WC 10483/L Depalpur



Figure-4.51: Proper back filling of watercourse 11430/R

Pictorial View of Team-2 Field Visits



Figure-4.54: Discussion of field team with DDA Gujranwala (Amir Saleem Manghat)



Figure-4.55: Field Visit at WST with ADA Noshehra Virkan



Figure-4.52: Data collection from beneficiaries of WC-10483/L



Figure-4.56: Improper placement of Segments & Naccas on watercourse no 21600-R



Figure-4.57: Collection of Data from beneficiaries of Watercourse No 58622/TL

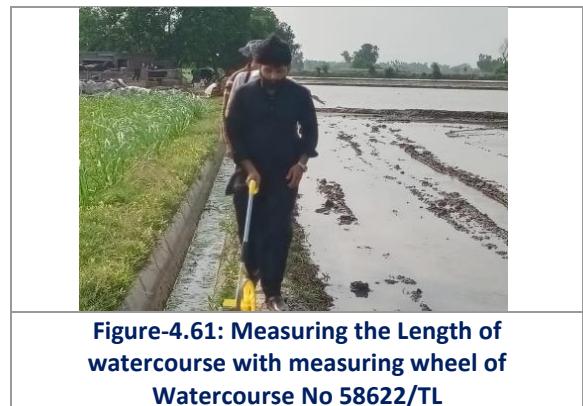


Figure-4.61: Measuring the Length of watercourse with measuring wheel of Watercourse No 58622/TL



Figure-4.58: Picture with WMO officer and beneficiaries after collection the data of Watercourse No 58622/TL



Figure-4.62: Work under process of watercourse no18715/R



Figure-4.59: Slope issue at Watercourse In Kalianwala of watercourse no18715/R



Figure-4.63: Checking the depth of Watercourse no 12445/R Della Chatha



Figure-4.60: Discussion with WMO about Mogga point of Watercourse No 58622/TL

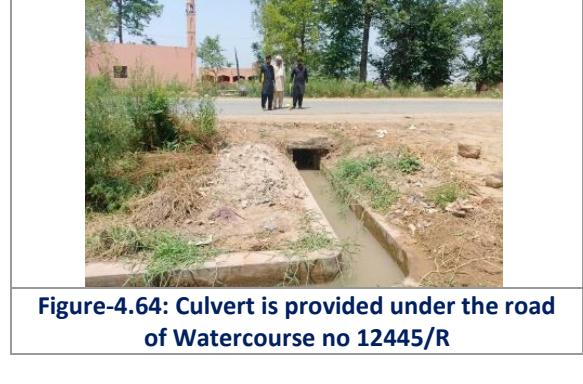


Figure-4.64: Culvert is provided under the road of Watercourse no 12445/R



Figure-4.65: Measuring the Coordinates at Watercourse 125800/R in Garmula Virkan



Figure-4.69: Measuring the length of watercourse with measuring wheel of Watercourse 125800/R



Figure-4.66: Data collection from Beneficiary of Watercourse 125800/R



Figure-4.70: Top view of WST in Gujrat



Figure-4.67: Inspection of water theft of Watercourse no 12445/R



Figure-4.71: Check the depth of Watercourse no 73300/R in Khan Musalman



Figure-4.68: Inspection of Branches and Naccas channel of watercourse no 125800/R



Figure-4.72: Measuring the length of WST with the help of measuring tape



Figure-4.73: Measuring Distance of WC with measuring Tape of Watercourse 63100/L



Figure-4.74: Checking depth of WC 63100/L



Figure-4.75: View of Control Structures of WC



Figure-4.77: Introduction and Briefing of Supervisors of Respective Water courses and Water Storage Tank



Figure-4.78: In meeting with WUA Chairman WC 221073 R



Figure-4.79: Meeting with WUA Beneficiaries 221073 R



Figure-4.80: Field Team Members Meeting with WUA WC 26590 L

Pictorial View of Team-3 Field Visits



Figure-4.76: Briefing in Progress between Field Team Incharge and Officers with ADA Kot Addu



Figure 4.81: View of Water Course No. 211073 R



Figure 4.85: Field Team Members with chairman of WC 46922 L



Figure 4.82: Field Team Members with WUA Chairman WC17600 L



Figure 4.86: Field Team and WUA Beneficiaries meeting in Progress



Figure 4.83: Field Team Members with WUA Chairman and Beneficiaries of water course 94934 L



Figure 4.87: Data Collection Session Between WUA Beneficiaries WC17600 L



Figure 4.84: Backfilling process in progress at water course 94934 L



Figure 4.88: Field Team in meeting with WUA Beneficiaries of Watercourse No. 26338 R



Figure-4.89: Field Team in meeting with WUA Chairman of Water Course No. 26338 R

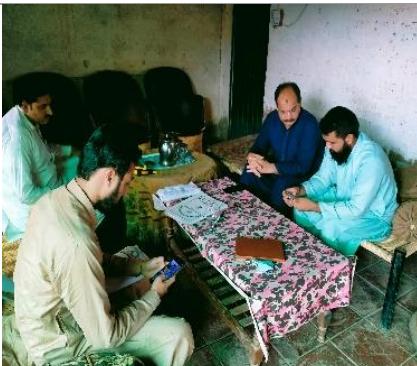


Figure-4.90: Field Team with WST Beneficiary of Waheed Ahmed Bhatti



Figure-4.91: View of Tube Well Attached to Water Course 26590 L

4.5.5.3 Baseline Survey by KP Zonal Office

Visits of ME&IE Field Team-1 - KP Zone

Team-1 (Peshawar)	District	WC	WST	Beneficiary Interviewed
Mumtaz Ullah (FTI), Fawad Ali, Aftab Ahmed	Swabi	1	0	13
	Swabi	1	0	
	Nowshera	1	0	13
	Nowshera	0	1	8
	Peshawar	1	0	10
	Charsadda	1	0	
	Charsadda	0	1	10
	Mardan	1	0	9

Date	16/06/2021
Venue	OFWM District Swabi
Participants	
i.	Mr. Abdul Hafeez (DD) OFWM Swabi
ii.	Mr. Qayash, Sub Engineer OFWM Swabi
iii.	ME&IE Consultants KP Team 1 (Mumtaz Ullah, Aftab Ahmad, Fawad Ali)

Meeting Agenda: Site Visit

Our team reached the OFWM office Swabi at 08:30 am but the OFWM staff was not in the office yet. At 09:00 Sub Engineer Mr. Qayash reached the office. After the introduction of both teams the meeting has started. The main agenda of the meeting was to visit watercourses that were recently developed under the NPIWC-II program. The team discussed with OFWM regarding two watercourses i.e. Baaz Muhammad watercourse and 026/L. The OFWM has inform the team that the water courses are far away from the office however the team has started their journey towards the water courses.

Field Visit – Village Boko

Watercourse ID:	Baaz Muhammad Tubewell pipe WC
Name of village:	Boko
Union council:	Jahnda
Chairman WUA:	Baaz Muhammad
Tehsil & District:	Swabi
Source of irrigation:	Tubewell
Total length of watercourse:	900
Estimated length of lining:	400
Command area of watercourse:	17
No of beneficiaries:	15
Starting date:	15- Feb-2020
Completion date:	21-March-2020
Cost of Construction of WC:	227101



Figure-4.92: Group Photo with OFWM Swabi

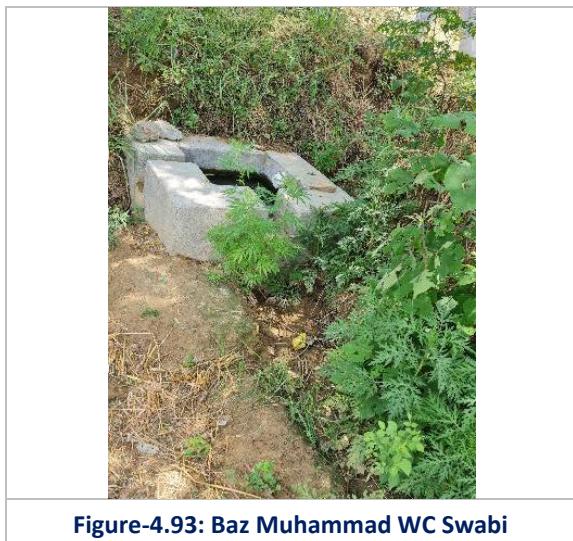


Figure-4.93: Baz Muhammad WC Swabi

2) Field Visit – 026/L WC

Watercourse ID:	026/L
Name of village:	Jahnda Wand
Union council:	Jahnda
Chairman WUA:	Akhtar Nawaz
Tehsil & District:	Swabi
Source of irrigation:	Canal
Total length of watercourse:	600
Estimated length of lining:	173
Command area of watercourse:	50
No of beneficiaries:	9



Figure-4.94: 026/L WC Jahnda Wand Swabi

Date	17 Jun 2021
Venue	OFWM District Nowshera
Participants	
i.	Mr. Mansoor (DO) OFWM Nowshera

- ii. Engr. Abdul Khaliq OFWM Nowshera
- iii. ME&IE Consultants KP Team 1

Meeting Agenda: Site Visit

As per schedule our team reached to OFWM office at 9:00 am. Both sides introduced their teams to each other. The agenda of the meeting was to discuss about one WC and one WST. The OFWM staff has informed our team that the area which was completely uncultivable has started production of wheat, maize and some vegetables after completion of WC. The OFWM staff has also informed us that cropping intensity has also increased after construction of WST.



Figure-4.95: Group Photo with OFWM Nowshera

Water Storage Tank	Rehaj Gul
Name of village:	Umari Kale
Union council:	Akora Khattak
Chairman WUA:	Rehaj Gul
Tehsil & District:	Nowshera
Source of irrigation:	Tubewell
Shape of water storage tank:	Square
Size of water storage tank:	40*40

Watercourse ID:	Tahir Shah TWWC
Name of village:	Deri Kati Khail
Village council:	Hakimabad
Chairman WUA:	Tahir Shah
Tehsil & District:	Nowshera
Source of irrigation:	Tubewell
Total length of watercourse:	1600
Estimated length of lining:	780
Command area of watercourse:	40
No of beneficiaries:	13

Starting date:	28/12/2020
Completion date:	10/01/2021
Construction cost of WC:	924660
	

Figure-4.96: Tahir Shah WC Nowshera

Date	21 Jun 2021
Venue	OFWM District Charsadda
Participants	
i. Mr. Jehangir Khan (DD) OFWM ii. Mr. Tahir Khan(WMO) OFWM iii. ME&IE Consultants KP Team-1 (Mumtaz Ullah, Aftab Ahmad, Fawad Ali)	
Meeting Agenda: Site Visit	
The team reached to OFWM office Charsadda. After introduction the team started discussion about the visit of the day. The agenda of the meeting was to take updates about WC and one WST where the team had planned to visit. The OFWM staff has informed the team the WC has already completed and FCR has already issued. The OFWM has also inform the team that the Technical sanctioned for the water storage Tank.	
	

Figure-4.97: Meeting with OFWM Charsadda

Water Storage Tank	Noorul Amin
Name of village:	Mardand
Union council:	Mardand

Chairman WUA:	N/A
Tehsil & District:	Tangi/Charsadda
Source of irrigation:	Tubewell
Shape of water storage tank:	Square
Size of water storage tank:	38*38

Watercourse ID:	3077R
Name of village:	Hisara Nehri
Village council:	Hisara Nehri
Chairman WUA:	Muhammad Iqbal
Tehsil & District:	Tangi Charsadda
Source of irrigation:	Canal
Total length of watercourse:	3330
Estimated length of lining:	806
Command area of watercourse:	119
No of beneficiaries:	15
Construction cost of WC:	999478

Date	19 Jun 2021
Venue	OFWM District Peshawar
Participants	
i. Mr. Shaheen OFWM Peshawar ii. Mr. Munir OFWM Peshawar iii. ME&IE Consultants KP Team-1 (Mumtaz Ullah, Aftab Ahmad, Fawad Ali)	
Meeting Agenda: Site Visit	
Today's meeting was to discuss the visit to a water course which was recently completed. The introduction took place with the OFWM. The OFWM has informed the team that the water course in question has two sources of water, 1 from the tub well and 1 from the non-perennial canal.	

Watercourse ID:	Shad Muhammad
Name of village:	Telaband
Village council:	Telaband
Chairman WUA:	Shad Muhammad
CNIC:	1730-5321907-5
Cell No.	3018989826
Tehsil & District:	Peshawar
Source of irrigation:	Tubewell/ canal

Total length of watercourse:	1600
Estimated length of lining:	564
Command area of watercourse:	30
No of beneficiaries:	10
Starting date:	22/01/2020
Completion date:	24/02/2020

Date	22 Jun 2021
Venue	OFWM District Mardan
Participants	
i. Mr. Khan Daraz (DD) OFWM ii. Engr. Mr. Saeed Shah OFWM Mardan iii. ME&IE Consultants KP Team-1 (Mumtaz Ullah, Aftab Ahmad, Fawad Ali)	
Meeting Agenda: Site Visit	
The agenda of the meeting was to discuss and visit 1 water course in District Mardan.	
The team reached to the OFWM office at 8:30. After introduction the OFWM has informed us that the WC to be visited is in Tehsil Tangi which was more than 1 hour drive from OFWM office. After detail discussion our team along with OFWM has left for the site.	
	
Figure-4.98: Shad Muhammad WC Peshawar	

Watercourse ID:	Ali Sarwar WC
Name of village:	Hussay
Village council:	Garyala
Chairman WUA:	Muhammad Umair

Tehsil & District:	Mardan
Source of irrigation:	Tubewell
Total length of watercourse:	698
Estimated length of lining:	253
Command area of watercourse:	30
No of beneficiaries:	9
Starting date:	2/11/2020
Construction cost of WC:	Rs. 10,13,081/-



Figure-4.99: Ali Sarwar WC Mardan

Visits of ME&IE Field Team-2 - KP Zone

Team-2 (DI Khan)	District	WC	WST	Beneficiary Interviewed
Inamullah (FTI), Farhan Tayab, Matlob Husain.	Kohat	1	0	6
	Lakki Marwat	1	0	6
	DI Khan	1	0	7
	DI Khan	1	0	7
	Lakki Marwat	1	0	6
	Bannu	1	0	6
	Tank	0	1	
	Lakki Marwat	0	1	

Date	15/6/2021
Venue	ONFM Office Kohat
Participants:	
i. Mr. Irfan, Sub Engr. ONFM Kohat ii. ME&IE Consultants KP Field Team-2 (Inam Ullah Khan FTI, Matloob Hussain & Farhan Tayyab)	
Meeting Agenda: Site Visit	
Team 2 Visited Kohat OFWM Office at 10:30 AM met there with Engineer Irfan. The following points were noted accordingly.	
1) Introduction of field staff with OFWM staff at his office Kohat.	

- 2) ME&IE Team will visit for Watercourse which was technically sectioned or completed 2020-21.
- 3) Team will visit for BSL and will meet there with WUA.
- 4) OFWM staff will guide and support the ME&IE team for BSL.

Field Visit – Village Gumbat

Watercourse ID:	Asim Altaf TWWC / Kohat 01
Name of village:	Gumbat
Union council:	Gumbat
Chairman WUA:	Asim Altaf
Tehsil & District:	Kohat
Source of irrigation:	Tube Well
Total length of watercourse:	2000 Meter
Estimated length of lining:	930 Meter
Command area of watercourse:	17 Acre
No of beneficiaries:	6
Starting date:	1/12/2020
Completion date:	30/12/2020



Figure-4.100: BSL at TWWC Asim Altaf Kohat

Date	16/6/2021
Venue	OFWM Office Lakki Marwat
Participants	
i.	Mr. Bakhat Ali, DO ONFM Lakki Marwat
ii.	Engr. Hussain Ahmad ONFM Lakki Marwat
iii.	ME&IE Consultants KP Field Team-2 (Inam Ullah Khan FTI, Matloob Hussain & Farhan Tayyab)
Meeting Agenda: Site Visit	
Team 2 Visited Lakki Marwat OFWM Office at 1:30 PM and met District Director Bakhat Ali at his office. The following points were noted accordingly.	
1)	Introduction of field staff with OFWM staff at his office Lakki Marwat.

- 2) ME&IE Team will visit for Watercourse which was technically sectioned or completed 2020-21.
- 3) Team will visit for BSL and will meet there with WUA.
- 4) OFWM staff will guide and support the ME&IE team for BSL



Figure-4.101: Meeting in DO OFWM Office Lakki Marwat

Field Visit – Lakki Marwat

Watercourse ID:	Gulo Khan TWWC/LM01
Name of village:	Wanda Dalan
Union council:	Mila Shahb Khel
Chairman WUA:	Gulo Khan
Tehsil & District:	Lakki Marwat
Source of irrigation:	TWWC
Total length of watercourse:	850 m
Estimated length of lining:	402
PCPS:	NA/ PVC 6 inch
Command area of watercourse:	14 Acres
No of beneficiaries:	6
Starting date:	6/1/2021
Cost of Construction of WC:	Rs. 895,702/-



Figure-4.102: BSL at TWWC Gulo Khan Lakki Marwat

Watercourse ID:	Safeerullah TWWC/LM 02
Name of village:	Kot Kashmir
Union council:	Kot Kashmir
Chairman WUA:	Safeer Ullah
Tehsil & District:	Sariye Norang/Lakki Marwat
Source of irrigation:	TWWC
Estimated length of lining:	890 m
PCPS:	No/ PVC
Command area of watercourse:	31 Acres
No of beneficiaries:	6
Starting date:	May 20/2021
Cost of Construction of WC:	Rs. 969,848/-



Figure-4.103: BSL at TWWC Safeer Ullah Khan Lakki Marwat

Water Storage Tank	WST Mehtab Ahmad
Name of village:	Asmat Abad
Union council:	Mash Masti Khani
Chairman WUA:	Abdul Hakim
Tehsil & District:	Saraye Norang/ Lakki Marwat
Source of irrigation:	TW
Shape of WST:	Square
Size of water storage tank:	35.0*35.0 feet
Depth of WST:	4.6 feet
Command area of watercourse:	15.5



Figure-4.104: BSL at WST Abdul Hakim Lakki Marwat

Date	17/6/2021
Venue	ONFM Office D.I. Khan
Participants:	
i. Engr. Sheikh Jamshed, ONFM D.I.Khan ii. ME&IE Consultants KP Field Team-2 (Inam Ullah Khan FTI, Matloob Hussain & Farhan Tayyab)	
Meeting Agenda: Site Visit	
Team 2 Visited OFWM Office D.I. Khan at 9:00 AM met there with Engineer Sheikh Jamsheed Sahib. The following points were noted accordingly.	
<ol style="list-style-type: none"> 1) Introduction of field staff with OFWM staff at his office D.I. Khan. 2) ME&IE Team will visit for NPIWC who was technically sectioned or completed 2020-21. 3) Team will visit for BSL and will meet there with WUA. 4) OFWM staff will guide and support the ME&IE team for BSL. 	



Figure-4.105: Meeting in OFWM Office DI Khan

Field Visit D.I. Khan

Watercourse ID:	Sona Khan TWWC/ D.I. Khan 1
Name of village:	Rodi Khel
Village council:	Rodi Khel
PK	96
Chairman WUA:	Muhammad Zubair
Tehsil & District:	D.I. Khan

Source of irrigation:	Tube Well
Command area of watercourse:	68
No of beneficiaries:	6
Starting date:	On TS
Completion date:	On TS
Construction cost of WC:	Rs. 824,517/-



Figure-4.106: Measuring length of TWWC Sona Khan DI Khan

Watercourse ID:	Naimatullah TWWC/DI 02
Name of village:	Rodi Khel
Union council:	Band Korie
Chairman WUA:	Naimat Ullah
Tehsil & District:	Paharpur/DIKhan
Source of irrigation:	TWWC
Total length of watercourse:	TS/
Estimated length of lining:	545 m
PCPS:	Yes
Command area of watercourse:	38 Acres
No of beneficiaries:	6
Starting date:	On TS
Completion date:	On TS
Cost of Construction of WC:	Rs. 1,099,357/-



Figure-4.107: Measuring TWWC Naimat Ullah DI Khan

Date	18/6/2021
Venue	ONFM Office Bannu
Participants:	
i. Abdul Qayum, DO ONFM Bannu ii. Engr. Kifayat Ullah ONFM Bannu iii. ME&IE Consultants KP Field Team-2 (Inam Ullah Khan FTI, Matloob Hussain & Farhan Tayyab)	
Meeting Agenda: Site Visit	
Team 2 Visited OFWM Bannu Office at 4:00 AM and met with District Officer Abdul Qayum. The following points were noted accordingly.	
<ol style="list-style-type: none"> 1) Introduction of field staff with OFWM staff at his office Bannu. 2) ME&IE Team will visit watercourse which was technically sectioned or completed 2020-21. 3) Team will visit for BSL and will meet there with WUA. 4) OFWM staff will guide and support the ME&IE team for BSL. 	

Field Visit Bannu

Watercourse ID:	Habibullah TWWC/Bannu 01
Name of village:	Azim Kaly
Union council:	Khandar Khel
Chairman WUA:	Habib Ullah
Tehsil & District:	Domil/Bannu
Source of irrigation:	TWWC
Total length of watercourse:	2200 m
Estimated length of lining:	1100 m
PCPS:	No/ PVC 4 inch
Command area of watercourse:	31 Acres

No of beneficiaries:	6
Starting date:	Dec/8/2020
Cost of Construction of WC:	Rs. 1,231,500/-
	

Figure-4.108: BSL at TWWC Habib Ullah Bannu

Visits of ME&IE Field Team-3 - KP Zone

Team-3 (Mansehra)	District	WC	WST	Beneficiary Interviewed
Mahmood Hassan (FTI),	Haripur	1	0	
	Haripur	1	0	
	Abbottabad	1	0	
	Mansehra	1	0	
	Battagram	1	0	
	Torghar	1	0	
	Haripur	0	1	
	Haripur	0	1	
	Gilgit	1	0	
	Gilgit	0	1	

Field Visit Tank

Water Storage Tank	1 WST Abdul Hakim
Name of village:	Maidad Khel
Union council:	Mulazia
Chairman WUA:	Mehtab Ahmad
Tehsil & District:	Tank
Source of irrigation:	TWWC
Shape of water storage tank:	Square
Size of water storage tank:	35.7*35.7 feet
Depth of WST:	4.1 feet
Command area of watercourse:	9.5
Construction Cost of watercourse:	Rs. 458418/-



Figure-4.109: BSL at WST Mehtab Ahmad District Tank

Date	16/06/2021
Venue	OFWM District Haripur
Participants	
i. Mr. Muhammad Afzal District Director OFWM Haripur ii. Mr. Muhammad Asim Sub-Engineer OFWM Haripur iii. ME&IE Consultants KP Team-3 (Mahmood Ul Hassan, Abd Ur Raoof Saad, Arslan Bashir)	
Meeting Agenda: Site Visit	
KP Team 3 reached the OFWM office Haripur at 08:30 am. At 08:50 The District Director Muhammad Afzal and Sub- Engineer Mr. Muhammad Asim reached the office, after introducing ourselves we discussed about the baseline survey. The main agenda of the meeting was to visit two watercourses in District Haripur that were recently developed under the NPIWC-II program. The OFWM selected two watercourses and carried the necessary file of both targets. They selected the targets whose status was FCR which report was recently submitted. The first one was Nazakat Khan Tube Well Watercourse and the second one was Shakir Tube Well Watercourse.	

Field Visit Village “Jagal Dheenda”

Watercourse ID:	Nazakat Khan Tube Well Watercourse
Name of village:	Jagal
Union council:	Deendha
Chairman WUA:	Nazakat Khan
Tehsil & District:	Haripur
Source of irrigation:	Tubewell
Total length of watercourse:	1900 m
Estimated length of lining:	852 m
Command area of watercourse:	13.62 acres
No of beneficiaries:	11

Cost of Construction of WC:	1.56 M
	

Figure-4.110: Nazakat Khan WC Haipur, with OFWM officers & farmers



Figure-4.112: During interview at Shakir TW WC Haripur

Watercourse ID:	Shakir Tube Well Watercourse
Name of village:	Mohrri Malya
Union council:	Banian
Chairman WUA:	Shakir Ali
CNIC No.	13302-6343561-3
Cell No.	0315-5852981
Tehsil & District:	Haripur
Source of irrigation:	Tube Well
Total length of watercourse:	2159 m
Estimated length of lining:	954 m
Command area of watercourse:	30 acres
No of beneficiaries:	14
Starting date:	19-11-2020
Completion date:	30-06-2021
Cost of Construction of WC:	2.50 M
	

Figure-4.111: Shakir TW Wc Haipur, with OFWM officers & farmers

Date	17/06/2021
Venue	OFWM District Abbottabad
Participants	
i. Mr. Rashid Mehmood District Officer OFWM Abbottabad ii. Mr. Zahid Sub- Engineer OFWM Abbottabad iii. ME&IE Consultants KP Team-3 (Mahmood Ul Hassan, Abd Ur Raoof Saad, Arslan Bashir)	
Meeting Agenda: Site Visit	
KP Team 3 reached the OFWM office Haripur at 09:10 am. The District Officer Rashid Mehmood and Sub- Engineer Zahid were already present in the office, after introducing ourselves we discussed about the baseline survey. The main agenda of the meeting was to visit one watercourse in District Abbottabad that was recently developed under the NPIWC-II program. The OFWM selected one watercourse and carried the necessary file of the watercourse. They selected the target which status was FCR which report was recently submitted. We moved to the location with District officer Rashid Mehmood and Sub- Engineer Zahid.	



Figure-4.113: Meeting with OFWM District Officer Abbottabad

Watercourse ID:	Baghoter Doga pipeline WC
Name of village:	Baghoter Doga
Union council:	Boai
Chairman WUA:	Muhammad Sabir
Tehsil & District:	Abbottabad
Source of irrigation:	Stream
Total length of watercourse:	2665 m
Estimated length of lining:	As Above
Command area of watercourse:	Acres
No of beneficiaries:	15
Cost of Construction of WC:	Rs.998400

moved to the second location in Batagram. We met there in Batagram in OFWM office with Sub-Engineer Nawaz, sub- engineer Zarmast Khan and Sub-engineer Mushtaq and after brief discussion about baseline survey of watercourse they took us on location which status was TS issued.



Figure-4.115: Meeting with OFWM District Director Masoud Mansehra



Figure-4.114: Baghoter Doga, Abbottabad

Date	18/06/2021
Venue	OFWM District Mansehra
Participants	
i.	Mr. Masaud District Director OFWM Mansehra
ii.	Mr. Mazhir Sub- Engineer OFWM Mansehra
iii.	ME&IE Consultants KP Team-3 (Mahmood Ul Hassan, Abd Ur Raoof Saad, Arslan Bashir)
Meeting Agenda: Site Visit	
KP Team 3 reached the OFWM office Mansehra at 09:15 am. The District Director Mr. Masaud Sab and Sub- Engineer Mazhir were already present in the office, after introducing ourselves we discussed about the baseline survey. The main agenda of the meeting was to visit one watercourse in District Mansehra that was recently developed under the NPIWC-II program. The OFWM selected one watercourse and carried the necessary file of the watercourse. They selected the target which status was FCR which report was recently submitted. We moved to the location with Sub- Engineer. After the achievement of one target in Mansehra we	

Watercourse ID:	Ashaiq Hussain Tw WC
Name of village:	Maswal
Union council:	Hamsherya
Chairman WUA:	Ashaiq Hussain
Tehsil & District:	Mansehra
Source of irrigation:	Tube Well
Total length of watercourse:	900 m
Estimated length of lining:	400 m
Command area of watercourse:	10 Acres
No of beneficiaries:	9
Starting date:	10-20-2020
Cost of Construction of WC:	Rs. 544,384/-

Watercourse ID:	Badiuz Zaman WC
Name of village:	Garhi Muzaffar Khan
Village council:	Banian
Chairman WUA:	Fakhar Zaman
CNIC:	13202-0775258-5
Tehsil & District:	Batagram
Source of irrigation:	Stream
Estimated length of lining:	540 m
No of beneficiaries:	14
Starting date:	05-05-2021

Construction cost of WC:	Rs.540,800/-

Figure-4.116: Data collection in district Batagram



Figure-4.117: Data collection in district Batagram

Tehsil & District:	Torghar
Source of irrigation:	Stream
Total length of watercourse:	1400 m
Estimated length of lining:	205 m
Command area of watercourse:	54 Acres
No of beneficiaries:	10
Starting date:	04-12-2020
Cost of Construction of WC:	Rs.999,556/-



Figure-4.118: Along with sub- Engineer Fazlur Raham, District Torghar

Date	19/06/2021
Venue	OFWM District Torghar
Participants	
i.	Mr. Fazl Ur Rahman Sub- Engineer OFWM Torghar
ii.	ME&IE Consultants KP Team-3 (Mahmood Ul Hassan, Abd Ur Raoof Saad, Arslan Bashir)
Meeting Agenda: Site Visit	
KP Team 3 reached the OFWM office Torghar at 12:00 pm and met sub- Engineer Fazl Ur Rahman and discussed about the baseline survey of the watercourse. The main agenda of the meeting was to visit one watercourse in District Torghar that will be developed under the NPIWC-II program. The OFWM selected one watercourse and carried the necessary file of the watercourse. He selected the target which status was TS issued. We moved to the location with Sub- Engineer Fazl Ur Rahman.	

Watercourse ID:	Jaaga Bala Wc
Name of village:	Jaaga Bala
Union council:	Judbah
Chairman WUA:	Abdul Basit

Date	21/06/2021
Venue	OFWM District Haripur
Participants	
i.	Mr. Muhammad Afzal District Director OFWM Haripur
ii.	Mr. Muhammad Tariq Sub-Engineer OFWM Haripur
iii.	ME&IE Consultants KP Team-3 (Mahmood Ul Hassan, Abd Ur Raoof Saad, Arslan Bashir)
Meeting Agenda: Site Visit	
KP Team 3 reached the OFWM office Haripur at 10:40 am. The team meet with District Director Muhammad Afzal and Sub- Engineer Muhammad Tariq, we discussed about the baseline survey. The main agenda of the meeting was to visit two Water Storage Tanks in District Haripur that were recently made under the NPIWC-II program. The OFWM selected two Water Storage Tanks and carried the necessary file of both targets. They selected the targets which status was FCR which report was recently submitted. The first one was Nazakat Khan WST and the second one was Abid Khan WST. We moved to the location with Sub- Engineer Muhammad Tariq.	



Figure-4.119: Meeting with OFWM District Director Muhammad Afzal Haipur



Figure-4.120: Data collection of WST in District Haripur



Figure-4.121: WST at District Haripur



Figure-4.122: WST in District Ghazi

Water Storage Tank	Nazakat Khan WST
Name of village:	Jagal Dheenda
Union council:	Dheenda
Chairman WUA:	Nazakt Khan
Tehsil & District:	Haripur
Source of irrigation:	Tube Well
Shape of water storage tank:	Square
Size of water storage tank:	11*11 m
Depth of WST:	5' feet
Command area of watercourse:	13.62 acres
No of beneficiaries:	11
Starting date:	05-11-2020
Construction Cost of watercourse:	Rs.646683

Water Storage Tank	Abid Khan WST
Name of village:	Khair Barra
Union council:	Khair Barra
Chairman WUA:	Muhammad Asif
Tehsil & District:	Ghazi & Haripur
Source of irrigation:	Tube Well
Shape of water storage tank:	Square
Size of water storage tank:	9*9 m
Depth of WST:	5' F

Date	23/06/2021
Venue	OFWM Gilgit Baltistan
Participants	
i. Mr. Sher Jahan Director General OFWM GB ii. Mr. Iftikhar Ali Agriculture Engineer OFWM GB iii. ME&IE Consultants KP Team-3 (Mahmood Ul Hassan, Abd Ur Raoof Saad, Arslan Bashir)	
Meeting Agenda: Site Visit	
KP Team 3 reached the Head office of WM in Gilgit Baltistan at 09:30 am. The team met with Director General Sher Jahan in his office and enlightened them about the baseline survey of one watercourse and one water storage tank. He sent us to the Agriculture Engineer Iftikhar Ali's office for further discussion. The main agenda of the meeting was to visit one watercourse and one Water Storage Tank in Gilgit Baltistan the watercourse was recently developed under the NPIWC-II program and the WST status was TS issued. He carried the necessary file of both targets and moved to the location to achieve our target.	



Figure-4.123: Meeting with DG Sher Jahan WM Directorate Gilgit Baltistan



Figure-4.124: Meeting with Agriculture Engineer Iftikhar Ali in WM office Gilgit Baltistan

1) Field Visit Date: 16th June, 2021

Watercourse ID:	WC/BALC/NB/01
Name of village:	Haji Qamar Din
Union council:	Quba Sher Khan
Chairman WUA:	Munawar Ali
Tehsil & District:	D.M. Jamali, Naseerabad
Source of irrigation:	Rabi Canal
Total length of watercourse:	2722.6 ft.
Estimated length of lining:	1580 ft.
Command area of watercourse:	28 Acres
No of beneficiaries:	15
Cost of Construction:	2,825,815



Jun 16, 2021 2:22:18 PM
Figure-4.125: Spot Checking of Watercourse

4.5.5.4 Baseline Survey by Balochistan Zonal Office

Visits of ME&IE Field Team-1 - Balochistan Zone

The team – 1 monitored 05 watercourses and 04 water storage tanks of two districts i.e. Naseerabad and Sohbatpur.

Division	Districts	Tehsils	Sub Tehsils
Nasirabad	Nasirabad	1. D.M. Jamali 2. Tamboo 3. Baba Kot 4. Landhi	1. Chattar
	Sohbatpur	1. Sohbatpur 2. Manjipur 3. Hair Din 4. Fareedabad	1. Syed Muhammad Kanrani

2) Field Visit Date: 17th June, 2021

Watercourse ID:	WC/BALC/SB/01
Name of village:	Dirghi
Union council:	Dirghi
Chairman WUA:	Khalil Ahmed
Tehsil & District:	Dirghi, Sohbatpur
Source of irrigation:	Pat Feeder
Total length of watercourse:	3200 ft.
Estimated length of lining:	1960 ft. (As per design, under construction)
Command area of watercourse:	200 Acres

No of beneficiaries:	14
Cost of Construction:	2,825,815
	
Figure-4.126: Soil Compaction for construction of Watercourse	

3) Field Visit Date: 18th June, 2021

Watercourse ID:	WC/BALC/NB/02
Name of village:	Jan Jamali
Union council:	Quba Sher Khan
Chairman WUA:	Muhammad Safar
Tehsil & District:	D.M. Jamali, Naseerabad
Source of irrigation:	Rabi Canal
Total length of watercourse:	1150 ft.
Estimated length of lining:	1150 ft.
Command area of watercourse:	41 Acres
No of beneficiaries:	14
Cost of Construction:	2,825,815
	
Figure-4.127: Concrete Culvert with Watercourse	

4) Field Visit Date: 19th June, 2021

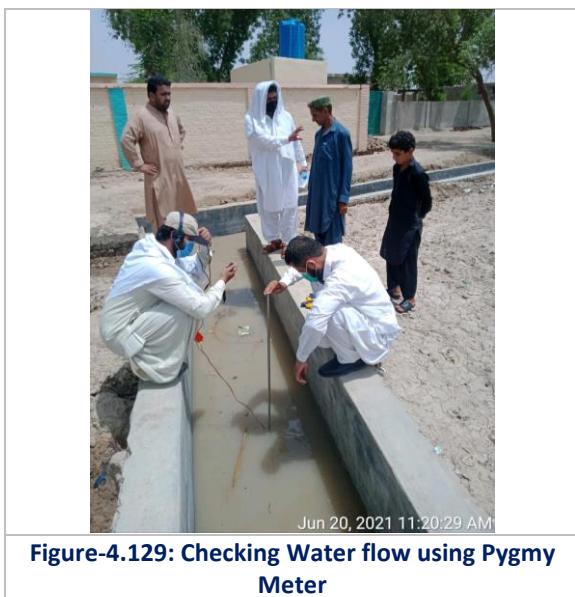
Watercourse ID:	WC/BALC/SB/02
Name of village:	Muhammad Ali
Union council:	Ghuri
Chairman WUA:	Shehzad Ali
Tehsil & District:	Fareedabad, Sohbatpur
Source of irrigation:	Naseer Shakh
Total length of watercourse:	2000 ft.
Estimated length of lining:	1150 ft.
Command area of watercourse:	130 Acres
No of beneficiaries:	6
Cost of Construction:	2,825,815



Figure-4.128: Measuring dimensions of Watercourse

5) Field Visit Date: 20th June, 2021

Watercourse ID:	WC/BALC/SB/03
Name of village:	Muhammad Bakhsh
Union council:	Noorpur
Chairman WUA:	Muhammad Bakhsh
Tehsil & District:	Fareedabad, Sohbatpur
Source of irrigation:	Jhuder Shakh
Total length of watercourse:	1700 ft.
Estimated length of lining:	1450 ft.
Command area of watercourse:	40 Acres
No of beneficiaries:	15
Cost of Construction:	2,825,815



7) Field Visit Date: 21st June, 2021

Water Storage Tank (Javaid Ahmed)

Name of village:	Javaid Ahmed
Union council:	Chattar
Chairman WUA:	Israr Ahmed
Tehsil & District:	Chattar, Naseerabad
Source of irrigation:	Tube well
Type of water storage tank construction:	Bricks
Size of water storage tank:	50x50
Depth of WST:	4.5
Command area of water storage tank:	25
No of beneficiaries:	2
Cost of Construction:	1,236,921



6) Field Visit Date: 21st June, 2021

Water Storage Tank (Abdul Rehman)	
Name of village:	Abdul Rehman
Union council:	Bedar Beroon
Chairman WUA:	Abdul Rehman
Tehsil & District:	D.M. Jamali, Naseerabad
Source of irrigation:	Pat Feeder
Type of water storage tank construction:	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.5
Command area of water storage tank:	58
No of beneficiaries:	8
Cost of Construction:	1,590,868



8) Field Visit Date: 22nd June, 2021

Water Storage Tank (Muhammad Din)

Name of village:	Muhammad Din
Union council:	Quba Sher Khan
Chairman WUA:	Muhammad Din
Tehsil & District:	D.M. Jamali, Naseerabad
Source of irrigation:	Pat Feeder
Type of water storage tank construction:	Bricks
Size of water storage tank:	50x50
Depth of WST:	4.5
Command area of water storage tank:	35
No of beneficiaries:	5
Cost of Construction:	1,236,921



Figure-4.132: Checking of Design and Dimensions

9) Field Visit Date: 22nd June, 2021

Water Storage Tank (Fareed Khan)	
Name of village:	Ameer Bukhsh Umrani
Union council:	Sikandarabad
Chairman WUA:	Fareed Khan
Tehsil & District:	D.M. Jamali, Naseerabad
Source of irrigation:	Pat Feeder
Type of water storage tank construction:	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.5
Command area of water storage tank:	62
No of beneficiaries:	7
Cost of Construction:	1,590,868



Figure-4.133: Spot checking before the construction of WST

Visits of ME&IE Field Team-2 - Balochistan Zone

Team 2 monitored 05 watercourses and 06 water storage tanks of 04 districts i.e. Mastung, Killa Abdullah, Killa Saifullah and Loralai.

S.#	Districts	Tehsil	Sub Tehsil
1	Mastung	1. Mastung 2. Dasht	1. Khed Kucha 2. Kirdgab
2	Killa Abdullah	1. Chaman 2. Killa Abdullah 3. Ghulistan	1. Dobandi
3	Killa Saifullah	1. Killa Saifullah 2. Muslim Bagh 3. Loi Band	Kaan Mehtarzai Badini Shinkai
4	Loralai	1. Loralai 2. Mekhthar	NA

1) Field Visit – Village Mammani

Watercourse ID:	WC/BALC/MT/01
Name of village:	Mammani
Union council:	Dhasht
Name of Farmer:	Abdul Ghani
Tehsil & District:	MASTUNG
Source of irrigation:	Tube well
Total length of watercourse:	2000 Rft
Estimated length of lining:	2000 Rft
Command area of watercourse:	14Acre
No of beneficiaries:	5
Cost of Construction:	1,548,697



Figure-4.134: Village Mammani

2) Field Visit – Village Gundain

Water Storage Tank (WST/BALC/MT/01)	
Name of village:	Gundain
Union council:	Dhasht
Chairman WUA:	Salman Ahmed
Tehsil & District:	Mastung
Source of irrigation:	Tube well

Type of water storage tank:	Brick Masonry
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Storage Tank:	8 Acre
No of beneficiaries:	5
Cost of Construction:	1,590,868
	
Figure-4.135: Village Gundain	

3) Field Visit – Village Pingow

Water Storage Tank (WST/BALC/MT/02)	
Name of village:	Pingow
Union council:	Dhasht
Chairman WUA:	Abdul Samad
Tehsil & District:	Mastung
Source of irrigation:	Tube well
Type of water storage tank:	Brick Masonry
Size of water storage tank:	50x50
Depth of WST:	4.75
Command area of water Storage Tank:	12 Acre
No of beneficiaries:	7
Cost of Construction:	1,236,921
	
Figure-4.136: Village Pingow	

4) Field Visit – Village _ Badwan

Watercourse ID:	WC/BALC/KA/01
Name of village:	Badwan
Union council:	Kulak
Chairman WUA:	Rehmat ullah
Tehsil & District:	Killa Abdullah
Source of irrigation:	Tube well
Total length of watercourse:	2000 R-ft
Estimated length of lining:	2000 R-ft
Command area of watercourse:	50 Acre
No of beneficiaries:	9
Cost of Construction:	1,548,697
	
Figure-4.137: Village Badwan	

5) Field Visit – Village Lamaran

Water Storage Tank (WST/BALC/KA/01)	
Name of village:	Lamaran
Union council:	Kulak
Chairman WUA:	Abdul Qahar Agha
Tehsil & District:	Killa Abdullah
Source of irrigation:	Tube well
Type of water storage tank:	Brick Masonry
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Storage Tank:	25 Acre
No of beneficiaries:	7
Cost of Construction:	1,590,868



Figure-4.138: Village Lamaran

7) Field Visit – Village Kharkaran

Water Storage Tank (WST/BALC/KS/01)

Name of village:	Kharkaran
Union council:	Saddar
Chairman WUA:	Abdul Rasheed
Tehsil & District:	Killa Saif ullah
Source of irrigation:	Tube well
Type of water storage tank:	Brick Masonry
Size of water storage tank:	50x50
Depth of WST:	4.75 (as per Design, under construction)
Command area of water Storage Tank:	12 Acre
No of beneficiaries:	7
Cost of Construction:	1,236,921



Figure-4.140: Village Kharkaran



Figure-4.139: Village Sra Bazala

8) Field Visit – Village Killi Molvi Bakthyar

Watercourse ID: WC/BALC/KS/02

Name of village:	Killi Molvi Bakthyar
Union council:	Bindad Mirzai
Chairman WUA:	Muhammad Gulab
Tehsil & District:	Bindad Mirzai/KSF
Source of irrigation:	Tube well
Total length of watercourse:	2000 R-ft
Estimated length of lining:	2000 R-ft (as per design, under construction)
Command area of watercourse:	10 Acre
No of beneficiaries:	9

Cost of Construction:	1,548,697
	

Figure-4.141: Village Killi Molvi Bakthyar

Tehsil & District:	Bori/Loralai
Source of irrigation:	Tube well
Type of Construction:	Brick Masonry
Size of water storage tank:	50x50
Depth of WST:	4.5
Command area of water Storage Tank:	12 Acre
No of beneficiaries:	10
Cost of Construction:	1,590,868


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Figure-4.143: Village Zangiwal

9) Field Visit Kach Amakzai

Watercourse (PVC Pipe) ID:	WC/BALC/LL/01
Name of village:	Dara Zinda
Union council:	Kach Amakzai
Chairman WUA:	Abdul Ghaffar
Tehsil & District:	Bori/Loralai
Source of irrigation:	Tube well
Total length of PVC Pipe:	1600 R-ft
Command area of watercourse:	12 Acre
No of beneficiaries:	8
Cost of Construction:	1,431,586



Figure-4.142: Visit Kach Amakzai

11) Field Visit – Village Shah Kareize

Water Storage Tank (WST/BALC/LL/02)	
Name of village:	Shah Kareize
Union council:	Shah Kareize
Chairman WUA:	Allaah-ud-Din
Tehsil & District:	Bori/Loralai
Source of irrigation:	Tube well
Type of water storage tank:	Brick Masonry
Size of water storage tank:	50x50
Depth of WST:	4.75
Command area of water Storage Tank:	6 Acre
No of beneficiaries:	9
Cost of Construction:	1,236,921

10) Field Visit – Village Zangiwal

Water Storage Tank (WST/BALC/LL/01)	
Name of village:	Zangiwal
Union council:	Zangiwal
Chairman WUA:	Muzakar Habib



Figure-4.144: Village Shah Kareize



Figure-4.145: Measuring the WST

Visits of ME&IE Field Team-3 - Balochistan Zone

The team- 3 monitored 01 watercourse and 11 water storage tanks of 04 districts i.e., Quetta, Mastung, Pishin and Kalat.

District	Tehsil	Sub Tehsil
Quetta	1. Quetta city 2. Quetta Saddar 3. Kuchlak	1. Punjrai
Pishin	1. Pishin 2. Hurramzai 3. Karezat 4. Saranan 5. Bostan 6. Nana Sahab	1. Barshore
Kalat	1. Kalat 2. Khaliq Abad	1. Johan 2. Gazg

1) Field Visit Date: 16th June, 2021

2) Field Visit Date: 16th June, 2021

Water Storage Tank (Abdul Majid)	
Name of village:	Khaiili
Union council:	Saddar
Chairman WUA:	Abdul Majid
Tehsil & District:	Quetta
Source of irrigation:	Tube well
Construction of works	Bricks
Size of water storage tank:	40x40 (As per design, under construction)
Depth of WST:	4.75
Command area of water Tank:	12
No of beneficiaries:	05

Water Storage Tank (Waseem Ullah khan)	
Name of village:	Mustafabad
Union council:	Saddar
Chairman WUA:	Waseem Ullah
Tehsil & District:	Quetta
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Tank:	15
No of beneficiaries:	05



Figure-4.146: Discussion and filling the data

3) Field Visit Date: 17th June, 2021

Water Storage Tank (Ahmed Yar)	
Name of village:	Yaranabad
Union council:	Baleli
Chairman WUA:	Ahmed yar
Tehsil & District:	Kuchlak Quetta
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Tank:	30
No of beneficiaries:	05



Figure-4.147: View of WST

4) Field Visit Date: 17th June, 2021

Water Storage Tank (Watan yar)	
Name of village:	Yaran abad
Union council:	Baleli
Chairman WUA:	Watan yar
Tehsil & District:	Kuchlak Quetta
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Tank:	30
No of beneficiaries:	5



Figure-4.148: Meeting with DD, OFWM

5) Field Visit Date: 18th June, 2021

Water Storage Tank (Hanau ud din)	
Name of village:	Malik yar
Union council:	Malik yar
Chairman WUA:	Hanan ud din
Tehsil & District:	Pishin
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	40x40
Depth of WST:	4.75
Command area of water Tank:	30
No of beneficiaries:	05



Figure-4.149: View of WST Structure

6) Field Visit Date: 18th June, 2021

Water Storage Tank (Ain ud din)	
Name of village:	Malik yar
Union council:	Malik yar
Chairman WUA:	Ain ud din

Tehsil & District:	Pishin
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	30x30
Depth of WST:	4.75
Command area of water Tank:	11
No of beneficiaries:	08



Figure-4.150: View of WST

8) Field Visit Date: 18th June, 2021

Water Storage Tank (Abdul Manan)	
Name of village:	Malik yar
Union council:	Malik yar-1
Chairman WUA:	Abdul Manan
Tehsil & District:	Pishin
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	40/32
Depth of WST:	4,75
Command area of water Tank:	11
No of beneficiaries:	05



Figure-4.152: ME&IE Team at WST

7) Field Visit Date: 19th June, 2021

Water Storage Tank (Muhammad Younas)	
Name of village:	Killi Abdullah Jan
Union council:	Pishin-2
Chairman WUA:	Muhammad Younas
Tehsil & District:	Pishin
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Tank:	15
No of beneficiaries:	06



Figure-4.151: View of filled WST

9) Field Visit Date: 21st June, 2021

Water Storage Tank (Muhammad Yousuf)	
Name of village:	Kapoto
Union council:	Kalat
Chairman WUA:	Muhammad Yousuf
Tehsil & District:	Kalat
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Tank:	15
No of beneficiaries:	08



Figure-4.153: View backfilling of WST

Tehsil & District:	Khaliqabad kalat
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	50x50
Depth of WST:	4.75
Command area of water Tank:	40
No of beneficiaries:	09

10 Field Visit Date: 21st June, 2021

Water Storage Tank (Ghulam Raza)	
Name of village:	Hasan Lalo
Union council:	Kalat
Chairman WUA:	Ghulam Raza
Tehsil & District:	Kalat
Source of irrigation:	Tube well
Construction of work	Bricks
Size of water storage tank:	60x60
Depth of WST:	4.75
Command area of water Tank:	30
No of beneficiaries:	08



Figure-4.154: Measuring the WST

11) Field Visit Date: 21st June, 2021

Water Storage Tank (Ghulam Mustafa)	
Name of village:	Muhammad goharam
Union council:	Khaliqabad
Chairman WUA:	Ghulam Mustafa



Figure-4.155: View of WST

12) Field Visit Date: 21st June, 2021

Watercourse ID:	WC/BALC/KT/01
Name of village:	Zarazai
Union council:	Khaliqabad
Chairman WUA:	Abdul Hameed
Tehsil & District:	Khaliqabad / Kalat
Source of irrigation:	Tube well
Total length of watercourse:	2000
Estimated length of lining:	2000
Command area of watercourse:	40
No of beneficiaries:	10



Figure-4.156: Signboard of WC at Zarazai

4.3.4 Data entry, cleaning, processing & analysis

The data collection through android based application for baseline survey (Phase-1) has been completed. The data entry, data cleaning, data processing & data analysis has been completed accordingly. The data sets and analysis on the basis of its Empirical Results will be the part of Baseline survey Report. The data sets will be available online in MIS/GIS System as well as with data export facility.

4.3.5 Regular Monitoring

This phase of the assignment include

- i. The monitoring of input-output and process as defined in the Annual Work Plan and Budget (AWPB) and
- ii. The tracking of the outcome indicators.

Regular routine monitoring will look at the extent to which the proposed project activities are being implemented as planned.

ME&IE Consultants are responsible for the regular routine monitoring and work in close collaboration with FPMU-FWMC, NWMC, OFWM Depts., FO/WUAs, District Governments, etc.

Regular Monitoring/Spot Checking activities have been started in this quarter. The regular monitoring activity was also carried out parallel to Baseline survey and now continued as regular activity during the course of project.

4.4 ICT ASSIGNMENT

4.4.1 Development of web site of NPIWC-II

The development of Website of NPIWC-II has been started in the month of February 2021. The following activities have been completed:-

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

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

As far as activity is concerned it has been complied. Refinement is under process.

4.4.2 Data collection of interventions in MIS/GIS database

The activity regarding data collection of Interventions in MIS/GIS database has been completed.

4.5 COORDINATION

Coordination Meetings were conducted between DTLs of ME&IE Consultants and respective DTLs of NWMC from time to time during the reporting period.

4.6 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 (MAY 2021)	To be submitted on Stipulated time.
Quarterly Monitoring & Evaluation Report-Second (APR-JUN 2021)	To be submitted on Stipulated time.
Baseline Survey Report	Under preparation, will be submitted shortly

Deliverables/Reporting Requirements are placed at Annex-C.

CHAPTER 5: WORK PLAN-ACTIVITIES OF SECOND QUARTER

The ME&IE Consultants' activities initiating during the Second Quarter 2021 (April 1, 2021 to June 30, 2021) are listed below. Time span detail is mentioned in the Tentative Work Plan. **Annex-A**. The Tentative Work Plan for Third Quarter (July 01, 2021 to September 30, 2021) is also given as **Annex-B**.

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
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)	To be submitted on Stipulated time.
Quarterly Monitoring & Evaluation Report-First (APR-JUN 2021)	To be submitted on Stipulated time.
Baseline Survey Report	Under completion

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

Matrix of Responsibilities

Matrix of Responsibilities is placed at **Annex-C**.

Document	Status
Draft Inception Report	Submitted
Final Inception Report	Submitted

CHAPTER 6: ISSUES / BOTTLENECKS

The ME&IE Consultants have been facing 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&B: TENTATIVE WORK PLAN

ANNEX-A: TENTATIVE WORK PLAN OF 2ND QUARTER

TENTATIVE WORK PLAN ME & IE CONSULTANTS - NPIWC-II

LEGEND											
ACTIVITY STARTS				ACTIVITY ENDS				ACTIVITY SPAN			

NO.	ACTIVITIES	3 Months - Year 2021 (Weeks)											
		April				May				June			
		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	Pre-field Activities:												
	1.1 Functional Field Offices in Punjab, KP & Balochistan Zones												
2	Field Activities:												
	2.1 Data collection from OFWM Department/NWMC for Baseline survey/regular monitoring												
	2.2 Training Session of field staff and Key staff on Survey Manual of MTs and Android Base System												
	2.3 Training of Measurement of water flow-Pygmy current meter												
	2.4 Determinants of Sample size at District/Tehsil levels with the assistance from ADA/DDA (OFWM)												
	2.5 Baseline survey field visit												
	2.6 Data entry, Data cleaning, Data processing & data Analysis												
	2.7 Regular Monitoring												
3	ICT Assignment:												
	3.1 Development of web site of NPIWC-II.												
	3.2 Development of Android based Mobile Application.												
	3.3 Testing of Monitoring tools on Android based system.												
	3.4 Data collection of interventions in MIS/GIS database.												
	3.5 Designing of dashboard of Project Interventions.												
4	Coordination												
	4.1 Meeting of DTLs with respective DTL of NWMC.												
5	Deliverables:												
	5.1 Monthly Monitoring Report (MMR)												
	5.2 Quarterly Monitoring & Evaluation Report (QM&ER)												
	5.3 Baseline Survey Report												

ANNEX-B: TENTATIVE WORK PLAN OF 3RD QUARTER

TENTATIVE WORK PLANNED FOR 3rd QUARTER (JULY TO SEPTEMBER 2021)												Legend						
No.	ACTIVITIES	3 Months-Year 2021 (Weeks)																
		July				August				September								
		WK-1	WK-2	WK-3	WK-4	WK-1	WK-2	WK-3	WK-4	WK-1	WK-2	WK-3	WK-4	Activity Starts		Activity Ends		Activity Span
1	Field Activities																	
	1.1 Regular Monitoring of Interventions in the Field																	
	1.2 Data collection of the interventions in the field																	
	1.3 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 ME&IE Consultants with Stakeholders regarding Project Progress / Issues																	
	3.2 Meetings of ME&IE DTLs with respective DTLs of NWMC																	
	3.3 Internal Meetings of ME&IE Consultants																	
4	Deliverable																	
	4.1 Monthly Monitoring Report																	
	4.2 Quarterly Monitoring Report																	
	4.3 Final Baseline Survey Report																	

ANNEX-C: MATRIX OF RESPONSIBILITIES

MATRIX OF RESPONSIBILITIES

LEGEND		
●	Primary Responsibility	
○	Secondary Responsibility	
○	Assistance	

SR. NO.	DELIVERABLE / ACTIVITIES	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, 	O	●	-	-	-
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, 	O	○	●	-	-
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-D: MONITORING LOG-FRAME

Annex-D: 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> a) 47,278 watercourses improved and 15 percentage points conveyance losses reduced b) Litigation among farmers reduced 	<ul style="list-style-type: none"> 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;	a) Conveyance losses for improved	a) Increase in cropping intensity on	a) Increase in farm income;	<ul style="list-style-type: none"> 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 	b) 47,278 WCAs 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%	b) Increase in 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;

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
							<ul style="list-style-type: none"> • Before and after employment; <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)	a) Construction of 14,932 water storage tanks	a) 14,932 small farmers mobilized to construct water storage tanks for irrigation b) They agree to contribute 40% of the cost	a) 14,932 WSTs constructed b) 14,932 WSTs operated and maintained	a) Water which was otherwise largely going to be wasted is saved b) Irrigation provided at critical stages of the crops c) Flexibility achieved for irrigation	a) More area irrigated b) Increased cropping intensities	a) Increased crop yields b) Increased total crop output quantum c) Increased farm income d) Increased farm employment	a) 2-5% sample of WSTs will be surveyed b) A data collection form will be designed to measure water saving due to WSTs c) The forms used for baseline and

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
		c) Agree to first construct the tank with his/her own funds and then received subsidy at 40% on issuance of FCR					impact surveys in case of 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

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
							<p>ME&IE Consultants 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-E:

DELIVERABLES/REPORTING REQUIREMENTS

ANNEX-E: 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