





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

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

*For*

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

**MONTHLY MONITORING REPORT**

**MAY 2022**

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## ACRONYMS

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

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

## EXECUTIVE SUMMARY

The “Monitoring Report for the month of May 2022” comprises five chapters:

**Chapter-1** describes the detailed introduction and description of the project. 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, Khyber Pakhtunkhwa (KP), Balochistan and Gilgit Baltistan (GB), Azad Jammu & Kashmir (AJ&K) as well as Islamabad Capital Territory (ICT). The present project is beneficial for the country.

The NPIWC-II comprises four components to be implemented in Punjab, KP, Balochistan, GB, AJ&K, 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** elaborates the objectives and 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 followed by ME&IE Consultants is briefly described in Table-2.1. The strategy has been finalized and implemented in close coordination with the client and active participation of the beneficiaries as well as the project stakeholders.

**Chapter-3** explains purpose of Monthly Monitoring Report (MMR). This current MMR covers the period from 1<sup>st</sup> May 2022 to 31<sup>st</sup> May 2022.

Chapter 3 also covers the activities of ME&IE Consultants, carried out during the reporting period which are summarized below:

- Submission of MMR for the previous Month (April 2022)
- Preparation for the 2<sup>nd</sup> Phase of Baseline Survey
- Training of Field Staff for 2<sup>nd</sup> Phase of Baseline Survey
- Preparation of baseline survey field visits plan
- Regular Monitoring of Interventions in the Field
- Data Collection of the Interventions in the Field
- Data acquisition from Client, Data entry, Data cleaning, Data processing and analysis
- Meetings of ME&IE Consultants with Stakeholders about Project Progress / Issues
- Data collection of interventions for MIS/GIS database
- Dashboard data collection and data entry

**Chapter-4** highlights the quarterly work plan for the period of 1<sup>st</sup> April 2022, to 30<sup>th</sup> June 2022. The work plan is consisting of following activities:

- Pre-field Activities
- Field Activities
- ICT Assignment
- Coordination Meetings
- Deliverables

The detail time span for 2<sup>nd</sup> Quarter of year 2022 is provided in the Tentative Work Plan **Annex-A**.

**Chapter-5:** Issues / problems faced by the consultants during the reporting period of the assignment are described in this Chapter.

Table: -ES-1: Compliance Status of Tentative Work Plan during Reporting Period

No.	Activities Planned for the Reporting Quarter		Status
<b>1</b>	<b>Pre-Field Activities</b>		
1.1	Preparation for 2 <sup>nd</sup> Phase Baseline Survey	Complied	
1.2	Internal Meetings of ME&IE Consultants	Complied	
1.3	Training of Field Staff for 2 <sup>nd</sup> Baseline Survey	Complied	
<b>2</b>	<b>Field Activities:</b>		
2.1	Regular Monitoring of Interventions in the Field	Complied	
2.2	Data collection of the interventions in the field	Complied	
2.3	Baseline Survey Phase-II	In progress	
2.4	Online data entry in android-based application	Complied	
<b>3</b>	<b>ICT Assignment:</b>		
3.1	Development / Improvement of website of NPIWC-II	Complied	
3.2	Monitoring online data collection and Data entry	Complied	
3.3	Monitoring Android based Mobile Application under implementation by field staff.	Complied	
3.4	Data collection of interventions in MIS/GIS database	Complied	
3.5	Data cleaning for Dashboard for Project Interventions	Complied	
<b>4</b>	<b>Coordination</b>		
4.1	Meetings of TL ME&IE Consultants with NPC regarding Project Progress / Issues	Meetings conducted on regular basis	
4.2	Meeting of DTLs with respective DTL of NWMC	Meetings conducted on regular basis	
4.3	Internal Meetings of ME&IE Consultants	Weekly meetings conducted on regular basis	
<b>5</b>	<b>Deliverables:</b>		
5.1	Monthly Monitoring Reports (MMRs)	15 <sup>th</sup> MMR (Mar. 2022)	Submitted
		16 <sup>th</sup> MMR (Apr. 2022)	Submitted
		17 <sup>th</sup> MMR (May. 2022)	To be submitted in stipulated time
5.2	Quarterly Monitoring & Evaluation Report (QM&ER)	QM&ER Jan-Mar 2022	Submitted
		QM&ER Apr-June 2022	Will be submitted in stipulated time
5.3	Baseline Survey Report Ph-II (Draft)	Data collecting in field in progress. Report will be submitted in stipulated time	

## CHAPTER-1: PROJECT INTRODUCTION

### 1.1 PROJECT PROFILE

This section covers the following detail of the project:

<b>Project Name:</b>	National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)
<b>Project Areas:</b>	Punjab, Khyber Pakhtunkhwa, Balochistan, Gilgit Baltistan, Azad Jammu & Kashmir, and Islamabad Capital Territory (ICT)
<b>Sponsoring Agency</b>	Ministry of National Food Security & Research
<b>Executing Agencies (EAs):</b>	Following are different EAs: Federal Project Management Unit (FPMU),  i. DGA OFWM Punjab ii. DG OFWM KP iii. DGA OFWM Balochistan iv. Director Irrigation and Small Dams, AJ&K v. Director WM, GB vi. Director Agriculture Extension Services (AES) ICT
<b>Project Period:</b>	5 Year (2019-2024)
<b>Total Project Cost:</b>	Rs. 154,542.355 million (Umbrella PC-1, including Sindh)
<b>ME&amp;IE Consultancy Period:</b>	4 years
<b>ME&amp;IE Consultant:</b>	JV of G3 Engineering Consultants (Pvt.) Ltd., EASE PAK Engineering services (Pvt.) Ltd., Centre for Social Research and Development (CSRD), ADA Consultants Inc. Canada, and S&S Associates.
<b>ME&amp;IE Consultant Mobilized:</b>	November 20, 2020

### 1.2 PROJECT DESCRIPTION

Project description includes followings i.e., the project development objectives, project objectives, project benefits, and project components, etc.

#### 1.2.1 Project Development Objectives

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

#### 1.2.2 Project Objectives – General & Quantitative

Following are the project general and 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' Outputs and Impacts:

The quantitative objectives' outputs and impacts 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) , 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 beneficiaries of the project 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 be benefitted due to Water Users' Associations (WUAs) in terms of cooperative management of irrigation water. Moreover, 14,932 farmers will be directly benefitted 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 project comprises four components.

##### **C1: ORGANIZATION OF WATER USERS ASSOCIATIONS:**

Establishment/ reactivation of Water Users Associations (WUAs) through community driven implementation approach. Following are the scope of WUAs:

- 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 adopting the following criteria:

- 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:

The project will construct 14,932 Water Storage Tanks (WSTs). Following will be the benefits of 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, Nallahs etc.
  - Rainfall runoff over agricultural catchment during rainy season
  - Tube-wells and dug wells of low flows
  - Tail-waters from agricultural fields
- iv) Regulate the flows so that it can be used efficiently when needed at large flow rates.

### C4: PROVISION OF LASER LAND LEVELING UNITS:

Provision of 11,610 Laser Land Leveling (LLL) units to the farmers; the component is strengthening LLL services in the country through provision of LLL 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 the year 2019-20 to 2023-24, presented in **Figure-1.1**. Whereas, the targets for each Province/Zone (excluding Sindh) are presented in **Figure-1.2**.

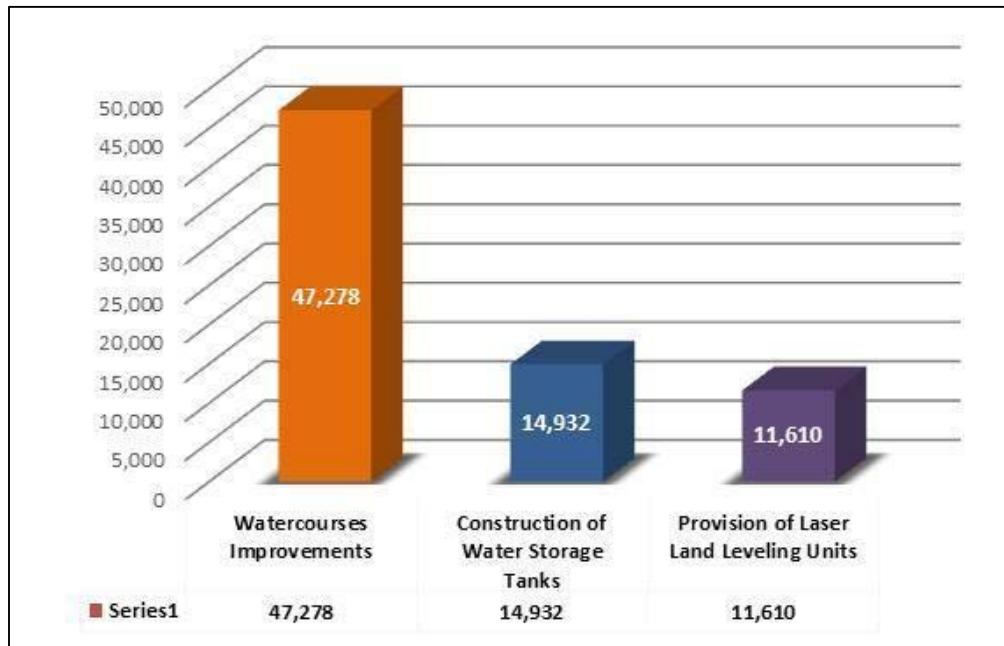


Figure 1.1: NPIWC-II Project WCs Improvement, WSTs, and LLL Targets in Pakistan.

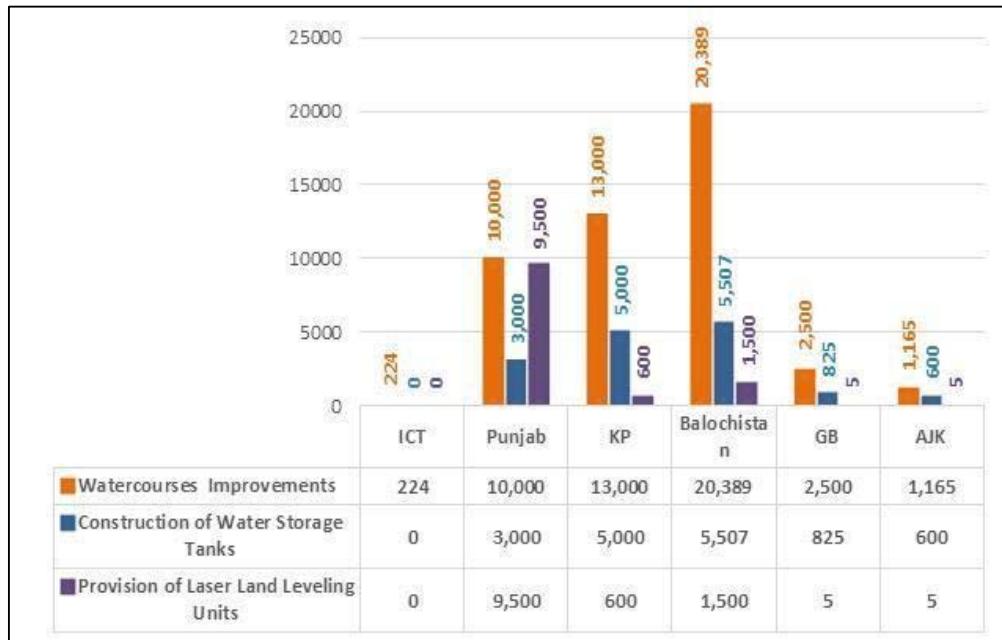


Figure 1.2: Zone-Wise WCs Improvement, WSTs, and LLL Target

## CHAPTER 2: SCOPE AND SERVICES OF ME&IE CONSULTANTS

The ME&IE Consultants' services are designed to be provided through a multi-disciplinary team of qualified professionals. All the firms in the joint venture have rich experience in the field of monitoring and evaluations (M&E). 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 consultants are developing a "State-of-the-Art Management Information System" (MIS) with "Geographical Information System" (GIS) focused for NPIWC-II to monitor progress on project interventions and to carry out an effective monitoring process. The MIS is helping decision makers to make informed decisions.

### 2.1 OBJECTIVES OF CONSULTING SERVICES

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

### 2.2 SCOPE OF CONSULTING SERVICES

The ME&IE Consultants are responsible for monitoring, evaluation and impact evaluation (ME&IE), and in this context are carrying out the following activities:

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

mobilization, financial and administrative sustainability of water users' associations and ensuring the maintenance of watercourses, water storage tanks and laser land Levelers,

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

The said requirement is based on the following functional features:

- *Development of a GIS database with all spatial layers related to activities being undertaken under the project*
- *Give technical assistance for up-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 OF CONSULTANTS

The monitoring strategy planned to be followed by ME&IE Consultants is briefly described in **Table-2.1**. However, detailed methodology and procedures to carry out the ME&IE of the project interventions were explained in Chapter 6 of Inception Report.

Table 2.1: Monitoring Strategy for ME&IE Activities

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

			<p>reach and tail reach.</p> <ul style="list-style-type: none"> <li>• The measurements will be done through current meters.</li> <li>• 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.</li> </ul>
			<p><b>Water Savings on WSTs</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The assessment will be done either by readings on the pump gauge or periodically interviewing the farmer.</li> <li>• 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.</li> </ul> <p><b>Water savings due to Laser Land Leveling</b></p> <ul style="list-style-type: none"> <li>• Water savings at field level will be assessed through farmers' interviews.</li> <li>• The impact survey form will include questions to be asked from the farmers who got their land leveled:             <ul style="list-style-type: none"> <li>- In how much time an acre was irrigated before watercourse improvement and land leveling</li> <li>- In how much time an acre is irrigated after watercourse improvement with land leveling</li> </ul> </li> </ul> <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"> <li>• WUAs is functional</li> <li>• Holds regular meetings and keep record of them</li> <li>• Makes decisions democratically</li> <li>• The participation in the organization is voluntary</li> <li>• It is financially and administratively sustainable</li> <li>• Takes steps and ensures maintenance of watercourses, WSTs and laser land leveler</li> </ul>
5	Economic benefits assessment for agriculture	Team Leader, Socio- Economist and Agricultural Economist	<ul style="list-style-type: none"> <li>• As indicated at serial No. 1, Agriculture data will be collected before (baseline) and after (impact) the watercourse improvement and WSTs construction.</li> <li>• In both the surveys same forms will be used and same sampled farmers will be interviewed</li> <li>• Data on variables such as crop yields, irrigated area, cropping pattern, cropping intensity, farm income and employment will be collected and analyzed</li> <li>• The difference between before and after situations minus natural growth will be assumed as economic benefits to the agriculture</li> </ul>
6	Impact evaluation-on the economy	Team Leader, Agricultural Economist and	<ul style="list-style-type: none"> <li>• The results of the baseline and impact surveys will be used to quantify impact on the economy</li> <li>• Additional food produced due to the project will be</li> </ul>

		Socio-Economic Expert	<p>estimated. It is benefitted towards food security</p> <ul style="list-style-type: none"> <li>Project costs and benefits will be compared in economic and financial terms to carry out economic and financial analysis.</li> <li>Parameters like IRR, NPV and BCR will be estimated.</li> </ul>
7	Impact evaluation-on the stakeholders	Team Leader, Agricultural Economist and Socio-Economic Expert	<ul style="list-style-type: none"> <li>Analysis as in serial 6 will be carried out with reference to various stakeholders, like community, government, farmers, etc.</li> </ul>
8	Spot checking	Team Leader, Deputy Team Leaders & Field teams/Engineers.	During the field visits for WUAs baselines impacts of Watercourses, WSTs and laser land leveling 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"> <li>The processed data for all the interventions will be fed to the MIS/GIS database.</li> <li>Client's field staff and field teams of consultants will furnish data of their activities.</li> <li>The ME&amp;IE will assist in developing mobile application for this purpose</li> <li>From this data reports will be generated for process monitoring</li> <li>All interventions will be fully (100%) covered.</li> </ul>
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"> <li>The State-of-the-art MIS / Progress Monitoring Model will be developed for NPIWC-II.</li> <li>Customized forms will be developed to collect data from the implementing teams on-site for progress monitoring</li> <li>These forms will be made available to the teams on smart phones through an android application</li> <li>The teams will be adequately trained to use the application</li> <li>Data on physical and financial stages with dates will be fed to the system for process monitoring</li> <li>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</li> <li>The system will be maintained on GOOGLE server so that it is accessible by the management from anywhere in Pakistan and abroad</li> <li>Custom reports will be possible as the user demands / desires</li> <li>The results could be displayed on small as well as large screens.</li> </ul>
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 are further being enhanced and refined in consultation with the client as well as the stakeholders.

The improvement of indicators is a continuous process throughout the project implementation in the light of real and on ground situations.

## CHAPTER 3: CONSULTANTS' ACTIVITIES DURING THE REPORTING MONTH

Routine field visits & monitoring of project interventions in the field remained continued by ME&IE consultants, during the reporting month. Consultants also carried out different in-house activities related to ME&IE assignment:

### 3.1 SUBMISSION OF MONTHLY MONITORING REPORT (MMR)

Consultants submitted sixteenth MMR for the month of April 2022 (1<sup>st</sup> April 2022 to 30<sup>th</sup> April 2022) as per contract obligations.

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. The activities include but are not limited to pre-field/in-house activities, field monitoring activities i.e., monitoring of project interventions, ICT assignments including monitoring of online data collection in the field, and development/improvement of project dashboard and website etc. All the activities during the reporting period are carried out as per quarterly work plan of the consultants.

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

### 3.2 START OF BASELINE SURVEY PHASE-II.

Consultants improved / refined the monitoring tools in light of the lessons learnt during Baseline Survey Phase-I. Consultants also updated the ODK android based application for data collection, and provided training to field survey teams for the field data collection. Data collection for Baseline Survey Phase-II is in progress. Field teams are also conducting routine field monitoring of the project intervention as part of the consultants' assignment. Field teams uploaded the data in the ODK which was regularly monitored by consultants' ICT team.

### 3.3 REGULAR MONITORING / FIELD VISITS BY ME&IE CONSULTANTS

Detail of regular monitoring / field visits by field teams of all the zonal offices during the monitoring month is given below:

#### 3.3.1 Regular Monitoring / Field Visits by Zonal Office Islamabad Capital Territory (ICT)

During the reporting period ICT Zone team carried out different in-house as well as field visits / monitoring activities, like finalization of revised MTs, preparation for Baseline Survey Phase-II, and training of the field team.

The ICT team prepared the field visit plan and moved to the field for monitoring and data collection for Baseline Survey Phase-II. Detail of field visits of ICT ME&IE team is given below:

#### Field Visit Report of AJK

ICT ME&IE Team visited areas of AJK district Bhimber, division Mirpur on 28<sup>th</sup> of May 2022. The visit was coordinated with Project Director AJK, who deputed his field staff to facilitate the ME&IE Consultants to conduct this visit. The visits aimed to collect data for Baseline Survey Phase-II, Monitoring and Impact evaluation of project interventions NPIWC II. The following locations were visited with the support of Assistant Directors of the Line Department.

#### Field Team visited the following Interventions:

S#	WC/ WST Name/Id	District	Date of Visit
1	Dhandr Kalan	Bhimber	28 <sup>th</sup> May 2022
2	Pithorani		
3	Gujar kalan 1		
4	Gujar Kalan 2		

The ME & IE team also conducted a meeting with the Assistant Director of Small Dams and Irrigation Department Mirpur. ME&IE team collected the files of the targeted watercourses and a WHS to be visited during this visit.

### 3.3.1.1 Site Visits / Monitoring in AJK Zone

#### i) Field Visit to Watercourse in Village Dhandr Kalan Bhimber, AJK of 28 May 2022

<b>Scheme</b>	Watercourse
<b>Farmer Name</b>	Choudry Muhammad Anwar
<b>Name of village:</b>	Dhandr Kalan
<b>Chairman WUA:</b>	Choudry Muhammad Anwar
<b>District:</b>	Bhimber
<b>Province</b>	Ajk
<b>Source of irrigation:</b>	Tube Well
<b>Type of watercourse:</b>	PCPS
<b>Length of the watercourse:</b>	2348 feet
<b>Command area of watercourse:</b>	7.5 Acres
<b>No of beneficiaries:</b>	3
<b>Cropping intensity increased</b>	Cropping intensity did not increase. However, crop production has been increased significantly.
<b>Equity in water distribution increased</b>	From the start they have their own tubewell and they tend to use plastic pipe for irrigation of landholdings. However, this pipe became non-useable after one season of crops. Now they are happy because they can get speedy water delivery to end portion of land and they don't need much labour for handling plastic pipe or else.
<b>Reduction in water disputes/thefts</b>	Previously tube-well used to run for longer hours, however, now working hours are reduced. There were no disputes at all from the beginning.

The team visited village Dhandr Kalan and met with the beneficiaries of Dhandr Kalan watercourse. The beneficiary is the chairman of WUA of Dhandr Kalan.

The beneficiary of Dhandr Kalan said he got the best production of wheat this year compared to previous years due to the improvement of watercourses by the OFWM Department. Some other factors such as quality of seed, fertilizers and other agricultural practices were also involved. Maize production was also increased. Before this intervention he was getting 150-200 Maund/ Acre maize fodder and after intervention now he is getting 300-350 mound/Acre. He has also installed tube-well to get water for irrigation. He also told the team about his livestock, he had 20-22 buffalos and four cows. Apart from agriculture the beneficiary was also involved in real estate business. Pictorial view is given in Picture 3.1 & 3.2.



Picture 3.1: Tube-well Installed by Farmer at Dhandr Kalan, Bhimber, AJK



Picture 3.2: Field team with beneficiary of Watercourse at Dhandr Kalan, Bhimber AJK

**ii) Field Visit to Water Harvesting System in Village Oithorani Bhimber AJK 28 May 2022**

After village Dhandr Kalan the team move towards another village "Pithorani" to visit their targeted intervention i.e. Water Harvesting System. The water harvesting system was about 2 km away from the residence of the farmer. Farmer said that the main crops being grown by him are Wheat and Millet. He availed the opportunity of construction of water harvesting system with the support of OFWM Department and constructed a water harvesting system for storage of water.

He said that other farmers of the village are also getting inspired from his water harvesting system and due to its benefits they are also constructing same interventions on their own.

Detail of WHS Pithorani 2 is as follows:

<b>Scheme</b>	WHS
<b>Farmer Name</b>	Muhammad Abdul Rehman
<b>Name of village:</b>	Pithorani
<b>Chairman WUA:</b>	Muhammad Abdur Rehman
<b>District:</b>	Bhimber
<b>Province</b>	Ajk
<b>Source of irrigation:</b>	Rainwater
<b>Command area of water Harvesting System:</b>	3.625 Acres (32 Kanal)
<b>No of beneficiaries:</b>	3
<b>Cropping intensity increased</b>	Not measured
<b>Equity in water distribution increased</b>	No Problems related to Equity in Water Distribution.
<b>Reduction in water disputes/thefts</b>	No problems related to water theft

Pictorial view of visit is given in Picture 3.3 & 3.4.



Picture 3.3: View of WHS Pithorani, Bhimber, AJK



Picture 3.4: Field Team with beneficiaries of WHS, Pithorani, Bhimber, AJK

**iii) Field Visit to Watercourse Naseer Ahmed in Village Kokran Gujran, Bhimber AJK 28 May 2022**

ME&IE Team visited the village Khokran Gujran on 28<sup>th</sup> May 2022 along with AD Bhimber M. Jabir. They met with the beneficiary Naseer Ahmed, who helped the team to visit his farm land and watercourse. The team observed following information in the field:

<b>Scheme</b>	Watercourse
<b>Farmer Name</b>	Naseer Ahmed
<b>Name of village:</b>	Kokran Gujran
<b>Chairman WUA:</b>	Naseer Ahmed
<b>District:</b>	Bhimber
<b>Province</b>	Ajk

<b>Source of irrigation:</b>	Tube Well
<b>Type of watercourse:</b>	PCPS
<b>Length of the watercourse:</b>	340 feet
<b>Number of segments:</b>	
<b>Command area of watercourse:</b>	5.25 Acres
<b>No of beneficiaries:</b>	3
<b>Cropping intensity increased</b>	Not measured due to new lining.
<b>Equity in water distribution increased</b>	No Problems related to Equity in Water Distribution.
<b>Reduction in water disputes/thefts</b>	No problems related to water theft

Farmer's current land holding is 42 Kanal and all the land is suitable for cultivation. He has hired two permanent labors for farming activities. Female participation in farming activities was at the level of decision making where they were involved regarding crop selection etc., however, they were not involved in any labour activities. Females are well aware of the crops and the land held by them, they are active in decision making related to the land sale, purchase or tenancy condition etc.

The type of the watercourse is the precast parabolic segment. The source of the watercourse is only Tube well. They had livestock and the consumption pattern of food was given by the beneficiary. Pictorial view of visit is given in Picture 3.5 & 3.6.



Picture 3.5: Livestock at Khokran Gojran, Bhimber, AJK



Picture 3.6: PCPS Watercourse at Khokran Gujran, Bhimber, AJK

### 3.3.2 Regular Monitoring / Field Visits by Zonal Office Punjab

The Monitoring/Baseline survey pertains to the intervention of the project viz improvement of watercourse, Water User Association, construction of Water Storage Tank and Laser Land Leveler. Such surveys are carried out from time to time as a part of regular activity of ME&IE Consultants. The activities relate to baselines Survey, regular monitoring and impact wherever it is visible. The overall findings about unit of interventions visited by the field teams are reflected in the form of:

- 1) Field Visits of target intervention
  - i. Improvement of Watercourses
  - ii. Water Users Association
  - iii. Construction of Water Storage Tank
  - iv. Provision of Laser Land Leveler
- 2) Meetings with Field Officers and Staff of OFWM
- 3) ME&IE Consultant observation

During the period under review, data were collected on the undermentioned aspects of an intervention.

- Brief profile of the various intervention sites visited.
- Interaction with beneficiaries
- ME & IE Consultant Field Teams Observations views of beneficiaries / OFWM.

### 3.3.2.1 Site Visits / Monitoring in Punjab Zone

#### Visit to D.G Khan (22.05.2022 to 27.05.2022)

Following were the Team Members for the visit of D.G. Khan

- Mr. Rizwan Suleman Field Team In-Charge
- Mr. Norman Rashid Field Team Engineer
- Mr. Sohail Ahmad Field Team Engineer
- Mr. Abd Ur Raoof Saad Field Team Engineer

Following are the sites visited during the month of April 2022 in Punjab Zone:

#### iv) Field Visit to D. G. Khan WC No. 59100-TR on 23 May 2022 – Punjab

Watercourse No	59100-TR	
Type of Watercourse	Additional	
Chak No/Village	Basti Milana	
District and Tehsil	D.G Khan, kot Chutta	
Name of Distributary	Paigan	
Type of Moga	Open Flume	
	Head	-

Measured Discharge Before Improvement	Middle	-
	Tail	-
Sanctioned Discharge	102 LPS	
Tube well Discharge (if any)		-
Designed Discharge	347 LPS	
Culturable Command area (Acres)	566 Acres	
Total No of water Users	16	
Estimated lining Length	1289 M	
Status	FCR	

Pictorial view of visit is given in Picture 3.7.



Picture 3.7: ME&IE Field Team visiting and measuring Watercourse No. 59100-TR in the presence of Chairman WUA

Table 3.1: List of Farmers, their locations on WC & tenure status on WC 59100 TR-Punjab on 23/5-2022

Name of Farmer	Location of WC	Area (Acres)				
		Owned	Rented	Rented Out	Operated Area	
Fahad Mehmood	Head	5	8	-	12	
Mouj Ali	Head	-	-	-	-	
Nadir Hussain	Middle	-	8.5	--	8.5	
Saleem Ashraf	Middle	2.5	12.5	-	15	
Ch. M Zahid	Tail	12.5	-	-	12.5	Picture 3.8: Data Collection from Beneficiary of Watercourse regarding Baseline

#### v) Field Visit to D. G. Khan WC No. 19288-L on 27 May 2022 – Punjab

Watercourse No	19288-L	
Type of Watercourse	Regular	
Chak No/Village	Ramin	
District and Tehsil	D.G Khan, D.G Khan	
Name of Distributary	Lower Kalla	
Type of Moga	Pipe Outlet	
Measured Discharge Before Improvement	Head	-
	Middle	-
	Tail	-
Sanctioned Discharge	43 LPS	

Tube well Discharge (if any)	35 LPS
Designed Discharge	71 LPS
Culturable	-
Command area (Acres)	
Total No of water Users	5
Estimated lining Length	850 M

View of visit is given in Picture 3.9.



Picture 3.9: View the site of the watercourse

Table 3.2: List of Farmers, their locations on WC & tenure status on WC 19288-L-Punjab on 23 May 2022

Name of Farmer	Location on WC	Area/Acres			
		Owned	Rented In	Rented Out	Operated Area
Ghulam Abbas	Head	4.6	-	-	4.6
Ghulam Mujeeb	Head	5	--	--	5
Faiz Hussain	Middle	9.5	-	-	9.5
M. Ramzan	Middle	33.5	-	-	33.5
Menzor Hussain	Tail	4.5	-	-	4.5



Picture 3.10: Data collecting from the beneficiaries on ODK

vi) Field Visit to D. G. Khan WC No. 11470-L on 26 May 2022 – Punjab

Watercourse No.	11470/L
Type of Watercourse	Additional
Chak No/Village	Hadwar
District and Tehsil	Taunsa Sharif , D.G Khan
Name of Distributary	NA 189
Type of Moga	AOSM
Measured Discharge Before Improvement	Head - Middle - Tail -
Sanctioned Discharge	47 LPS
Tube well Discharge (if any)	-
Designed Discharge	100 LPS
Culturable	260
Command area (Acres)	
Total No of water Users	20
Estimated lining Length	743
Pictorial view of visit is given in Picture 3.11.	



Picture 3.11: ME&IE consultants visit to site

**Table 3.3: List of Farmers, their locations on WC & tenure status on 11470-L on 23 May 2022 – Punjab**

Name of Farmer	Location on WC	Area/Acres			Operated Area	
		Owned	Rented In	Rented Out		
Ghulam Hadi	Head	4.64	-	-	4.64	
Abdul Samad	Head	9.5	-	-	9.5	
Dr. Mehmood	Middle	33.5	-	-	33.5	
Lal Gul	Tail	5	-	-	5	
Jan Gul	Tail	4.5	-	-	4.5	
Ghulam Hadi	Head	4.64	-	-	4.64	<i>Picture 3.12: Collect the general observation regarding watercourse</i>

#### Field observations of watercourse

- Wara Bandi at the watercourse was Pakki
- Land rent before improvement of the watercourse was Rs 26000 to Rs 28000 per acre. Now it has been raised to Rs 32,000 to Rs 35,000 per acre.
- Most of the farmers interviewed were the owners.
- Land was of Halki Mera type.
- No Water logging and salinity was found at the site.
- Groundwater was fit for irrigation.
- Major crops were Wheat, Cotton, Fodder e.g. Maize, Berseem, Soghrum etc.
- Farmer reported the behavior of the OFWM staff good/supportive
- Before the improvement of watercourse cleaning of watercourses particularly weeds were removed 8 – 10 times per year. After improvement weeds cleaning of watercourses was carried out 2 – 3 times.
- Time consumed to fill one acre before improvement was 4 to 5 hours now it has been reduced to 2 to 2.5 hours.
- Reduction in labor because before construction of watercourse water theft / litigation occurred now labor to look after the watercourse in the field has been reduced significantly.
- Due to the lining of Watercourse there is
  - Increase of water flow tube well water consumption has been reduced.
  - Before the improvement of Watercourse about 50% of water was lost in the field

now these losses have been reduced significantly.

- Most of the farmer were happy they demanded the lining length should be increased upto 70%.
- Before improvement of Watercourse yield of wheat up 30 to 35 Maund /Acre now it has 40 Maund/ Acre. Although sudden increase in temperature affects their yield and grain size as well but still an increase in yield is noticed.
- No change in cropping pattern was observed.

#### vii) Field Visit to D. G. Khan Water Storage Tank Muhammad Zareef on 24 May 2022 – Punjab

<b>WST Owner:</b>	Muhammad Zareef
<b>Name of village:</b>	Bajha
<b>Tehsil &amp; District:</b>	D.G khan, Koh-e-Suleman
<b>Source of irrigation:</b>	Tube well
<b>The shape of the water storage tank:</b>	Trapezoidal
<b>Size of water storage tank:</b>	20 x 20
<b>Depth of WST:</b>	1.89
<b>Command area of water storage tank:</b>	4 Acre
<b>No of beneficiaries:</b>	1
<b>Name of the crops</b>	Wheat / Maize also citrus orchard on 3 acres

Visit of ME&IE Field team is depicted in Picture 3.13 & 3.14.



Picture 3.13: View of Water Storage Tank of Mr. Zareef in Punjab

viii) Field Visit to D. G. Khan Water Storage Tank Muhammad Sharif on 24 May 2022 – Punjab

<b>WST Owner:</b>	Muhammad Sharif
<b>Name of village:</b>	Bajha
<b>Tehsil &amp; District:</b>	D.G khan, Koh-e-Suleman
<b>Source of irrigation:</b>	Tube well
<b>The shape of the water storage tank:</b>	Trapezoidal
<b>Size of water storage tank:</b>	14.17x14.30
<b>Depth of WST:</b>	1.90
<b>Command area of water storage tank:</b>	4 Acre
<b>No of beneficiaries:</b>	1
<b>Name of the crops</b>	Wheat / Maize



Picture 3.14: Data collection from the beneficiaries at his WST

ix) Field Visit to D. G. Khan Water Storage Tank Muhammad Babar Ashraf on 24 May 2022 – Punjab

<b>WST Owner:</b>	Muhammad Babar Ashraf
<b>Name of village:</b>	Vehoa
<b>Tehsil &amp; District:</b>	D.G khan, Taunsa Sharif
<b>Source of irrigation:</b>	Tube well

<b>The shape of the water storage tank:</b>	Trapezoidal
<b>Size of water storage tank:</b>	20x20
<b>Depth of WST:</b>	1.83
<b>Command area of water storage tank:</b>	10 Acre
<b>No of beneficiaries:</b>	1
<b>Name of the crops</b>	Land is barren it is being brought under cultivation

Picture of field visit is given in Picture 3.15.



Picture 3.15: Monitoring of Water storage tank of Mr. M Babar Ashraf with ADA, and owner

**Field Observation of Water Storage Tank**

- Before the construction of WST, the land was barren and its terrain was uneven.
- It is also very difficult to travel in this area.
- Farmer did not grow any crop because its soil consists of gravel. It was not possible to grow any crop in this area. For the last 2 to 3 years, farmers store a Rain/Flood water in the hilly area.
- Rain/Flood water brings Fertile soil with it. This fertile soil makes a layer on the surface of this land. In each year there is an increase in the thickness of the soil layer. Farmer continued this process for 2 to 3 years. after this farmer was able to grow any crop on this type of land.
- One of the water storage tank owners

faced shortage of water. He had no proper system to store rain water as well. There are no proper roads.

- OFWM department officials guided about the scheme / program started by Govt of Pakistan for construction of WST on subsidy basis.
- In spite of the fact that his farm is located in hilly area and with the assistance of OFWM department he constructed the Tank and started storage of water.
- He started construction of WST on 15- Jan 2020. Application of water directly to the field with this small capacity tube well but it took 3 to 4 days to fill one acre. That's why due to shortage of water he did not grow any crop. He did not have any system to store rain water.
- After completion of WST, he adds low discharge tube well water into the WST.
- The time consumed to fill one acre after construction of a water storage tank is 3 to 4 hours.
- Mr. Muhammad Zareef the owner of WST was very happy and fully satisfied by the role of OFWM department. because before the construction of WST the land, which was barren now it has been converted into Agricultural land.
- Now after construction of WST he is growing Orchard i.e., citrus but still after 2 years he did not get the Yield. Other main crops are Wheat/ Berseem/ Maize and Soghram.

x) **Field Visit to Laser Land Leveler of Mr. Muzaffar Qasim D.G. Khan on 24 May 2022 - Punjab**

<b>Owner of LLL</b>	Muzzaffar Qasim
<b>District</b>	D.G. Khan
<b>Tehsil</b>	D.G Khan
<b>Quality Of ground Water</b>	Fit for Irrigation
<b>Major Crops</b>	Wheat, Rice, Maize, cotton

View of field visit is given in Picture 3.16.



*Picture 3.16: A general discussion along with the beneficiary of Laser*

xii) **Field Visit to Laser Land Leveler of Mr. Muhammad Idrees D.G. Khan on 25 May April 2022 - Punjab**

<b>Owner of LLL</b>	Muhammad Idrees
<b>District</b>	D.G Khan
<b>Tehsil</b>	D.G Khan
<b>Quality Of ground Water</b>	Fit for irrigation
<b>Major Crops</b>	Wheat, Rice

View of field visit is given in Picture 3.17.



*Picture 3.17: ME&IE Field Team Inspecting the Laser Land Leveler on site along with beneficiary*

xii) **Field Visit to Laser Land Leveler of Mr. Muhammad Aslam, D.G. Khan on 24 May 2022 - Punjab**

<b>Owner of LLL</b>	Muhammad Aslam
<b>District</b>	D.G Khan
<b>Tehsil</b>	D.G Khan
<b>Quality Of ground Water</b>	Fit for irrigation
<b>Major Crops</b>	Wheat, Rice, Maize

ME&IE Field Team getting data from farmer shown in Picture 3.18.



Picture 3.18: Discussion / data collection from Beneficiary regarding Laser Land Leveler



Picture 3.20: Monitoring of Field Operations of LLL

xiii) Field Visit to Laser Land Leveler of Mr. Muhammad Zahid, D.G. Khan on 23 May 2022 - Punjab

Owner of LLL	Muhammad Zahid
District	D.G Khan
Tehsil	Kot Chutta
Quality Of ground Water	Fit for irrigation
Major Crops	Wheat, Cotton

Picture 3.19: A view of Laser Land Leveler

xiv) Field Visit to Laser Land Leveler of Mr. Ghulam Hussain, D.G. Khan on 24 May 2022 - Punjab

Owner of LLL	Ghulam Hussain
District	D.G Khan
Tehsil	D.G Khan
Quality Of ground Water	Fit for irrigation
Major Crops	Wheat, Rice

xv) Field Visit to Laser Land Leveler of Mr. Abdul Majeed, D.G. Khan on 26 May 2022 – Punjab

Owner of LLL	Abdul Majeed
District	D.G Khan
Tehsil	D.G Khan
Quality Of ground Water	Fit for irrigation
Major Crops	Wheat

Picture 3.21: Discussion on visiting the unit of LLL

xvi) Field Visit to Laser Land Leveler of Lalan Mei, D.G. Khan on 27 May 2022 – Punjab

Owner of LLL	Lalan Mei
District	D.G Khan
Tehsil	Taunsa Sharif
Quality Of ground Water	Fit for irrigation
Major Crops	Wheat, Rice

Picture 3.22: Inspection of LLL by ME&IE consultants

### Field Observation of LLL

- Most of the Owners /service providers were happy about the benefits of LLL. They praised the OFWM department and appreciated their role and cooperation.
- Muhammad Aslam the service provider was not satisfy with the quality of different parts of LLL. According to him he purchased LLL of cross field company and observed that:
  - Tyres were not good
  - Transmitter / Charger was not of good quality
  - They were charging about Rs. 1400 per hour for land leveling.

### Visit to Bahawalnagar (26.05.2022 to 31.05.2022).

Following were the Team Members for Bahawalpur Visit:

- Mr. Muhammad Zubair, Field Team In-Charge
- Mr. Misbah Ur Rehman, Field Team Engineer
- Mr. Umar Farooq Hammad, Field Team Engineer

#### i) Field Visit to Bahawalnagar WC No. 17132 R on 27 May 2022 – Punjab

Watercourse No.	17132 R	
Type of Watercourse	Additional	
Chak No/Village	Mosa Bhatta	
District and Tehsil	Bahawalnagar, Bahawalnagar	
Name of Distributary		
Type of Moga		
Measured Discharge Before Improvement	Head	127
	Middle	125
	Tail	100
Sanctioned Discharge	100 LPS	
Tube well Discharge (if any)	20 LPS	
Designed Discharge	125 LPS	
Culturable	454 Acres	
Command area (Acres)		
Total No of water Users	-	
Estimated lining Length	-	



Picture 3.23: Team visit to the site of watercourse

#### ii) Field Visit to Bahawalpur WC No. 5250 R on 27 May 2022 – Punjab

Watercourse No.	5250 R	
Type of Watercourse	Regular	
Chak No/Village	Manohar Garh	
District and Tehsil	Bahawalnagar	
Name of Distributary	Takhat Mahal	
Type of Moga		
Measured Discharge Before Improvement	Head	-
	Middle	-
	Tail	-
Sanctioned Discharge	67	
Tube well Discharge (if any)	-	
Designed Discharge	125	
Culturable	349 Acres	
Command area (Acres)		
Total No of water Users	60	
Estimated lining Length	1850 M	



Picture 3.24: A view of Mogha Point of the watercourse



Picture 3.25: View of watercourse

iii) Field Visit to Bahawalpur WC No. 1310-R on 28 May 2022 – Punjab

Watercourse No.	1310/R
Type of Watercourse	Regular
Chak No/Village	91/6R
District and Tehsil	Bahawalnagar
Name of Distributary	6/R
Type of Moga	Pipe Outlet
Measured Discharge Before Improvement	Head - Middle - Tail -
Sanctioned Discharge	36.803 LPS
Tube well Discharge (if any)	-
Designed Discharge	210 LPS
Culturable Command area (Acres)	342 Acres
Total No of water Users	18
Estimated lining Length	1933 M

iv) Field Visit to Bahawalpur WC No. 13880-R on 28 May 2022 – Punjab

Watercourse No.	13880/R
Type of Watercourse	Regular
Chak No/Village	Ali Gohar 325
District and Tehsil	Bahawalnagar
Name of Distributary	Mahar Minor
Type of Moga	-
Measured Discharge Before Improvement	Head - Middle - Tail -
Sanctioned Discharge	67 LPS
Tube well Discharge (if any)	50 LPS
Designed Discharge	95 LPS
Culturable Command area (Acres)	212 Acres
Total No of water Users	8
Estimated lining Length	1245 M



Picture 3.26: General discussion with the Beneficiaries at the watercourse

v) **Field Visit to Bahawalpur WC No. 77560-L on 28 May 2022 – Punjab**

<b>Watercourse No.</b>	77560/L	
<b>Type of Watercourse</b>	Additional	
<b>Chak No/Village</b>	Jhullan Arian	
<b>District and Tehsil</b>	Bahawalnagar	
<b>Name of Distributary</b>	Dhudi	
<b>Type of Moga</b>	-	
<b>Measured Discharge Before Improvement</b>	Head	110
	Middle	95
	Tail	80
<b>Sanctioned Discharge</b>	80 LPS	
<b>Tube well Discharge (if any)</b>	28 LPS	
<b>Designed Discharge</b>	120 LPS	
<b>Culturable</b>	375 Acres	
<b>Command area (Acres)</b>		
<b>Total No of water Users</b>	47	
<b>Estimated lining Length</b>	1659 M	



Picture 3.27: View of Lined watercourse

**Field Observation District Bahawalnagar**

About six farmers/ Beneficiaries were interviewed at each sampled watercourse, 2 Head, 2 Middle, and 2 at Tail. Few farmers were located near the border area. Generally, the ground was unfit for irrigation. Farmers were dependent on canal water and faced a shortage of water. They used to apply tube well water after mixing with the canal they used tube well water in case of emergency. The main findings/observation about Bahawalnagar district are as under:

- Main canals in Bahawalnagar are fordwa

canal (non-perineal canal) and Sadqain (perennial canal)

- Main Crops in Bahawalnagar are Wheat, Cotton, and Rice
- The average yield of wheat per acre about 30 to 35 maund has increase to 40 to 45 maund after improvement of the watercourse
- The yield of cotton was 25 to 27 acre before improvement watercourse whereas now it is about more than 30 maund after improvement as increase in water supply.
- Salinity and waterlogging observed in some area up to 40%
- The water quality is generally brackish in some areas

**3.3.3 Regular Monitoring / Field Visits by Zonal Office KP**

ME&IE consultants of KP Zone provided their input in revised / improved MTs. Consultants have made the Dashboard of KP Zone functional and provided training to staff of the Department.

**3.3.3.1 Follow-up of the Data Collection from OFWM Department**

The ICT team has trained the officials of the OFWM Department on direct entry to the Dashboard. Staff of OFWM is now entering the data of WCs and WSTs Schemes directly to the Dashboard and the KP ICT team is regularly monitoring this process. Any discrepancy noted in the dashboard data, the Consultants' ICT team points out to the OFWM Department for correction accordingly. Moreover, the ICT team continuously remained in close coordination with Client about the progress of data entry to the Dashboard by the OFWM Department.

The Zonal team of KP also participated in regular weekly internal zoom meetings of ME&IE consultants being organized through National Office Islamabad.

**3.3.4 Regular Monitoring / Field Visits by Zonal Office Balochistan**

Monitoring is a regular activity of the ME\*IE assignment of the consultants. Field visits and monitoring of project interventions by the Balochistan Zonal team remained continued during

the reporting month. Consultants also carried out different in-house activities related to ME&IE assignments. The major activities include update of ME&IE Progress by the consultants, finalization of MTs for baseline survey phase-ii, analysis of baseline survey data, coordination meetings with clients and internal meetings with Team Leader and other DTLs of ME&IE Consultants. Detail of activities carried out by the Balochistan ME&IE team are listed below:

#### 3.3.4.1 Updated Progress of Balochistan Zone

##### Overall Progress:

The ME&IE Consultants' Balochistan team monitored 13 watercourses and 39 Water Storage Tanks in Baseline Survey activities. Total benchmarked sites in Baseline Survey are 52 tills to date. The Baseline is being conducted in phase wise and the 2<sup>nd</sup> Baseline Survey is in progress and will continue till the end of 30<sup>th</sup> June 2022. The Balochistan field teams are committed to achieve the targets as per PC-1 subject to targets of each Financial Year should be according to the PC-1 targets.

The Balochistan field teams are also conducting regular monitoring of on-going / completed sites covering all financial years on a monthly basis along with the Baseline Surveys. The Balochistan field team has so far monitored 70 watercourses and 53 Water Storage Tanks. Total 123 sites have been monitored till to date.

Updated status of field visits is given in below table:

Table 3. 4: Updated Progress of Balochistan Zone

Sr. #	District	Baseline / Bench Marked		Regular Monitoring		Total
		WC	WST	WC	WST	
1	Quetta	-	4	10	9	23
2	Pishin	-	4	3	9	16
3	Killa Abdullah	1	1	3	2	7
4	Ziarat	-	-	2	1	3
5	Mastung	1	2	6	4	13
6	Nushki	-	-	2	1	3
7	Sibi	-	-	1	3	4
8	Jhal Magsi	1	4	1	2	8
9	Kachhi	-	8	1	2	11
10	Naseerabad	2	4	12	5	23
11	Jaffarabad	-	-	4	1	5

12	Sohbatpur	3	-	7	-	<b>10</b>
13	Loralai	1	2	1	2	<b>6</b>
14	Duki	-	-	2	1	<b>3</b>
15	Zhab	-	-	3	2	<b>5</b>
16	Kila-Saifullah	2	1	4	1	<b>8</b>
17	Musa khel	-	-	1	1	<b>2</b>
18	Sherani	-	-	2	2	<b>4</b>
19	Khuzdar	1	6	1	1	<b>9</b>
20	Kalat	1	3	4	4	<b>12</b>
<b>Total</b>		<b>13</b>	<b>39</b>	<b>70</b>	<b>53</b>	<b>175</b>

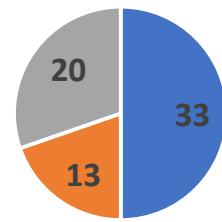
##### Districts Coverage

There are 33 districts in Balochistan, 02 more districts have been notified but their administrative setup yet to be functional. The Balochistan Team has planned to cover all Balochistan as each district has different agriculture setup. All districts have different crops, vegetable, fruits based on their different climate and soil types. Some districts i.e., Quetta, Ziarat, Kalat, Muslim Bagh have extreme cold weather while some districts i.e., Sibi, Naseerabad, Jaffarabad, Sohbatpur, Lasbella lies in extreme hot weather. Due to this reason ME&IEC, Balochistan have planned to cover all Balochistan to give a complete picture of cropping pattern and its intensity, social and gender data, water situation, cost production etc. to make more authentic data.

Balochistan has monitored the sites of 20 districts of 33, the remaining 13 districts to be covered in upcoming months.

Figure 3. 1: Progress of Balochistan Zone

No. of Districts Covered by ME&IEC  
 - Balochistan by March 2022



- Total Districts
- Districts yet to be covered
- Covered / Monitored Districts

### 3.3.4.2 Analysis – Baseline Survey Phase-II

The Balochistan Field Teams have done Baseline Survey of 21 sites in Phase-II till to date. In the first Baseline Survey 31 sites were monitored and covered 08 districts. In Phase-II ME&IEC-Balochistan covered 04 more districts. The Baseline Survey Phase-II is continued and hopefully targets for this phase will be achieved by the end of June 2022.

District wise number of works surveyed/benchmarked in Baseline Survey Phase-II is given in below table:

Table 3. 5: Districts Covered in Balochistan Zone

Districts	WC	WST	Total
Khuzdar	1	6	7
Pishin	0	1	1
Jhal Magsi	1	4	5
Kachi	0	8	8
<b>Total</b>	<b>2</b>	<b>19</b>	<b>21</b>

The analysis of some selected indicators is being defined here:

#### Source of Water for Agriculture in Balochistan:

The twenty-one 21 (sites) were monitored in Baseline Phase-II of 04 districts i.e. Khuzdar, Pishin, Kachi and Jhal Magsi. In all four districts the source of water for agriculture was **Tube well** and water was being pumped out from tube wells for agriculture purposes.

The ME&IEC found that in Balochistan **groundwater extracted through dug wells, tube wells, springs and karezes**. These are the main sources of water for irrigation of orchards and other cash crops besides domestic and industrial uses.

The people of Balochistan have always depended on natural water sources such as **springs, streams, rivers and karezes**. Among these, the karezes are the most persistent; other sources are seasonal and depend on climatic conditions.

Balochistan's water resources comprise **4% groundwater, 39% water share from the Indus Basin, and 57% floodwater**. The groundwater is over-abstracted and requires a comprehensive reassessment

In Balochistan maximum agriculture are being done through tube wells, however in some districts canal system is available i.e. Naseerabad, Jaffarabad, Sohbatpur, Lasbella and some areas of Dera Bugti.

The province is known as the fruit-basket of the country producing **90 per cent of grapes, cherry and almonds, 60 per cent of peach, pomegranate, apricot, 34 per cent of apple and 70 per cent of date fruit**. The province, with diverse climates ranging from temperate to sub-tropical and tropical, produces various fruit crops.

The fruits are the major produce of Balochistan being cultivated on an area of 0.221 Million Hectares (Mha). The water required to raise these orchards is of the order of 1.168 Million Acre Feet (MAF) as shown in below table:

Table 3. 6: Water requirement by Orchards in Balochistan Zone

Fruits	Area (ha)	Annual Water Requirement (mm)	Production (Tones)	Water Requirement (MAF)
Almonds	9,800	350	20,800	0.028
Apple	101,500	625	223,800	0.514
Apricot	26,200	450	187,700	0.095
Banana	1,400	1,700	23,000	0.019
Citrus	1,300	1,050	5,900	0.011
Dates	42,300	1,100	224,900	0.377
Grapes	12,600	350	48,400	0.036
Guava	600	625	2,600	0.003
Mango	1,400	625	6,600	0.007
Peach	9,400	450	18,500	0.034
Pears	100	400	500	0.000
Plums	3,700	450	26,400	0.013
Pomegranate	10,700	350	36,100	0.030
<b>Total</b>	<b>221,000</b>		<b>825,200</b>	<b>1.168</b>

The constant usage of tube wells, the water level is constantly going down. The following table of visited sites showing the current depth of Water Table in different districts/areas:

Table 3. 7: Water Depth in Visited Areas of Balochistan Zone

Sr. #	Districts	Tehsil/UC	Name of Scheme	Depth of Water Table (ft.)
1	Khuzdar	Khuzdar/Baghbana	Ali Akbar	550
2	Khuzdar	Khuzdar/Baghbana -2	Mujeeb-Ur-Rehman	590
3	Khuzdar	Wadh/Wair	Gul Muhammad	620
4	Khuzdar	Wadh	Habib-Ur-Rehman	580
5	Khuzdar	Khuzdar/Zeedi	Fareed Ahmed	400
6	Khuzdar	Karkh/Lakharo Balok	Dr. Abdul Haq	300

7	Khuzdar	Khuzdar/Kathan	Muhammad Tayyab	650
8	Pishin	Bostan/Bostan	Ahmed Khan	700
9	Jhall Magsi	Gandawah/Khari	Safdar Ali Shah	200
10	Jhall Magsi	Gandawah/Khari	Safdar Ali Shah	200
11	Jhall Magsi	Gandawah/Khari	Jan Baig	150
12	Jhall Magsi	Gandawah/Khari	Abdul Rasheed	150
13	Jhall Magsi	Gandawah/Khari	Ghulam Hussain	100
14	Kachhi	Dhadar/Mashkaf	Khuda Bux	250
15	Kachhi	Dhadar/Kot Raisani	Karim Bux	250
16	Kachhi	Dhadar/Mashkaf	Abdul Nabi	250
17	Kachhi	Dhadar/Mashkaf	Munir Ahmed	250
18	Kachhi	Dhadar/Kot Raisani	Mir Mohammad	250
19	Kachhi	Dhadar/Kot Raisani	Mukhtiar Ahmed	250
20	Kachhi	Dhadar/Mashkaf	Moheem Khan	250
21	Kachhi	Dhadar/Kot Raisani	Rasheed Zaman	250

The Government of Balochistan is giving subsidies to the farmers on electricity bills and taking a fixed amount instead of consumption of actual units, but heavy load shading of 12 to 18 hrs is badly affecting the agriculture activities. Therefore, it is suggested that solar panels may be provided to the farmers on subsidies rates as solar panels are an advanced way to acquire energy from the sunlight, this technology not only cuts down the overall usage of electricity in the province but is also a sustainable way for agriculture activities.

#### Area Owned and Cultivable Wasteland:

The following table is showing area owned and cultivable wasteland of monitored sites:

Table 3. 8: Land Owned by farmers in Balochistan Zone

Sr. #	Name of Scheme / Beneficiary	Area Owned (acres)	Cultivable Wasteland (acres)	%
1	Mujeeb-Ur-Rehman	46	0	0%
2	Dr. Abdul Haq	35	0	0%
3	Gul Muhammad	35	5	14%
4	Habib-Ur-Rehman	30	8	27%
5	Muhammad Tayyab	1500	400	27%
6	Ahmed Khan	1000	300	30%
7	Munir Ahmed	60	20	33%
8	Ghulam Hussain	80	30	38%
9	Abdul Nabi	50	20	40%
10	Fareed Ahmed	100	45	45%

11	Ali Akbar	50	25	50%
12	Karim Bux	55	30	55%
13	Mir Mohammad	75	45	60%
14	Rasheed Zaman	80	55	69%
15	Jan Baig	100	70	70%
16	Khuda Bux	120	87	73%
17	Abdul Rasheed	200	153	77%
18	Mukhtiar Ahmed	200	170	85%
19	Moheem Khan	100	85	85%
20	Safdar Ali Shah	1300	1248	96%
21	Safdar Ali Shah	1300	1250	96%

The table shows that in 11 sites, cultivable wasteland is more than 50%. In the last two sites it has been reached up to 96%. However, after initiating the NPIWC-II activities, a lot of improvements are being observed. The ME&IEC, Balochistan will report the impacts of NPIWC-II interventions in the upcoming Endline Survey / Impact Evaluation Report.

#### Education of Farmers / Beneficiaries:

Education gives us the skills, techniques, information and knowledge to know. Therefore, the magnitude of the importance of education in life is huge as well as multifold. The importance of education in life is that it helps everyone develop a good perspective of looking at the world and our society. Education helps us in getting new ideas and exploring new ideas.

Due to illiteracy **farmers are unable to identify whether the seeds are original or spurious and also to analyses the market position of particular agri-inputs (i.e.) seed.**

Literacy is one of the grave issues of Balochsitan, which is running long in Balochsitan. As, the Balochistan stands at the lowest point of literacy rate then other provinces. In Balochistan, on average, there is a primary school after every 30 kilometers, a middle school after every 260 kilometers, and a high school after every 360 kilometers

The following table is shows an overview of the education standards of visited sites.

Table 3. 9: Education Level in Visited area of Balochistan Zone

Sr. #	Name of Farmer / Beneficiary	Education (Years)
1	Ali Akbar	0
2	Gul Muhammad	0

Sr. #	Name of Farmer / Beneficiary	Education (Years)
3	Habib-Ur-Rehman	0
4	Abdul Rasheed	0
5	Ghulam Hussain	0
6	Abdul Nabi	0
7	Munir Ahmed	0
8	Moheem Khan	0
9	Jan Baig	10
10	Ahmed Khan	12
11	Mukhtiar Ahmed	12
12	Rasheed Zaman	12
13	Mujeeb-Ur-Rehman	14
14	Muhammad Tayyab	14
15	Khuda Bux	14
16	Karim Bux	14
17	Mir Mohammad	14
18	Fareed Ahmed	16
19	Dr. Abdul Haq	16
20	Safdar Ali Shah	16
21	Safdar Ali Shah	16

The above table is showing that 08 farmers/beneficiaries out of 21 were found illiterate, they never went to schools. While 13 out of 21 were literate in which 09 farmers were well educated who did graduation or masters in different fields. The overall situation is satisfactory in Balochistan scenario, however, a lot of efforts are required to increase literacy rate in Balochistan, especially in rural areas, so that the agriculture sector could be improved accordingly.

#### Environment: Trees cut down during NPIWC-II intervention:

The below table is showing the status of trees cut down during the construction of WC or WST in NPIWC-II and how many trees planted in lieu of cut down trees:

Table 3. 10: Status of Tree Cutting in visited areas of Balochistan Zone

Sr. #	Name of Scheme / Farmer	Scheme	Trees cut down for Intervention	New Trees planted
1	Ali Akbar	WST	0	0
2	Mujeeb-Ur-Rehman	WST	0	0
3	Gul Muhammad	WST	0	0
4	Habib-Ur-Rehman	WST	0	0
5	Fareed Ahmed	WST	0	0

Sr. #	Name of Scheme / Farmer	Scheme	Trees cut down for Intervention	New Trees planted
6	Dr. Abdul Haq	WST	0	0
7	Muhammad Tayyab	WC	0	0
8	Ahmed Khan	WST	0	0
9	Safdar Ali Shah	WST	0	0
10	Safdar Ali Shah	WC	0	0
11	Jan Baig	WST	0	0
12	Abdul Rasheed	WST	0	0
13	Karim Bux	WST	0	0
14	Abdul Nabi	WST	0	0
15	Munir Ahmed	WST	0	0
16	Mir Mohammad	WST	0	0
17	Moheem Khan	WST	0	0
18	Rasheed Zaman	WST	0	0
19	Khuda Bux	WST	2	2
20	Ghulam Hussain	WST	4	10
21	Mukhtiar Ahmed	WST	4	10

In 18 monitored sites out of 21 sites no tree was cut down. However, some trees had to be cut down on 03 sites and the farmer planted the trees in lieu of cut down trees as well. It was observed that in 01 scheme (Khuda Baksh) the set protocol regarding planting the trees was not followed. In this scheme only 02 was planted in place of 02 cut down trees. The field teams advised the farmer to follow the set protocols regarding cut down trees and planted more trees as per protocols.

#### Status of Water Users Association (WUA) and Female Participation in WUA:

The formation of the Water Users Association (WUA) is a basic requirement of the NPIWC-II project to ensure the participation and ownership of the farmers/beneficiaries. The role and responsibilities of WUA in the program such as:

- Arrange skilled and unskilled labour for construction/ maintenance of earthen water channels, water control structures and lining of critical reaches.
- Procure construction materials for civil works construction.
- Facilitate construction by arranging alternate channel of conveying water during execution.
- Carry out works as per standards and specifications under supervision of OFWM field staff.
- Settle disputes among water users in respect of WC improvement.

- Resolve settlement of disputes arising due to program implementation within the water users.

The below table is showing the status of WUA of visited sites:

Table 3.11: Status of WUAs in visited areas of Balochistan Zone

Sr. #	District	Beneficiary Name	WUA formed	WUA Functional	Female Participation
1	Khuzdar	Ali Akbar	Yes	No	No
2	Khuzdar	Mujeeb-Ur-Rehman	Yes	No	No
3	Khuzdar	Gul Muhammad	Yes	No	No
4	Khuzdar	Habib-Ur-Rehman	Yes	No	No
5	Khuzdar	Fareed Ahmed	Yes	No	No
6	Khuzdar	Dr. Abdul Haq	Yes	No	No
7	Khuzdar	Muhammad Tayab	Yes	No	No
8	Pishin	Ahmed Khan	Yes	No	No
9	Jhall Magsi	Safdar Ali Shah	Yes	No	No
10	Jhall Magsi	Safdar Ali Shah	Yes	No	No
11	Jhall Magsi	Jan Baig	Yes	No	No
12	Jhall Magsi	Abdul Rasheed	Yes	No	No
13	Jhall Magsi	Ghulam Hussain	Yes	No	No
14	Kachhi	Khuda Bux	Yes	No	No
15	Kachhi	Karim Bux	Yes	No	No
16	Kachhi	Abdul Nabi	Yes	No	No
17	Kachhi	Munir Ahmed	Yes	No	No
18	Kachhi	Mir Mohammad	Yes	No	No
19	Kachhi	Mukhtiar Ahmed	Yes	No	No
20	Kachhi	Moheem Khan	Yes	No	No
21	Kachhi	Rasheed Zaman	Yes	No	No

The Water Users Association (WUA) was formed in all 21 monitored sites, but they were not functional. It was also observed that there was no participation of women. As far as the women participation is concerned, the women are not allowed to participate in such activities due to culture barriers throughout Balochistan. However, as per project design, the WUA should be fully functional and should play their role and responsibilities for the success of the project. The department is requested to look into the matter and do needful.

#### Feedback on Revised MTs/ODK – Balochistan Zone

The ME&IE refined the MTs in light of experiences gained in Baseline Survey Phase-I and Regular

Monitoring / Spot Checking. As the agriculture practices are different in all provinces, hence it was decided that all provinces would give their opinion/feedback on refined MTs according to their respective zones. After having lengthy discussions over these MTs among Core Team Members and DTLs/Provincial Head all MTs got finalized in the first week of May 2022. The Second step was to upload these MTs into the ODK for data collection. To complete this task an online session was conducted by the ICT Department for Balochistan Zone on 10<sup>th</sup> May 2022 in which all indicators of MTs were discussed and finalized.



Picture 3.28: View of online session regarding finalization of MTs/ODK – Zonal Office, Quetta.

#### 3.4 COORDINATION MEETINGS OF ME&IE CONSULTANTS

##### 3.4.1 Meetings of ME&IE Consultants Punjab Zone with Stakeholders

It is one of the main components of field activities for ME&IE Consultants to meet and coordinate with stakeholders of the project especially the OFWM Field staff. The consultants were regularly in touch with field staff for getting information/data for the respective officer's area. During the month under review following meetings were held:

###### i) Meeting with Deputy Director Agriculture (OFWM) Office D. G. Khan, Punjab on 23 May 2022

Date:	23 May 2022
Venue:	Deputy Director Agriculture OFWM Office
<b>Participants:</b>	
i)	Muhammad Waqas Arshad Deputy Director Agriculture (OFWM)
ii)	Mr. Rizwan Suleman Field Team In-Charge

- iii) Mr. Noman Rashid Field Team Engineer
- iv) Mr. Sohail Ahmad Field Team Engineer
- v) Mr. Abd Ur Raoof Saad Field Team Engineer

**Meeting Agenda:**

- Briefing of ME & IE Consultants on project activities.
- To review the progress of the project in the respective area and basic data sampled interventions.
- Seek the cooperation/coordination of field staff to conduct the field survey

Pictorial view of the meeting is given in Picture 3.29.



Picture 3.29: ME & IE Consultants team with Deputy Director Agriculture (OFWM). Muhammad Waqas Arshad Dera Ghazi Khan

**ii) Meeting with Assistant Director Agriculture OFWM office Taunsa Sharif, Punjab on 26 May 2022**

<b>Date:</b>	26 May 2022
<b>Venue:</b>	Assistant Director Agriculture OFWM office Taunsa Sharif
<b>Participants:</b>	
i)	Mr. Ghulam Mustafa Assistant Director Agriculture (OFWM)
ii)	Mr. Rizwan Suleman Field Team In-Charge
iii)	Mr. Noman Rashid Field Team Engineer
iv)	Mr. Sohail Ahmad Field Team Engineer
v)	Mr. Abd Ur Raoof Saad Field Team Engineer

**Meeting Agenda:**

- Briefing of ME&IE Consultants on project activities.
- To review the progress of the project in the respective area and basic data sampled interventions.
- Seek the cooperation/coordination of field staff in Tausna Sharif

Pictorial view of meeting is depicted in Picture 3.30.



Picture 3.30: Meeting with Assistant Director Agriculture (OFWM) Taunsa Sharif Ghulam Mustafa regarding the Baseline / Monitoring/ Impact Survey

**iii) Meeting with ADA (Agri) OFWM Koh-e-Suleman, Punjab on 25 May 2022**

<b>Date:</b>	25 May 2022
<b>Venue:</b>	Assistant Director (Agri) OFWM Koh-e-Suleman, District D.G. Khan
<b>Participants:</b>	
i)	Muhammad Anwar Assistant Director Agriculture (OFWM)
ii)	Mr. Rizwan Suleman Field Team In Charge
iii)	Mr. Noman Rashid Field Team Engineer
iv)	Mr. Sohail Ahmad Field Team Engineer
v)	Mr. Abd Ur Raoof Saad Field Team Engineer

**Meeting Agenda:**

- Briefing of ME & IE Consultants on project activities.
- To review the progress of project in the respective area and basic data sampled interventions.
- Seek the cooperation/coordination of field staff

Photograph of ME&IE team with ADA during meeting is given below as Picture 3.16.



Picture 3.31: Meeting of ME & IE Consultants team with Deputy Director Agriculture (OFWM) Koh-e-Suleman Muhammad Anwar

**iv) Meeting with Deputy Director (Agri) OFWM Bahawalpur, Punjab on 26 May 2022**

<b>Date:</b>	26 May 2022
<b>Venue:</b>	Deputy Director (Agri.) OFWM Bahawalpur, Punjab
<b>Participants:</b>	
i)	Mr. Naveed Tahir Deputy Director of Agriculture (OFWM)
ii)	Mr. Muhammad Zubair Field Team In-Charge
iii)	Mr. Misbah Ur Rehman Field Team Engineer
iv)	Mr. Umar Farooq Hammad Field Team Engineer
<b>Meeting Agenda:</b>	
<ul style="list-style-type: none"> <li>Briefing of ME &amp; IE Consultants on project activities.</li> <li>To review the progress of project in the respective area and basic data sampled interventions.</li> <li>Seek the cooperation /coordination of field staff</li> </ul>	
Photograph of ME&IE team with ADA during the meeting is given below as Picture 3.32.	



Picture 3.32: ME & IE Consultants with Deputy Director Agriculture (OFWM) Bahawalnagar Naveed Tahir

**v) Meeting with Assistant Director (Agri) OFWM Bahawalpur, Punjab on 27 May 2022**

<b>Date</b>	27 May 2022
<b>Venue</b>	Office of Assistant Director Agriculture OFWM Office Bahawalnagar
<b>Participants</b>	
i.	Mr. Muhammad Jameel Assistant Director of Agriculture (OFWM) Bahawalnagar
ii.	Mr. Muhammad Zubair Field Team In-Charge

- iii. Mr. Misbah Ur Rehman Field Team Engineer
- iv. Mr. Umar Farooq Hammad Field Team Engineer

**Meeting Agenda/Points discussed:**

- Briefing of ME & IE Consultants on project activities.
- To review the progress of project in the respective area and basic data sampled interventions.
- Seek the cooperation/coordination of field staff

View of the meeting is shown in Picture 3.33.



Picture 3.33: Meeting of consultants Assistant Director Agriculture (OFWM) Bahawalnagar Muhammad Jameel regarding the Baseline Survey/Monitoring/Impact

**3.4.2 Meetings of ME&IE Consultants KP Zone with Stakeholders**

**11<sup>th</sup> Joint Review meeting (JRM) of the projects under Prime Minister Agriculture Emergency Programme on 20 May 2022**

<b>Date</b>	20 May 2022
<b>Venue</b>	Committee room of the Agriculture Department, Civil Secretariat, Government of KP, Peshawar
<b>Participants</b>	
i.	Mr. Muhammad Afzal, Director PMU, Peshawar
ii.	Mr. Javid Iqbal, DG OFWM KP Peshawar
iii.	Mr. Yaseen Marwat, DG Soil Conservation, Peshawar
iv.	Mr. Nazir Abbas Banash, Director Agriculture Engineering, Peshawar
v.	Mr. Muhammad Asad, Programme coordinator PMU, Peshawar

<p>vi. Dr. Humayun Khan, Deputy Team Leader (G3 Consultants)</p> <p>vii. Engg. Tahir Kamran, AGES Consultants, Peshawar</p> <p>viii. Engg Ilyas, DTL NESPAK, TPV consultants- NPIWC-II</p> <p>ix. Engg Nasir, AGES Consultants, Peshawar</p> <p>x. DG Agriculture Extension, Peshawar</p> <p>Fawad Ahmad, ICT/Technology Specialist (G3 Consultants)</p>	<p>ii. Dr. Muhammad Abdul Quddus, Agricultural Economist, Lahore Office.</p> <p>iii. Dr. Umar Farooq, Deputy Team Leader, ME&amp;IE Consultants, Islamabad.</p> <p>iv. Dr. Humayun, Deputy Team Leader, ME&amp;IE Consultants, KPK.</p> <p>v. Mr. Yousaf Bhatti, Deputy Team Leader, ME&amp;IE Consultants, Punjab.</p> <p>vi. Mr. Rizwan Ahmed, Deputy Team Leader, ME&amp;IE Consultants, Balochistan.</p> <p>vii. Mr. Rizwan Saleem, IT Specialist</p> <p>viii. Ms. Muniza Tarrar Social &amp; Gender Specialist</p>
<p><b>Meeting Agenda/Points discussed:</b></p> <p>The Project Management Unit called a general review meeting (JRM) in the Provincial Secretariat, Agriculture Department, Government of Khyber Pakhtunkhwa Peshawar that was schedule at 10.00 am.</p>	<p><b>Meeting Agenda/Points discussed:</b></p> <p>Consultants conduct progress review meeting every Monday do discuss the following</p>
<p>Following discussions held at the meeting.</p> <ul style="list-style-type: none"> <li>i. Meeting was started with the recitation from the Holy Quran by the secretary Agriculture.</li> <li>ii. Mr. Muhammad Asad, Programme coordinator PMU, Peshawar presented the progress of different ongoing projects activities taking place in agriculture sector in KP.</li> <li>iii. A number of observations were raised by the PMU officials on quality of works undertaken by the OFWM Department of KP.</li> <li>iv. Similarly, a number of observations were raised by the PMU officials on quality of works undertaken by the Water Conservation Department of KP.</li> <li>v. The Chair also took serious note on the irregularities took place in the execution of work schemes by the Agriculture Engineering Department of KP.</li> <li>vi. The DTL KP Zone briefly explained the progress made so far by the ME&amp;IE Consultant in KP regarding the NPIWC-II. In this regards the financial constraint was also mentioned by the DTL.</li> </ul> <p>The Chair ended the meeting with a vote of thanks. The participants were served with a cup of tea during the meeting.</p>	<ul style="list-style-type: none"> <li>• Sharing updated progress in tangible form by all DTLs</li> <li>• Discuss issues faced by the ME&amp;IE consultants related to field visits / monitoring</li> <li>• Baseline Survey Phase-II</li> </ul>



Picture 3.34: ME&IE consultants in Zoom Meeting

### 3.6 ICT ASSIGNMENT

The ICT Team remained engaged in different activities related to the ME&IE assignment including development of Android based application, data collection for Dashboard and training of client staff on Dashboard / MIS for the project (**Annex-I**).

#### 3.6.1 Development of Customized Android Based Applications

The ICT Technology Team of ME&IE Consultants NPIWC-II has developed Customized Android Based Applications for data collection. Data entry in this application is done directly by the field monitoring teams of all the zonal offices and is uploaded in the MIS system. The data is being observed and monitored by the ICT team of ME&IE Consultants. In this regard, customized Android Based Applications have been developed, tested, and installed to Small

### 3.5 INTERNAL MEETINGS OF ME&IE CONSULTANTS

<b>Date / Day</b>	<b>Every Monday</b>
Venue	Zoom Meeting
<b>Participants</b>	
i.	Dr. Usman Mustafa, Team Leader, ME&IE Consultants, National Office, Islamabad.

Dams and Irrigation staff of AJK, Water Management Staff of ICT zone and OFWM staff KP zone.

### 3.6.2 Data collection of interventions in MIS/GIS database

The activity regarding data collection of Interventions in MIS/GIS database was completed in KP Zone in December 2021.

- Data cleaning and validation has been completed in KP Zone.
- The data collection for the dashboard is in progress in Balochistan. The ICT team is facing problems in data collection because a lot of data is missing which was required by the ICT team for Implementation of MIS Dashboard.

### 3.6.3 Implementation of MIS Dashboard

The Dashboard has been implemented in AJK, and the progress of Interventions is live on the Dashboard since the 4th of November 2021.

AJK Zone - Watercourses Data Summary				
Division	2019-20	2020-21	2021-22	Over-all
Muzaffarabad	31	92	51	174
Poonch	33	33	77	143
Mirpur	37	97	102	236
<b>Overall</b>	<b>101</b>	<b>222</b>	<b>230</b>	<b>553</b>

So far, Total 553 Watercourses data from AJK zone has been received and available live on Dashboard. Detailed summary attached as (Annex-E).

AJK Zone - Water Storage Tank Data Summary				
Division	2019-20	2020-21	2021-22	Over-all
Muzaffarabad	36	62	40	138
Poonch	15	43	120	178
Mirpur	2	15	51	68
<b>Overall</b>	<b>53</b>	<b>120</b>	<b>211</b>	<b>384</b>

384 Water Storage Tank data received from AJK zone and is available live on Dashboard. Detailed summary attached as (Annex-F).

The Dashboard has also been implemented in KP Zone and progress of completed schemes is live on the Dashboard since 11<sup>th</sup> March 2022.

KP Zone Watercourses Data Summary				
Division	2019-20	2020-21	2021-22	Over-all
Bajaur Agency	3	17	10	30
Bannu	74	40	0	114
Dera Ismail Khan	431	11	53	495
Hazara	83	57	7	147
Khyber Agency	6	13	0	19
Kohat	98	41	25	164
Kurram Agency	1	5	2	8
Malakand	177	169	31	377
Mardan	105	64	9	178
Mohmand Agency	4	26	13	43
Orakzai Agency	0	1	0	1
Peshawar	141	85	3	229
S.W Agency	3	12	0	15
<b>Overall</b>	<b>1126</b>	<b>541</b>	<b>153</b>	<b>1820</b>

KP zone currently total 1823 watercourses data live on Dashboard. Detailed Summary attached as (Annex-G).

KP Zone - Water Storage Tank Data Summary				
Division	2019-20	2020-21	2021-22	Over-all
Bajaur Agency	1	9	1	11
Bannu	12	18	0	30
Dera Ismail Khan	81	6	5	92
Hazara	28	43	4	75
Khyber Agency	1	9	0	10
Kohat	29	17	1	47
Kurram Agency	1	1	0	2
Malakand	75	92	15	182
Mardan	16	9	5	30

Mohmand Agency	1	36	4	41
Orakzai Agency	0	2	0	2
Peshawar	36	25	4	65
S.W Agency	0	15	0	15
<b>Overall</b>	<b>281</b>	<b>282</b>	<b>39</b>	<b>602</b>

In KP zone currently total 602 water storage tanks data live on Dashboard. Detailed Summary attached as (Annex-H).

ICT Watercourse Data Summary	
Division	2020-21
ICT	20
<b>Grand Total</b>	<b>20</b>

ICT zone so far only 20 watercourse schemes have completed, and their data is live on Dashboard. Furthermore, there is not any other scheme under progress.

The ICT team is continuously in process of cleaning and validating the received data and communicating mistakes to the concerned ADs for correction.

### 3.7 MONITORING / DATA COLLECTION ON SOCIAL AND GENDER COMPONENT

During the month of May 2022, meetings were held every Monday to discuss ongoing progress of the project. During the meetings, teams discussed field visits plans and all other ways to collect information from the fields. Due to political activities in the country, few plans were not implemented. Gender and social specialist for Punjab and ICT area joined head office, pictures from the field were collected in Sillanwali and Shahpur Tehsil of Sargodha. Most of the population in rural areas were busy in harvesting wheat crop, which clearly depicts that both men and women were equally participating in rural areas of Punjab. Pakistan's agriculture is labor stark with women making a vital contribution. Their roles are substantially different across regions and are changing rapidly. Despite this active participation in the agricultural sector, women have less access to assets, services and opportunities compared to men. Women are contributing in almost all fields of life. Their efforts at a certain level are not

appreciated as per the effort they are putting in each work. They are the back bone of the national economy and play a vital role in agricultural growth of the country. Pictorial report is attached as Annex-J.

*Women comprise 41% of the world's agricultural labor force, which rises to 78% in some countries. In Pakistan 67% women are involved in this sector.*

### 3.8 CASE STUDY ON WATER STORAGE TANK IN PUNJAB ZONE

#### *"Conversion of Waste land into Agricultural Land"*

Consultants conducted a case study on the Project Intervention in Punjab. A Water Storage Tank of a farmer, Mr. Muhammad Zareef was selected for this study. Muhammad Zareef is a resident of village Bajha Tehsil Koh-e-Suleman, District D. G. Khan. He is an educated and well-known progressive farmer. By his Profession he is a Farmer. He has been associated with farming for the last 10 years. In this tehsil he has only 8 acres of land of his forefathers. Whereas he holds certain pieces of land in other areas.



Picture 3.35: Owner/Beneficiary of Water Storage Tank, Muhammad Zareef

#### Basic Profile of Water Storage Tank

WST Owner:	Muhammad Zareef
Name of village:	Bajha
Tehsil & District:	D.G khan, Koh-e-Suleman

<b>Source of irrigation:</b>	Tube well , Rain water
<b>The shape of the water storage tank:</b>	Trapezoidal
<b>Size of water storage tank:</b>	60 x 60 ft
<b>Depth of WST:</b>	6 ft
<b>Command area of water storage tank:</b>	8 Acre
<b>No of beneficiaries:</b>	1
<b>Name of the Crop</b>	Citrus and Wheat / Maize as intercrop



*Picture 3.36: View of Water Storage Tank OF Mr. Zareef at Village Bajha, Tehsil Koh-e-Suleman*

**According to Mr. Muhammad Zareef;** before construction of WST, his land was barren. It was located in hilly area and its terrain was uneven. He did not grow any crop because its soil consists of gravels. It was not possible to grow any crop in this area. Rain / flood from hills brings fertile soil along with its water. This fertile soil makes a layer on the surface of this land. Every year a layer of soil increased on his land. Due to increased layers of fertile soil the land became useful for growing crops and farmers was able to grow crops on this type of land. Farmer have shortage of water for crops. He had no proper system to store rain water as well. There are no proper roads. It is very difficult to travel in this area.

#### **Guidance from On Farm Water Management Department:**

OFWM department officials motivated the farmer to avail the opportunity from the NPIWC-II Program launched by the Govt. and to construct Water Storage Tank (WST) on subsidy basis. They briefed him about different aspects of NPIWC-II. In spite of the fact that his farm is located in hilly area and with the assistance of OFWM department he constructed the Tank and started storage of water.

He started construction of WST on 15-Jan 2020 and was completed within two months. He installed a tube well in 2020 but it could not fulfill his water requirement. Direct supply of the water to the farm took 3-4 days to irrigate one acre whereas irrigation through a water storage tank took 3 to 4 hours.

There is no shortage of water in the Rabi season. During the Kharif season he faced acute shortage of water. His crop wholly depends upon rainwater in kharif season. He installed a pump to put rain water into the WST to store water into the tank.

#### **Beneficiary Satisfaction:**

**Mr. Muhammad Zareef** the owner of WST is very happy and fully satisfied by the role of OFWM department as his barren land has been converted into Agricultural land due to intervention under the NPIWC-II Program. Now after construction of WST he is growing Citrus Orchard on his land. Other main crops being grown are Wheat/ Berseem/ Maize and Sorghum as well.

#### **Increase in Livestock:**

Before the construction of WST, the land was barren; he does not have any livestock because of lack of fodder. Now he can grow food easily. He has started to keep livestock as well. Now he also has Buffaloes, Cows, Goats, and Sheep which are major sources of food and income for his family.



*Picture 3.37: ME&IE Team at Water storage tank of Mr Zareef. ADA Koh-e-Suleman OFWM also accompanied this visit.*

## CHAPTER 4: QUARTERLY WORK PLAN- ACTIVITIES (APR 2022 TO JUNE 2022)

The ME&IE Consultants' activities initiating during the 2<sup>nd</sup> Quarter of year 2022 (April 1, 2022 to June 30, 2022) are listed below. A tentative Work Plan for 2<sup>nd</sup> Quarter of the year 2022 (April 1, 2022 to June 30 2022) showing time span detail is given as **Annex-A**.

### Pre Field Activities

- i) Preparation for 2nd-Phase Baseline Survey (Finalization of MTs)
- ii) Internal Meetings of ME&IE Consultants' Zonal Offices for development of Methodology for 2nd Phase Baseline Survey
- iii) Training of Field Teams for 2<sup>nd</sup> Phase of Baseline Survey

### Field Activities

- iv) Regular monitoring of Interventions in the field
- v) Data collection of the intervention in the field
- vi) Baseline Survey Stage-II
- vii) Online data entry | android based application

### ICT Assignment

- i) Development/improvement of website of NPIWC-II
- ii) Monitoring Android based Mobile Application under implementation by field staff
- iii) Data collection of interventions in MIS/GIS database
- iv) Data Cleaning, Development & Launching of Dashboard for Client Offices

### Coordination

- i) Meeting of TL with NPC and OFWM Department regarding Progress / Issues
- ii) Meetings of DTLs with respective DTL of PC & concerned OFWM Department
- iii) ME&IE Consultants' Internal Meeting

### Deliverables

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

Document	Status
Draft Inception Report	Submitted
Final Inception Report	Submitted

Monthly Monitoring Report-First (DEC 2020-JAN 2021)	Submitted
Monthly Monitoring Report-Second (FEB 2021)	Submitted
Monthly Monitoring Report-Third (MAR 2021)	Submitted
Quarterly Monitoring & Evaluation Report-First (JAN-MAR 2021)	Submitted
Monthly Monitoring Report-Fourth (APR 2021)	Submitted
Monthly Monitoring Report-Fifth (MAY 2021)	Submitted
Monthly Monitoring Report-Sixth (JUNE 2021)	Submitted
Quarterly Monitoring & Evaluation Report-Second (APR-JUN 2021)	Submitted
Monthly Monitoring Report-Seventh (JULY)	Submitted
Monthly Monitoring Report-Eighth (AUGUST 2021)	Submitted
Annual Monitoring & Evaluation Report	Submitted
Baseline Survey Report (Final Draft)	Submitted
Monthly Monitoring Report-Ninth (SEPTEMBER 2021)	Submitted
Quarterly Monitoring & Evaluation Report-Third (JULY - SEPTEMBER 2021)	Submitted
Special Reports submitted: 1) Monitoring Tools 2) Survey Manual 3) PAM 4) Working Paper on Technology and Methodology for Implementation of Android Based Field Progress Data Collection and GIS Based Progress Monitoring Analytical Dashboard.	Submitted
Monthly Monitoring Report-Tenth (OCTOBER 2021)	Submitted
Monthly Monitoring Report-Eleventh (NOVEMBER 2021)	Submitted
Monthly Monitoring Report-Twelfth (DECEMBER 2021)	Submitted
Quarterly Monitoring & Evaluation Report-Fourth Quarter year 2021 (OCTOBER – DECEMBER 2021)	Submitted

Monthly Monitoring Report-Thirteenth (JANUARY 2022)	submitted within stipulated time
Monthly Monitoring Report-Fourteenth (FEBRUARY 2022)	submitted within stipulated time
Monthly Monitoring Report-Fifteen (MARCH 2022)	submitted within stipulated time
Quarterly Monitoring & Evaluation Report-First Quarter year 2022 (JANUARY – MARCH 2022)	submitted within stipulated time
Monthly Monitoring Report-Sixteen (APRIL 2022)	submitted within stipulated time
Monthly Monitoring Report-Seventeenth (May 2022)	Report in hand to be submitted within stipulated time

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

#### **Matrix of Responsibilities**

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

## CHAPTER 5: ISSUES / BOTTLENECKS

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

- 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.
- 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.

# ANNEXES A to I

## ANNEX-A: TENTATIVE WORK PLAN

## ANNEX - A: TENTATIVE QUARTERLY WORK PLAN (APRIL TO JUNE 2022)

No.	ACTIVITIES	TENTATIVE WORK PLANNED FOR THE QUARTER (April 2022 To June 2022)												Legend	
		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		
<b>1</b>	<b>Pre-Field Activities</b>														
1.1	Preparation for 2nd-Phase Baseline Survey (Finalization of MTs)	Activity starts													
1.2	Internal Meetings of ME&IE Consultants' Zonal Offices for development of Methodology for 2nd Phase Baseline Survey	Activity starts													
1.3	Training of Field Staff for 2nd-Phase Baseline Survey	Activity starts													
<b>2</b>	<b>Field Activities</b>														
2.1	Regular Monitoring of Interventions in the Field	Activity starts													
2.2	Data collection of the interventions in the field	Activity starts													
2.3	Baseline Survey stage - 2	Activity starts													
2.4	Online data entry in android based application	Activity starts													
<b>3</b>	<b>ICT Assignment</b>														
3.1	Development / Improvement of website of NPIWC-II	Activity starts													
3.2	Monitoring online data collection and Data entry	Activity starts													
3.3	Monitoring Android based Mobile Application under implementation by field staff.	Activity starts													
3.4	Data collection of interventions in MIS/GIS database	Activity starts													
3.5	Data Cleaning, Development & Launching of Dashboard for Client Offices	Activity starts													
<b>4</b>	<b>Coordination</b>														
4.1	Meetings of TL with NPC and OFWM Departments regarding Project Progress / Issues	Activity starts													
4.2	Meeting of DTLs with respective DTL of PC & concerned OFWM Departments	Activity starts													
4.3	ME&IE Consultants Internal Meetings	Activity starts													
<b>5</b>	<b>Deliverable</b>														
5.1	Monthly Monitoring Report	Activity starts													
5.2	Quarterly Monitoring Report (January-March 2022)	Activity starts													
5.3	Preparation of Baseline Survey Report 2nd-Phase	Activity starts													

## ANNEX - B: MATRIX OF RESPONSIBILITIES

**MATRIX OF RESPONSIBILITIES**

SR. NO.	DELIVERABLE / ACTIVITIES
1	<b>Provision of Pre-requisite data of project components for starting of Field Activities:</b> <ul style="list-style-type: none"> <li>• Organization of Water Users Associations,</li> <li>• Watercourses Improvement,</li> <li>• Water Storage Tanks,</li> <li>• Laser Land Levelers,</li> </ul>
2	<b>Certification of operational documents of the project,</b> <ul style="list-style-type: none"> <li>• Design, cost estimates, completion reports of watercourses,</li> <li>• Design, cost estimates, completion reports of water storage tanks,</li> </ul>
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

LEGEND	
●	Primary Responsibility
○	Secondary Responsibility
○	Assistance

NPC-FPMU	Agriculture Dept. (FCMMA)	Project Consultants	ME&IE Consultants
○	●	-	-
○	○	●	-
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●
-	-	-	●

## ANNEX - C: MONITORING LOG-FRAME

### Annex-C: Monitoring Log-frame

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
<b>C1: Organization of Water Users' Associations (WUAs)</b>	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"> <li>a) Right of way of 47,278 watercourses available</li> <li>b) Skilled and unskilled labour required for watercourse improvement available</li> <li>c) Construction material for civil works of watercourses procured</li> <li>d) Alternate arrangement for water conveyance during construction made</li> <li>e) Watercourse improved</li> </ul>	<ul style="list-style-type: none"> <li>a) Disputes among the water users settled</li> <li>b) Farmers' branched improved</li> <li>c) Water allocation made amicably</li> <li>d) Maintenance of watercourses, WST and laser units done</li> <li>e) Cooperation among farmers increased</li> </ul>	<ul style="list-style-type: none"> <li>a) 47,278 watercourses improved and 15 percentage points conveyance losses reduced</li> <li>b) Litigation among farmers reduced</li> </ul>	<ul style="list-style-type: none"> <li>a) The functioning of the WUAs will be established through sample interview surveys of WUAs members twice during the project period</li> </ul>

<b>C2: Watercourses Improvements</b>	Improvement of 47,278 watercourses on cost sharing basis: 40% farmers in terms of labour, and 60% funded by project.	<ul style="list-style-type: none"> <li>a) Establishment of 47,278 Water users' associations (WUAs);</li> <li>b) Registration of 47,278 WUAs;</li> <li>c) Improvement and realignment of earthen section of 47,278 watercourses;</li> <li>d) Lining of up to 50% length of 47,278 watercourses either by:                     <ul style="list-style-type: none"> <li>● Precast concrete parabolic lining (PCPL) segments, or</li> <li>● Rectangular brick masonry, or any other method as approved by the project</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>a) 47,278 WCAs established;</li> <li>b) 47,278 WCAs registered;</li> <li>c) 47,278 watercourses improved and lined;</li> </ul>	<ul style="list-style-type: none"> <li>a) Conveyance losses for improved watercourses decreased by about 15 percentage points.</li> <li>b) 1.654 million households benefited from the activity;</li> <li>c) 11.347 million acres served with improved watercourses</li> </ul>	<ul style="list-style-type: none"> <li>a) Increase in cropping intensity on improved watercourses by 5-24%;</li> <li>b) Increase in crop yields.</li> <li>c) Increase in irrigated area</li> <li>d) Increase in agriculture output per unit of water by about 37%</li> </ul>	<ul style="list-style-type: none"> <li>a) Increase in farm income;</li> <li>b) Increase in employment for farm labour;</li> <li>c) Reduction in poverty;</li> <li>d) Enhanced food security for the country.</li> </ul>	<ul style="list-style-type: none"> <li>a) The water flow measurements will be carried out at before and after watercourse improvement on 2-5% sample basis;</li> <li>b) Agriculture survey before and after watercourse improvement on 2-5% sample basis;</li> <li>c) The survey will determine:                     <ul style="list-style-type: none"> <li>● Cropping pattern before and after the improvement;</li> <li>● Cropping intensities before and after improvement;</li> <li>● Before and after crop yields;</li> </ul> </li> </ul>
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								<ul style="list-style-type: none"> <li>• Before and after employment;</li> </ul> <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>
<b>C3: Construction of Water Storage Tanks (WSTs)</b>	<p>a) Construction of 14,932 water storage tanks</p> <p>b) They agree to contribute 40% of the cost</p> <p>c) Agree to first construct the tank with his/her own funds and then</p>	<p>a) 14,932 small farmers mobilized to construct water storage tanks for irrigation</p> <p>b) Agree to first construct the tank with his/her own funds and then</p>	<p>a) 14,932 WSTs constructed</p> <p>b) 14,932 WSTs operated and maintained</p>	<p>a) Water which was otherwise largely going to be wasted is saved</p> <p>b) Irrigation provided at critical stages of the crops</p> <p>c) Flexibility achieved for irrigation</p>	<p>a) More area irrigated</p> <p>b) Increased cropping intensities</p>	<p>a) Increased crop yields</p> <p>b) Increased total crop output quantum</p> <p>c) Increased farm income</p> <p>d) Increased farm employment</p>	<p>a) 2-5% sample of WSTs will be surveyed</p> <p>b) A data collection form will be designed to measure water saving due to WSTs</p> <p>c) The forms used for baseline and impact surveys in case of</p>	

		received subsidy at 40% on issuance of FCR					watercourses will also be used for WSTs d) Same data analysis will be carried out here as in case of watercourses.
<b>C4: Provision of Land Leveling Units</b>	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 leveled on Farmers' / service providers' farms; b) Land leveled on fellow farmers on rent; c) Total 3.483million acres levelled by 11,610 units.	a) Water application efficiency increased at field level; b) Even germination of seed. c) Field application losses reduced by 10 percentage points d) Water productivity increased by 24%	e) Increased area under irrigated crops; f) Enhanced crop yields g) Increased farm income	a) The land levelling is expected to save irrigation water and result in better and even germination of seeds which can enhance crop yields. The crop yields thus affected will be reflected in agriculture sample surveys. b) 2-4% sample units will be visited by ME&IE Consultants

								teams after one years of delivery c) The unit will be verified d) Area treated during the year will be collected e) Farmers' feedback collected on quality of the unit, quality of the after-sale service, etc.
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## ANNEX - D: DELIVERABLES/REPORTING REQUIREMENTS

### Deliverables/Reporting Requirements

Sr. No.	Document	Copies	Due
1	Draft Inception Report	8	45 days after the effectiveness of the Consulting services Agreement.
2	Final Inception Report	15	One week after the issuance of comments by the Client on Draft Inception Report
3	Monthly Monitoring Report	10	10 <sup>th</sup> 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 <sup>th</sup> of the first month of following quarter
8	Annual Monitoring and Evaluation Report	10	During first month of following year
9	Draft Assignment Completion Report	5	At completion of physical works / activities
10	Final Completion Report	25	At completion of works as well as financial transactions
11	Special Reports	10	As and when required

**ANNEX - E: AJ&K ZONE - WATERCOURSE DATA COLLECTION SUMMARY**

AJ&K Zone - Watercourses Data Collection Summary											
Division	District	2019-20		2019-20 Total	2020-21		2020-21 Total	2021-22		2021-22 Total	Overall Total
		Completed	Under Progress		Completed	Under Progress		Completed	Under Progress		
Muzaffarabad	Muzaffarabad	20	8	28	12	30	42	0	31	31	101
	Jhelum	1	1	2	12	6	18	0	11	11	31
	Neelum	0	1	1	7	25	32	1	8	9	42
<b>Muzaffarabad Total</b>		<b>21</b>	<b>10</b>	<b>31</b>	<b>31</b>	<b>61</b>	<b>92</b>	<b>1</b>	<b>50</b>	<b>51</b>	<b>174</b>
Poonch	Poonch	11	1	12	11	1	12	6	19	25	49
	Bagh	12	1	13	5	2	7	0	15	15	35
	Haveli	1	1	2	3	1	4	0	16	16	22
	Sudhnoti	6	0	6	7	3	10	0	21	21	37
<b>Poonch Total</b>		<b>30</b>	<b>3</b>	<b>33</b>	<b>26</b>	<b>7</b>	<b>33</b>	<b>6</b>	<b>71</b>	<b>77</b>	<b>143</b>
Mirpur	Mirpur	15	0	15	35	0	35	6	37	43	93
	Bhimber	8	3	11	46	2	48	11	31	42	101
	Kotli	10	1	11	7	7	14	0	17	17	42
<b>Mirpur Total</b>		<b>33</b>	<b>4</b>	<b>37</b>	<b>88</b>	<b>9</b>	<b>97</b>	<b>17</b>	<b>85</b>	<b>102</b>	<b>236</b>
<b>Overall</b>		<b>84</b>	<b>17</b>	<b>101</b>	<b>145</b>	<b>77</b>	<b>222</b>	<b>24</b>	<b>206</b>	<b>230</b>	<b>553</b>

ANNEX - F: AJ&K ZONE – WATER STORAGE TANK DATA SUMMARY

AJ&K Zone - Water Storage Tank Data Summary										
Division	District	2019-20		2019-20 Total	2020-21		2020-21 Total	2021-22		Overall
		Completed	Under Progress		Completed	Under Progress		Completed	Under Progress	
Muzaffarabad	Muzaffarabad	35	0	35	40	15	55	3	29	32
	Jhelum	1	0	1	4	3	7	0	8	16
<b>Muzaffarabad Total</b>		<b>36</b>	<b>0</b>	<b>36</b>	<b>44</b>	<b>18</b>	<b>62</b>	<b>3</b>	<b>37</b>	<b>40</b>
Poonch	Poonch	8	0	8	19	0	19	13	25	38
	Bagh	3	0	3	14	0	14	3	21	41
	Haveli	0	0	0	2	0	2	2	40	42
	Sudhnoti	2	2	4	6	2	8	0	16	28
<b>Poonch Total</b>		<b>13</b>	<b>2</b>	<b>15</b>	<b>41</b>	<b>2</b>	<b>43</b>	<b>18</b>	<b>102</b>	<b>120</b>
Mirpur	Mirpur	0	0	0	1	0	1	1	17	18
	Bhimber	1	0	1	2	0	2	0	25	25
	Kotli	1	0	1	11	1	12	0	8	21
<b>Mirpur Total</b>		<b>2</b>	<b>0</b>	<b>2</b>	<b>14</b>	<b>1</b>	<b>15</b>	<b>1</b>	<b>50</b>	<b>51</b>
<b>Overall</b>		<b>51</b>	<b>2</b>	<b>53</b>	<b>99</b>	<b>21</b>	<b>120</b>	<b>22</b>	<b>189</b>	<b>211</b>
										<b>384</b>

**ANNEX - G: KP ZONE – WATERCOURSE DATA SUMMARY**

KP Zone - Watercourses Data Summary										
Division	District	2019-20	2020-21			2020-21 Total	2021-22		2021-22 Total	Overall
		Completed	Completed	Under Progress	Completed		Under Progress			
Bajaur Agency	Bajaur	3	17	0	17	2	8	10	30	
<b>Bajaur Agency Total</b>		<b>3</b>	<b>17</b>	<b>0</b>	<b>17</b>	<b>2</b>	<b>8</b>	<b>10</b>	<b>30</b>	
Bannu	Bannu	38	15	0	15	0	0	0	53	
	Lakki Marwat	34	22	0	22	0	0	0	56	
	N.W Agency	2	3	0	3	0	0	0	5	
<b>Bannu Total</b>		<b>74</b>	<b>40</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>114</b>	
Dera Ismail Khan	Dera Ismail Khan	419	0	0	0	22	15	37	456	
	Tank	12	11	0	11	16	0	16	39	
<b>Dera Ismail Khan Total</b>		<b>431</b>	<b>11</b>	<b>0</b>	<b>11</b>	<b>38</b>	<b>15</b>	<b>53</b>	<b>495</b>	
Hazara	Abbottabad	7	9	0	9	0	0	0	16	
	Battagram	15	10	0	10	0	0	0	25	
	Haripur	17	12	0	12	0	0	0	29	
	Kohistan	8	10	0	10	0	0	0	18	
	Mansehra	34	12	1	13	1	0	1	48	
	Torghar	2	3	0	3	6	0	6	11	
<b>Hazara Total</b>		<b>83</b>	<b>56</b>	<b>1</b>	<b>57</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>147</b>	
Khyber Agency	Khyber	6	13	0	13	0	0	0	19	

KP Zone - Watercourses Data Summary									
Division	District	2019-20	2020-21		2020-21 Total	2021-22		2021-22 Total	Overall
		Completed	Completed	Under Progress		Completed	Under Progress		
<b>Khyber Agency Total</b>		6	13	0	13	0	0	0	19
Kohat	Hangu	29	4	0	4	9	0	9	42
	Karak	17	19	0	19	0	0	0	36
	Kohat	52	18	0	18	16	0	16	86
<b>Kohat Total</b>		98	41	0	41	25	0	25	164
Kurram Agency	Kurram	1	5	0	5	2	0	2	8
<b>Kurram Agency Total</b>		1	5	0	5	2	0	2	8
Malakand	Buner	16	14	0	14	21	0	21	51
	Chitral	12	29	0	29	0	1	1	42
	Lower Dir	21	24	0	24	0	1	1	46
	Malakand	27	18	0	18	0	2	2	47
	Shangla	19	6	0	6	4	1	5	30
	Swat	67	58	8	66	0	1	1	134
	Upper Dir	15	12	0	12	0	0	0	27
<b>Malakand Total</b>		177	161	8	169	25	6	31	377
Mardan	Mardan	37	50	0	50	0	0	0	87
	Swabi	68	14	0	14	0	9	9	91
<b>Mardan Total</b>		105	64	0	64	0	9	9	178

KP Zone - Watercourses Data Summary									
Division	District	2019-20	2020-21		2020-21 Total	2021-22		2021-22 Total	Overall
		Completed	Completed	Under Progress		Completed	Under Progress		
Mohmand Agency	Mohmand	4	26	0	26	13	0	13	43
<b>Mohmand Agency Total</b>		4	26	0	26	13	0	13	43
Orakzai Agency	Orakzai	0	1	0	1	0	0	0	1
<b>Orakzai Agency Total</b>		0	1	0	1	0	0	0	1
Peshawar	Charsadda	70	26	0	26	0	0	0	96
	Nowshera	28	42	1	43	0	1	1	72
	Peshawar	43	16	0	16	0	2	2	61
<b>Peshawar Total</b>		141	84	1	85	0	3	3	229
S.W Agency	S.W Agency	3	12	0	12	0	0	0	15
<b>South Waziristan Agency Total</b>		3	12	0	12	0	0	0	15
<b>Overall</b>		<b>1126</b>	<b>531</b>	<b>10</b>	<b>541</b>	<b>112</b>	<b>41</b>	<b>153</b>	<b>1820</b>

**ANNEX - H: KP ZONE – WATER STORAGE TANK DATA SUMMARY**

KP Zone - Water Storage Tank Data Summary											
Division	District	2019-20		2019-20 Total	2020-21		2020-21 Total	2021-22		2021-22 Total	Overall
		Completed	Under Progress		Completed	Under Progress		Completed	Under Progress		
<b>Bajaur Agency Total</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>11</b>
Bannu	Bannu	2	0	2	2	0	2	0	0	0	4
	Lakki Marwat	10	0	10	8	0	8	0	0	0	18
	North Waziristan	0	0	0	8	0	8	0	0	0	8
<b>Bannu Total</b>		<b>12</b>	<b>0</b>	<b>12</b>	<b>18</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>
Dera Ismail Khan	Dera Ismail Khan	71	0	71	0	0	0	5	0	5	76
	Tank	10	0	10	6	0	6	0	0	0	16
<b>Dera Ismail Khan Total</b>		<b>81</b>	<b>0</b>	<b>81</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>92</b>
Hazara	Abbottabad	0	0	0	0	0	0	0	1	1	1
	Abottabad	4	0	4	5	0	5	0	0	0	9
	Battagram	6	0	6	16	0	16	0	0	0	22
	Haripur	7	0	7	6	0	6	0	1	1	14
	Kohistan	3	0	3	6	0	6	0	0	0	9
	Mansehra	5	0	5	8	0	8	0	0	0	13
	Torghar	3	0	3	2	0	2	2	0	2	7

KP Zone - Water Storage Tank Data Summary											
Division	District	2019-20		2019-20 Total	2020-21		2020-21 Total	2021-22		2021-22 Total	Overall
		Completed	Under Progress		Completed	Under Progress		Completed	Under Progress		
<b>Hazara Total</b>		<b>28</b>	<b>0</b>	<b>28</b>	<b>43</b>	<b>0</b>	<b>43</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>75</b>
Khyber Agency	Khyber	1	0	1	9	0	9	0	0	0	10
<b>Khyber Agency Total</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>
Kohat	Hangu	14	0	14	0	0	0	0	0	0	14
	Karak	13	0	13	16	0	16	0	0	0	29
	Kohat	2	0	2	1	0	1	1	0	1	4
<b>Kohat Total</b>		<b>29</b>	<b>0</b>	<b>29</b>	<b>17</b>	<b>0</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>47</b>
Kurram Agency	Kurram	1	0	1	1	0	1	0	0	0	2
<b>Kurram Agency Total</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
Malakand	Buner	4	0	4	12	0	12	9	1	10	26
	Chitral	4	0	4	2	0	2	0	0	0	6
	Dir Lower	3	0	3	4	0	4	0	0	0	7
	Dir Upper	6	0	6	8	0	8	0	0	0	14
	Malakand	7	1	8	5	0	5	0	2	2	15
	Shangla	8	0	8	6	0	6	3	0	3	17
	Swat	42	0	42	51	4	55	0	0	0	97
<b>Malakand Total</b>		<b>74</b>	<b>1</b>	<b>75</b>	<b>88</b>	<b>4</b>	<b>92</b>	<b>12</b>	<b>3</b>	<b>15</b>	<b>182</b>
Mardan	Mardan	9	0	9	7	0	7	0	1	1	17

KP Zone - Water Storage Tank Data Summary											
Division	District	2019-20		2019-20 Total	2020-21		2020-21 Total	2021-22		2021-22 Total	Overall
		Completed	Under Progress		Completed	Under Progress		Completed	Under Progress		
	Swabi	7	0	7	2	0	2	0	4	4	13
<b>Mardan Total</b>		<b>16</b>	<b>0</b>	<b>16</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>30</b>
Mohmand Agency	Mohmand	1	0	1	36	0	36	4	0	4	41
<b>Mohmand Agency Total</b>		<b>1</b>	<b>0</b>	<b>1</b>	<b>36</b>	<b>0</b>	<b>36</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>41</b>
Orakzai Agency	Orakzai	0	0	0	2	0	2	0	0	0	2
<b>Orakzai Agency Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
Peshawar	Charsadda	13	0	13	0	0	0	0	0	0	13
	Nowshera	14	0	14	17	0	17	0	0	0	31
	Peshawar	9	0	9	8	0	8	0	4	4	21
<b>Peshawar Total</b>		<b>36</b>	<b>0</b>	<b>36</b>	<b>25</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>65</b>
South Waziristan Agency	South Waziristan	0	0	0	15	0	15	0	0	0	15
<b>South Waziristan Agency Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Overall</b>		<b>280</b>	<b>1</b>	<b>281</b>	<b>278</b>	<b>4</b>	<b>282</b>	<b>25</b>	<b>13</b>	<b>38</b>	<b>602</b>

## ANNEX - I: PICTORIAL VIEW OF DASHBOARD LAUNCHING & TRAINING

### Dashboard Training (NPIWC-II) at Abbottabad KP



### Dashboard Training (NPIWC-II) at Dera Ismail Khan KP



### Dashboard Training (NPIWC-II) at Peshawar KP



## ANNEX - J: PICTORIAL VIEW OF VISIT BY SOCIAL & GENDER SPECIALIST

### VISIT DURING WHEAT HARVESTING MAY 2022



Sillanwali 136 Chak Sargodha, 16 May 2022



Sargodha to Sahiwal Road, 20 May 2022 Photo Credit Faiz Kalyar



Wheat harvesting in Chak 106 Sargodha, 26 May 2022



Wheat harvesting in the month of May 2022, Sargodha, Shahpur



Village harvesting seen Jhawarian, Shahpur, Sargodha 27 May 2022



Village harvesting seen Jalpana, Shahpur, Sargodha 27 May 2022