



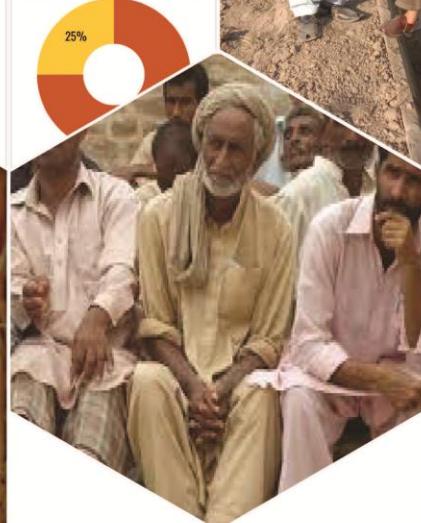
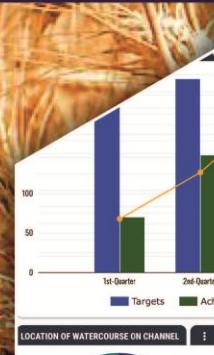
FEDERAL PROJECT MANAGEMENT UNIT  
FEDERAL WATER MANAGEMENT CELL  
MINISTRY OF NATIONAL  
FOOD SECURITY & RESEARCH  
ISLAMABAD - PAKISTAN

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

MONITORING, EVALUATION  
AND IMPACT EVALUATION  
CONSULTANTS

### MONTHLY MONITORING REPORT

DEC 2020 - JAN 2021



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





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

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

*For*

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

**MONTHLY MONITORING REPORT  
DECEMBER 2020-JANUARY 2021**

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## ACRONYMS

ADA	Assistant Director Agriculture
AES	Agriculture Extension Services
AF	Acre-Feet
AJK	Azad Jammu & Kashmir
AWPB	Annual Work Plan and Budget
AWPs	Annual Work Plans
BCR	Benefit Cost Ratio
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
RBM	Results-Based Management
RWD	Responsive Web Design
SOPs	Standardized Operating Procedures
SPSS	Statistical Package for Social Sciences (Software)
SSCs	Supply and Service Companies
TABs	Tablets
TL	Team Leader
TOR	Terms of Reference
TPV	Third Party Validation
TWRD	Tail-Water Recovery Ditch
WG	Women Group
WST	Water Storage Tank
WUAs	Water Users Associations

## EXECUTIVE SUMMARY

The report in hand, "Monthly Monitoring Report for the month of December 2020-January 2021" is comprising of five sections.

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

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

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

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

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

**Section-3** covers the details about Monthly Monitoring Report. This First Monthly Monitoring Report (MMR) covers the period from December 22, 2020 to January 31, 2021.

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

- The first deliverable "Draft Inception Report" was submitted to the client within stipulated time on December 21, 2020.
- The Final Inception Report has been submitted successfully to the NPC at the end of January 2021, after incorporating the valuable comments on the draft inception report by the NPC and provincial DGAs, also incorporating of queries mentioned in the minutes of meetings of combined Inception workshop, held at FMPU Islamabad dated January 14, 2021.
- Establishment of ME&IE Consultants Offices
- Establishment Field Teams Offices & Teams Composition (The Field team's recruitment has been completed and their deployment is under process).
- Meetings and Visits of ME&IE Consultants
- Preparation of Gender Action Plan
- Designing of Dashboard of Project Interventions

**Section-5** of this report covers the detail of ME&IE Consultants activities initiating during the First Quarter 2021 (January 1, 2021 to March 31, 2021) are listed below. Time span detail is mentioned in the Tentative Work Plan. **Annex-A**

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

**Section-6:** Due to non-availability of data and resources/funds from Client, ME&IE Consultants has been facing constraints for timely initiating the activities.

## 1. INTRODUCTION TO NPIWC-II

### 1.1 PROJECT PROFILE

<b>Project Name</b>	National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)
<b>Project Areas</b>	Punjab, KP, Balochistan and 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>	<ol style="list-style-type: none"> <li>1. Federal Project Management Unit (FPMU),</li> <li>2. DGA OFWM Punjab</li> <li>3. DGA OFWM KP</li> <li>4. DGA OFWM Balochistan</li> <li>5. DG Irrigation and Small Dams, AJ&amp;K</li> <li>6. Director WM, GB</li> <li>7. Director Agriculture Extension Services (AES), ICT</li> </ol>
<b>Project Period</b>	5 Year (2019-2024)
<b>Total Project Cost</b>	154,542.355 million (Umbrella PC-1)

### 1.2 PROJECT DESCRIPTION

#### 1.2.1. Project Development Objectives

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

#### 1.2.2. Project Objectives – General & Quantitative

##### 1) General Objectives:

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

- i) Social mobilization through capacity building of WUAs/ FOs,
- ii) Minimization of conveyance and field application losses,
- iii) Reduction in Water Logging and salinity,

- iv) Equity in water distribution,
- v) Reduction in water disputes/thefts/litigation,
- vi) Motivation/participation of farmers,
- vii) Poverty reduction through employment generation,
- viii) Increase in crops yield/sufficiency in food.

##### 2) Quantitative Objectives:

The quantitative objectives of the Project are as under:

##### Project outputs

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

##### Project impacts

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

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

**Project indirect benefits to industry/economic activities**

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

**Awareness support to farmers**

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

**1.2.3. Project Beneficiaries**

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

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

**1.2.4. Project Components**

The NPIWC-II comprises four components.

- i) **C1: ORGANIZATION OF WATER USERS ASSOCIATIONS:** Establishment/ reactivation of Water Users Associations (WUAs) through community driven implementation approach.
- ii) **C2: WATERCOURSE IMPROVEMENTS:** 47,278 Watercourses are planned to be improved /reconstructed and lined.
- iii) **C3: CONSTRUCTION OF WATER STORAGE TANKS:** Construction of 14,932 Water Storage Tanks (WSTs).
- iv) **C4: PROVISION OF LASER LAND LEVELING UNITS:** Provision of 11,610 Laser Land Leveling units to the farmers.

All the project activities are planned to be implemented on a cost sharing basis.

**1.2.5. Project Targets**

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

**Table-1.1: Project Targets (in numbers)**

Sr. No.	Intervention	Punjab	KP	Balochistan	GB	AJK	ICT	Total
1	Reconstruction of Watercourses (more than 20 years old/Additional lining 50 %)	7,500	3,000	3,589	-	-	-	<b>14,089</b>
	New Watercourses (Unimproved)	2,500	10,000	16,800	1,165	2,500	224	<b>33,189</b>
	<b>Total Watercourses</b>	<b>10,000</b>	<b>13,000</b>	<b>20,389</b>	<b>2.500</b>	<b>1.165</b>	<b>224</b>	<b>47,278</b>
2	Water Storage Tanks	3,000	5,000	5,507	825	600	-	<b>14,932</b>
3	Laser Land Leveling Units	9,500	600	1,500	5	5	-	<b>11,610</b>

## 2. ME&IE CONSULTANTS FOR NPIWC-II

A Joint Venture of G3 Engineering Consultants (Pvt.) Ltd., Ease-Pak Engineering services (Pvt.) Ltd., Centre for Social Research and Development (CSR) and ADA Consultants Inc. Canada has been selected through a competitive bidding process as ME&IE Consultants. An Agreement was signed by the Joint Venture and the NPC FPMU-FWMC NPIWC-II on October 26, 2020. The consultants were mobilized on November 20, 2020.

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.

### 2.1 SCOPE OF THE SERVICES

The general scope of the ME&IE Consultants services is to:

- i) Undertake baseline, midline and end line surveys for the project activities/interventions.
- ii) Develop monitoring strategy, framework and Result-Based Monitoring (RBM) indicators.
- iii) Preparation of monthly, quarterly and annual monitoring & evaluation reports.
- iv) Assessing the water saving per annum on watercourses, water storage tanks and field levels.
- 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:
- xii) Development of a GIS database with all spatial layers related to activities being undertaken under the project
- xiii) Give technical assistance for up-dation/up-gradation of water management GIS database.

### 2.2 MONITORING STRATEGY

The monitoring strategy planned to be followed by ME&IE Consultants is briefly described in the following Table-2.1. However, detailed methodology and procedures to carry out the Monitoring, Evaluations and Impact Evaluations of the project interventions are explained in Chapter 6 of Inception Report. The strategy aims to be finalized and implemented in close coordination with the client and active participation of the beneficiaries as well as the project stakeholders.

Table-2.1: Monitoring Strategy for ME&IE Activities

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
1	Base line, mid line and end line surveys	Team Leader, Socio-Economic Expert, Agricultural Economist and Deputy Team Leader of respective province/unit.	<ul style="list-style-type: none"> <li>Base line 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>Base line 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 end line 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>End line Report at the end of End line 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 reach and tail reach.</li> <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>

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
			<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 periodic 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 levelled:             <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 Socio-Economic Expert	<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 estimated. It is benefit towards food security</li> <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>

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
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 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 process 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.

### 2.3 FRAMEWORK AND RESULTS-BASED MONITORING (RBM) INDICATORS

The framework and Results-Based Monitoring (RBM) Indicators are identified in Table-2.2 below. The indicators will be further enhanced and refined in consultation with the client as well as stakeholders. They will also get improved as the project implementation progresses as in the light of real and on the ground situations.

The draft log-frame of the project inputs, outputs, outcomes and impacts with ME&IE methodologies is placed at **Annex-C**.

### 3. MONTHLY MONITORING REPORT

#### 3.1 INTRODUCTION

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

#### 3.2 OBJECTIVE OF MONTHLY MONITORING REPORT

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

#### 3.3 REPORTING PERIOD

This First Monthly Monitoring Report (MMR) covers the period from December 22, 2020 to January 31, 2021.

### 4. ACTIVITIES COMPLETED DURING THE REPORTING PERIOD

The ME&IE Consultants were mobilized on November 20, 2020. The detail of activities carried out by the ME&IE Consultants during the reporting period are:

#### 4.1 ESTABLISHMENT OF CAMP OFFICE

After signing of contract agreement on October 26, 2020, the Management of G3 Engineering Consultants (Pvt.) Ltd “JV Lead firm” has established the camp office at Lahore in order to initiate the assignment activities to meet the timeline for producing first deliverable Inception report.

A kickoff meeting was held on November 20, 2021 at camp office Lahore comprised of ME&IE Consultants core team, authorized representative of JV lead Firm G3EC and representatives of JV firms.

#### 4.2 DRAFT INCEPTION REPORT

The first deliverable “Draft Inception Report” was submitted to the client within stipulated time on December 21, 2020. The Draft Inception Report describes the methodology for ME&IE consultant’s activities.

**The consultants plan to carry out ME&IE assignments in two parts:**

First, monitoring through field visits and surveys of Watercourses, Water Storage Tanks, and Laser Land Leveling Units will be carried out. The processes, timelines and physical progress against targets set in the Annual Work Plans (AWPs) will be marked. The monitoring activities including baseline, midline and end line surveys. The water saving assessment will be simultaneously carried out with the improvement activities of watercourses construction of water storage tanks and the use of laser land levelers. The economic benefits to the agriculture sector will also be estimated in addition to the impact evaluation on the stakeholders and economy as a whole. For each monitoring activity one or more checklist(s) will be developed based on planned SOPs (Modus Operandi) and timelines. The activities will be monitored according to the checklists.

All the checklists will get approved from the client before executing in the field. Additional checklists will

be devised if required. The outcome of the monitoring activities is expected in three states, i.e., the progress is on track, lagging behind or faster than planned. Reasons for lagging progress will be identified with possible solutions. In case of faster progress, good practices will be identified to replicate in the project. All the physical progress will be monitored for quality as well.

The second part of the ME&IE assignment will be the development, operation, maintenance and handing-over the Management Information System (MIS) to the client at the end of the project.

Main features of the MIS are briefly presented as under:

- a) Planning and input-output process monitoring, as well as the tracking of results indicators, assume a critical role in the management of development projects. We propose to develop, set up and implement a Web Based Monitoring Information System (MIS) useful for:
  - Monitor the progress of project implementation and provide timely feedback to all project stakeholders,
  - Monitor, assess, and summarize achievements (outputs and outcomes),
  - Analyze factors affecting the project's implementation and achievements.
- b) The basic functions of the NPIWC-II MIS will be to:
  - Enable the FPMU-FWMC and PC to track the outcome indicators and assess progress in implementation against timescales and targets, and resources used against budgets, based on agreed annual work plans.
  - Describe the factors and reasons triggering variations,
  - Record and reflect new targets, whenever it is required,
  - Draw important lessons to guide the decision-making,
  - Enable forecasting for project accomplishment in comparison to the currently reported progress,
  - Enable the project management to generate reports to funding partners, project beneficiaries and other stakeholders on the status and progress of the project implementation,
  - Integrate GIS components to the MIS to complement field-level surveys and measurements.

- c) Potential users' profiles could be the following:
  - Federal Ministries
  - NPC FPMU-FWMC
  - NWMC (NESPAK)
  - ME&IE Consultants
  - Provincial concerned departments / maintaining system administrators.
- d) The MIS will allow the project to enter the Annual Work Plan and Budget (AWPB) to enable process monitoring. This interface should facilitate the user to create activities for the current year and go back in previous years.
- e) The following project information will be accessible at all times.
  - Project description
  - Project's objectives
  - Implementation partners
  - Locations of implementation
  - Timelines
  - Project activities (and % of accomplishments)
  - Budgets (% of spending)
  - The dashboard is a "real-time" user interface showing graphical and tabular information of multiple data sets. Dashboards allow users to appreciate a situation at a glance and aids in making informed decisions. The way in which data are presented directly affects how they are understood and interpreted / consequently the decisions that are made because of the data.
- f) The kind of data that can be represented in the dashboard includes:
  - Activity/indicator completion rates
  - Budget expenditures
  - Information disaggregated by localities (map views)
  - Timelines, etc.
- g) Notifications/Alerts  
For each type of events (e.g., incoming deadlines, new data input, requests, etc.) the user will receive notifications/alerts of said events within the MIS and via e-mail either:
  - As the event is created
  - Daily / Weekly/ Monthly/Quarterly updates.When an alert generated and in what form and frequency will be decided in consultation with users/clients.

h) Change Tracking

The system records actions of users such as creating data, removing data, data entry, data validation, etc. (e.g., latest update to an open quarterly report). The system records the name of the user, the date and time of change, actions made, code of items altered. This function is crucial to monitor the ME&IE processes.

i) Key Principles

- The system provides Excel-like functionality including filtering/sorting columns (reducing data-entry and increasing ease-of-use).
- The data entry and validation of plans and different reports are linked to user profiles
- The system displays an error message when not able to save the data.
- For all operations, the system keeps an audit trail with the user, date and time of the operation.

The Inception Report was prepared under the guidance and supervision of Mr. Saif Ullah Ejaz Chaudhry, Director G3 Engineering Consultants authorized representative of ME&IE Consultants. The following core team of NPIWC-II participated in the preparation of this Report:

1. Dr. Muhammad Abdul Quddus, Team leader
2. Dr. Sarwar Zahid, DTL (Islamabad)
3. Mr. Muhammad Yousaf Bhatti, DTL (Lahore)
4. Mr. Rizwan Ahmad, DTL (Quetta)
5. Dr. Fateh Muhammad Chaudhry, Irrigation Agronomist
6. Mrs. Munaza Bashir Tarar, Social & Gender Specialist
7. Mr. Waseem Ahmad Masood, FM Specialist
8. Mr. Rizwan Saleem, ICT/Technology Specialist

### 4.3 FINAL INCEPTION REPORT

The Final Inception Report has been submitted successfully to the NPC at the end of January 2021, after incorporating the valuable comments on the draft inception report by the NPC and provincial DGAs, also incorporating of queries mentioned in the minutes of meetings of combined Inception workshop, held at FMPU Islamabad dated January 14, 2021.

## 4.4 ESTABLISHMENT OF ME&IE CONSULTANTS OFFICES

### 4.4.1 Project National Office Islamabad

The ME&IE Consultants National office has been established at Islamabad.  
Address: House No. 6-A, F-6/4, Embassy Road, Islamabad.

### 4.4.2 Zonal Office - Punjab

The ME&IE Consultants Zonal Office for Punjab province has been established at Lahore  
Address: First Floor, Orchard Heights, Arena Commercial, Bahria Orchard, Raiwind Road, Lahore.

### 4.4.3 Zonal Office -Khyber Pakhtunkhwa & Gilgit Baltistan

The ME&IE Consultants Zonal Office for KPK province has been established at Peshawar.  
Address: House # 358, Khyber Colony # 2, Tahkal Payan University Road, Peshawar.

### 4.4.4 Zonal Office -Balochistan

The ME&IE Consultants Zonal Office for Balochistan province has been established at Quetta.

Address: Acquisition is under progress.

## 4.5 ESTABLISHMENT OF FIELD TEAMS OFFICES & TEAMS COMPOSITION.

### 4.5.1 Field Teams Offices - Punjab Zone

There will be three field teams working in Punjab for data collection and field monitoring activities. Two teams will sit at Lahore, the third field team will be stationed at Field Office Multan to cover southern Punjab. The second team stationed at Lahore will be camped at Sargodha during field operations. Team's deployment will remain largely flexible. District wise allocation of field teams are shown in **Table-4.1**.

**Table-4.1: District wise allocation of Field Teams in Punjab**

Team-1	Team-2	Team-3
Chiniot	Bhakkar	Bahawalnagar
Faisalabad	Gujranwala	Bahawalpur
Jhang	Gujrat	Dera Ghazi Khan
Kasur	Hafizabad	Khanewal
Lahore	Khushab	Layyah
Nankana Sahib	Mandi Bahauddin	Lodhran

Team-1	Team-2	Team-3
Okara	Mianwali	Multan
Pakpattan	Narowal	Muzaffargarh
Sahiwal	Sargodha	Rahim Yar Khan
Sheikhupura	Sialkot	Rajanpur
Toba Tek Singh		Vehari

#### 4.5.2 Field Teams Offices - Khyber Pakhtunkhwa & Gilgit Baltistan Zone

There will be three field teams working in Khyber Pakhtunkhwa & Gilgit Baltistan for data collection and field monitoring activities. Two teams will sit at Peshawar Zonal Office and Third at Mansehra Field Office to cover Mansehra District and entire area of Gilgit Baltistan. The second team stationed at Peshawar will be camped at Dera Ismail Khan during field operations. Team's deployment will remain largely flexible. District wise allocation of field teams are shown in **Table-4.2**.

**Table-4.2: District wise allocation of Field Teams in Khyber Pakhtunkhwa & Gilgit Baltistan**

Team-1 (KPK)	Team-2 (KPK)	Team-3 (KPK&GB)
Bajaur	Bannu	Abbottabad
Battagram	Dera Ismail Khan	Haripur
Buner	Hangu	Mansehra
Charsadda	Karak	Astore
Chitral	Kohat	Darel
Khyber	Kurram	Diamer
Lower Dir	Lakki Marwat	Ghanche
Lower Kohistan	North Waziristan	Ghizer
Malakand	Orakzai	Gupis-Yasin
Mardan	South Waziristan	Hunza
Mohmand	Tank	Kharmang
Nowshera		Mansehra
Peshawar		Nagar
Shangla		Roundu
Swabi		Shigar
Swat		Skardu
Torghar		Tangir
Upper Dir		
Upper Kohistan		

#### 4.5.3 Field Teams Offices – Balochistan Zone

There will be deployment of three field teams in Balochistan for data collection and field monitoring activities. Two teams will be stationed at Quetta in the Zonal Office for covering outreach of north areas of the province and Third field team will be stationed at Naseerabad Field Office. The second team stationed at Quetta will be camped at Khuzdar during field operations. Team's deployment will remain largely flexible. District wise allocation of field teams are shown in **Table-4.3**. This is an indicative arrangement.

**Table-4.3: District wise allocation of Field Teams in Balochistan Zone**

Team-1	Team-2	Team-3
Barkhan	Dera Bugti	Awaran
Duki	Harnai	Chagai
Killa Abdullah	Jaffarabad	Gwadar
Killa Saifullah	Jhal Magsi	Kalat
Loralai	Kachi	Kech
Mastung	Kohlu	Kharan
Musakhail	Lehiri	Khuzdar
Noshki	Naseerabad	Lasbella
Pishin	Sibi	Panjgor
Quetta	Sohbat Pur	Shaheed Sikandarabad
Sherani		Washuk
Zhob		
Ziarat		

#### 4.5.4 Field Teams Outreach Office Islamabad Capital Territory (ICT) & AJK Zone

The tenth team will be located at National Office Islamabad. This team will cover all the areas of ICT & AJK. Moreover, districts of Rawalpindi, Attock, Chakwal and Jhelum will also be covered by this team. Team's deployment will remain largely flexible.

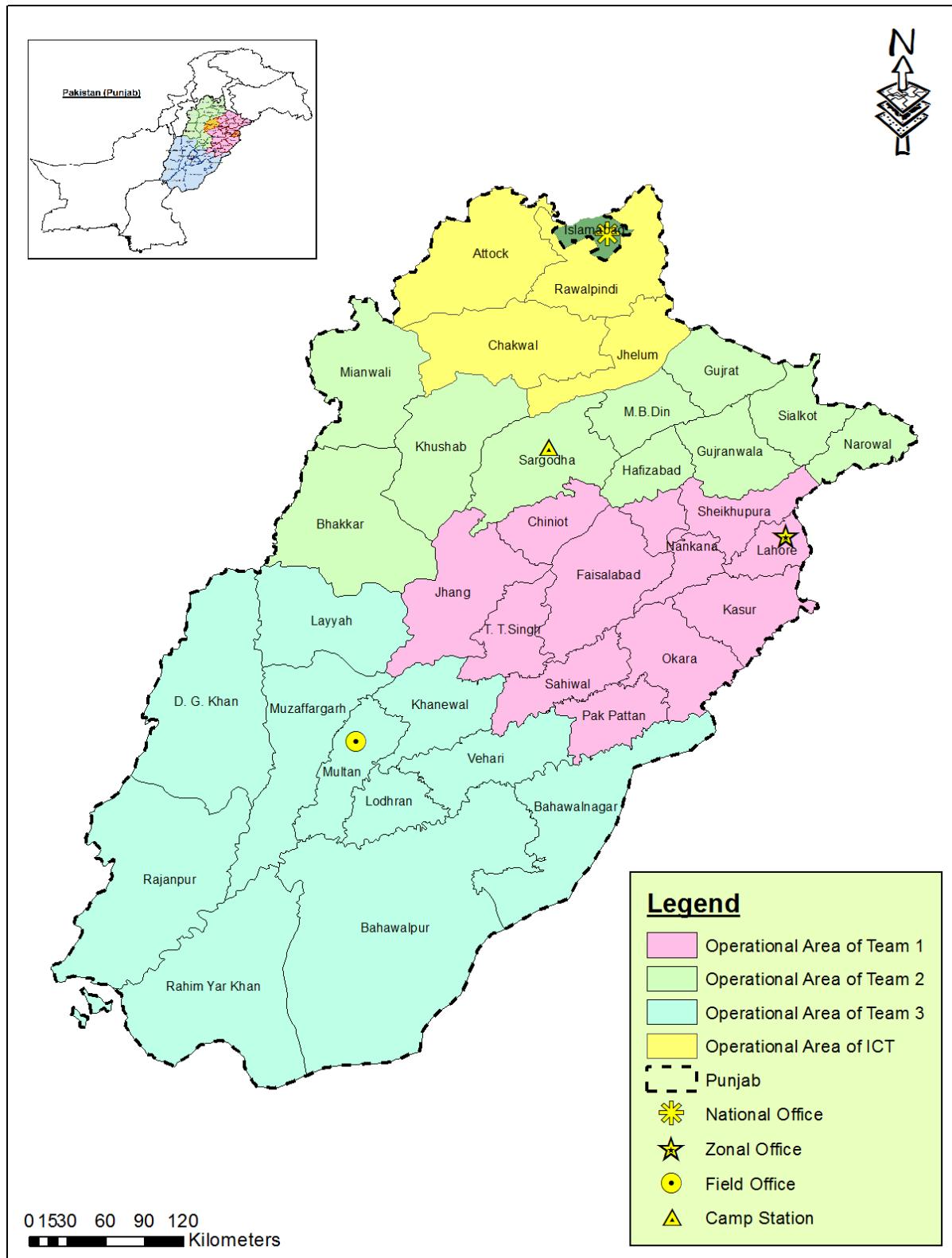


Figure-4.1: Field Teams placement and their operational areas in Punjab

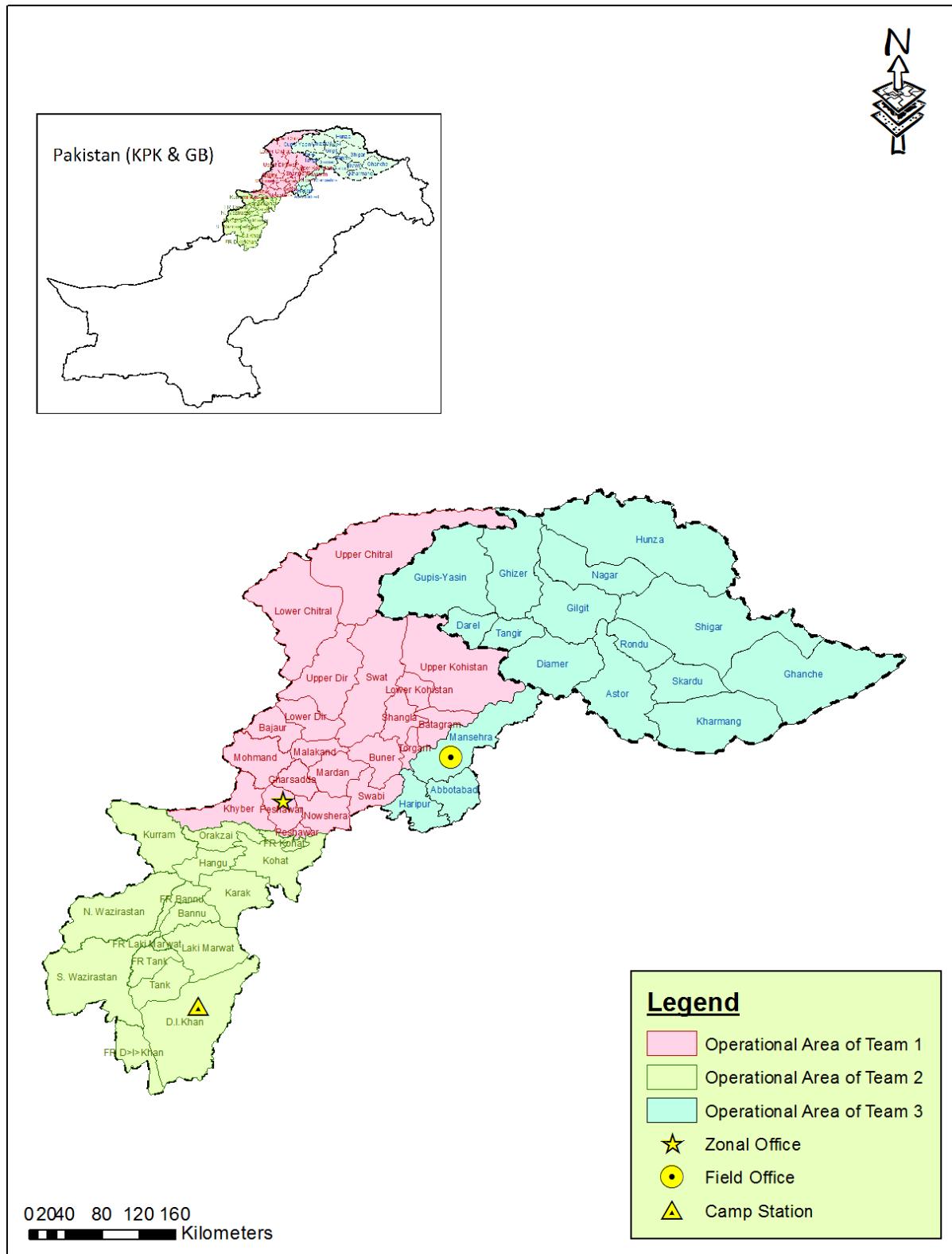


Figure-4.2: Field Teams placement and their operational areas in Khyber Pakhtunkhwa & Gilgit Baltistan

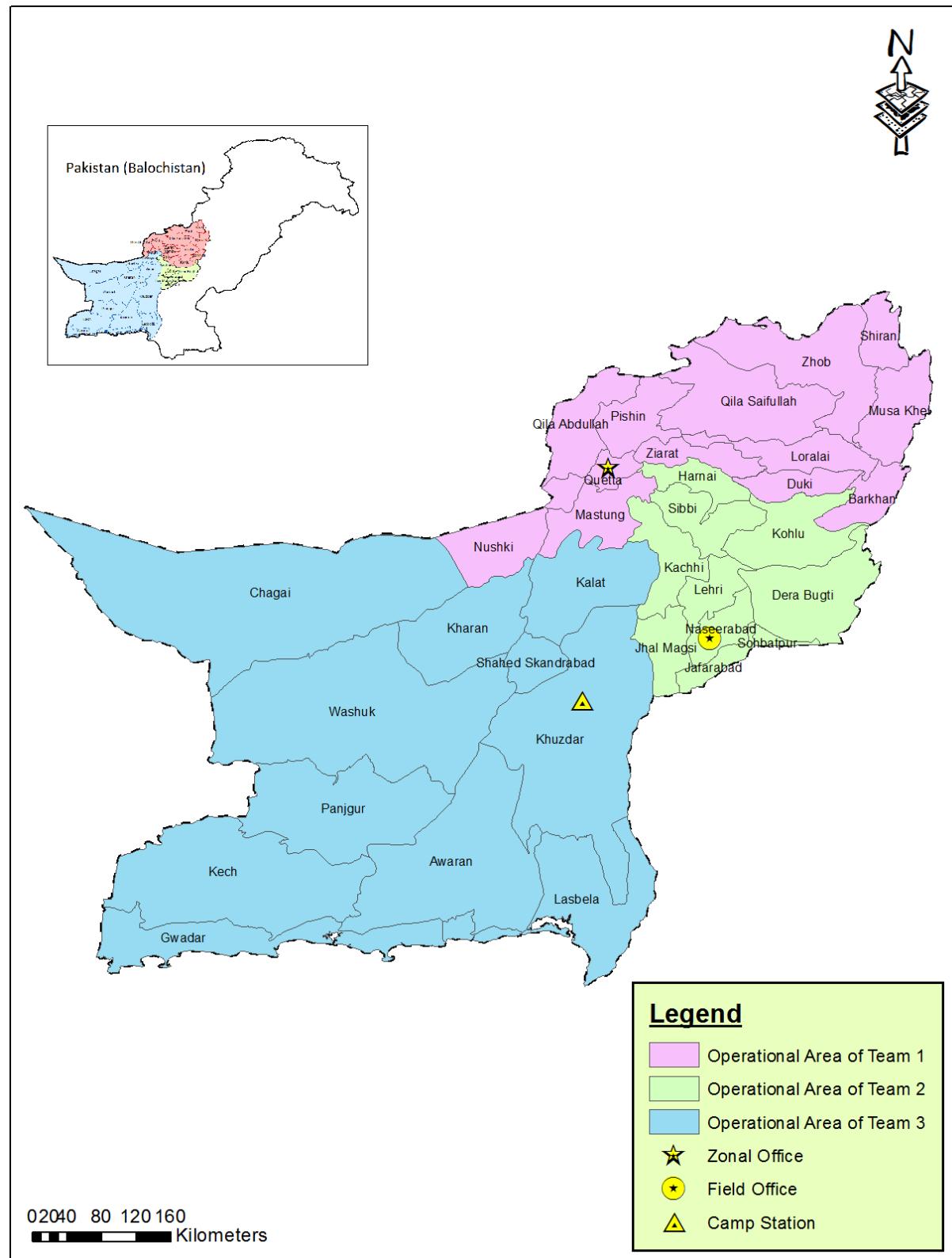


Figure-4.3: Field Teams placement and their operational areas in Balochistan

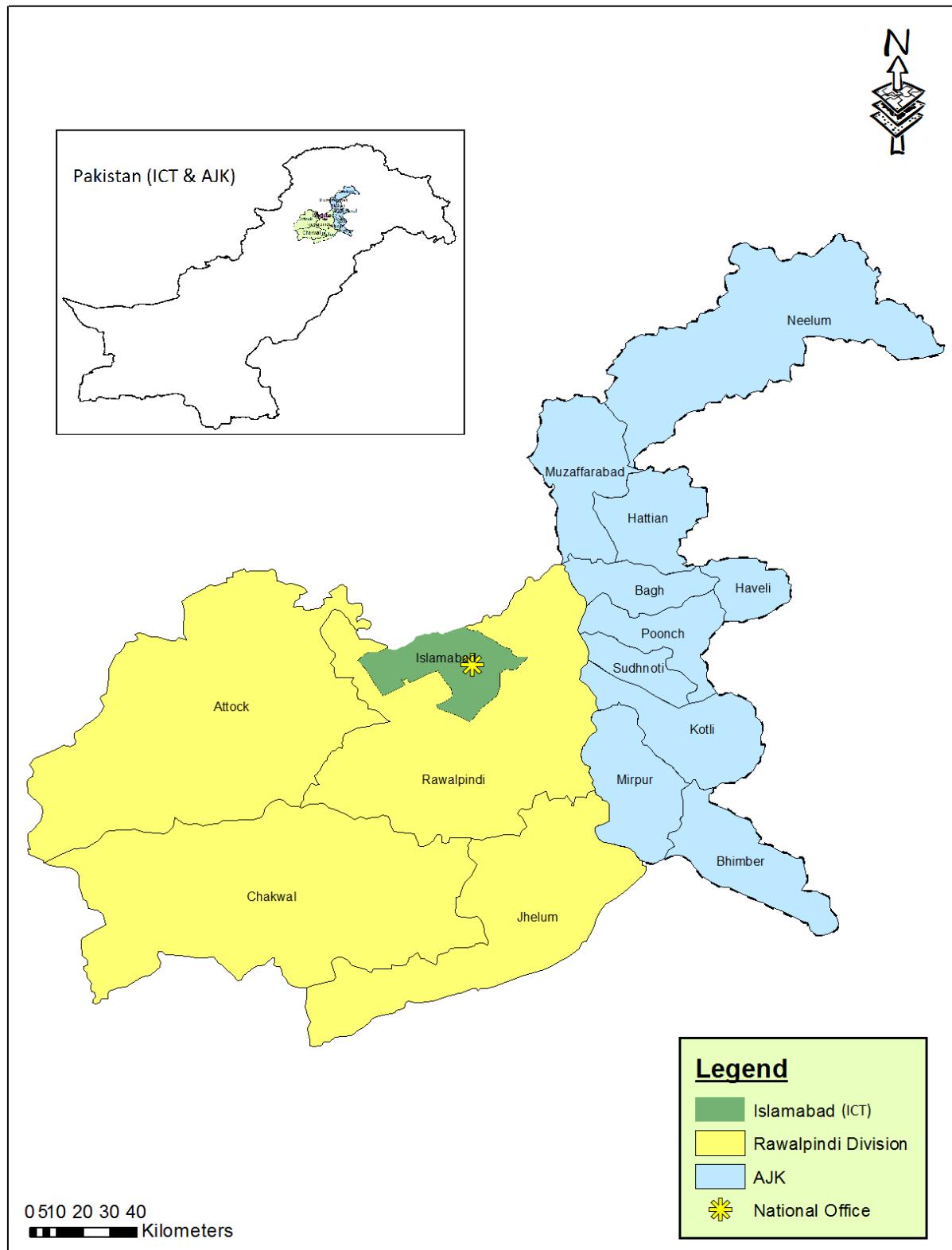


Figure-4.4: Field Teams placement and their operational areas in ICT, AJK and RWP Division

#### 4.6 MEETINGS AND VISITS OF ME&IE CONSULTANTS - PUNJAB ZONE

##### 4.6.1 1<sup>st</sup> Meeting of Core team with DGA OFWM Punjab

<b>Date</b>	December 22, 2020 at 3:00PM
<b>Venue</b>	Office of DGA OFWM Punjab, Directorate General Agriculture Punjab, Davis Road Lahore
<b>Participants</b>	
i.	Malik Muhammad Akram, DGA (OFWM) Punjab
ii.	Hafiz Qaiser Yaseen, DDA Head Quarter (OFWM)
iii.	Mr. Tahir Mahmood, ADA Technical Head Quarter (OFWM) Focal Person for NPIWC-II
iv.	Dr. Muhammad Abdul Quddus Team Leader ME&IE Consultants (NPIWC-II)
v.	Mr. Muhammad Yousaf Bhatti, Deputy Team Leader (Punjab Zone) ME&IE Consultants (NPIWC-II)
vi.	Mr. Rizwan Saleem, ICT/Technology Specialist ME&IE Consultants (NPIWC-II)
<b>Meeting Agenda/Points discussed:</b>	
<p>In this project introductory meeting, general issues were discussed regarding conducting ME&amp;IE Assignment.</p> <p>During the discussion Malik Muhammad Akram DGA (OFWM) suggested that a team be deployed in Sargodha just like PC (NESPAK) for better coordination and saving time in collection of relevant data from the field.</p> <p>This suggestion was well taken by the ME&amp;IE team and later on approved by the management and a camp station was proposed for 2<sup>nd</sup> team located at zonal office Lahore. The team will be stationed at Sargodha during field operations.</p> <p>The meeting ended with thanks and assuring each other for full cooperation.</p>	

##### 4.6.2 2<sup>nd</sup> Meeting of core team with DGA OFWM Punjab

<b>Date</b>	January 5, 2021 at 4:00PM
<b>Venue</b>	Office of DGA OFWM Punjab, Directorate General Agriculture Punjab, Davis Road Lahore
<b>Participants</b>	
i.	Malik Muhammad Akram, DGA (OFWM) Punjab
ii.	Hafiz Qaiser Yaseen, DDA Head Quarter (OFWM)
iii.	Mr. Tahir Mahmood, ADA Technical Head Quarter (OFWM) Focal Person for NPIWC-II

- iv. Dr. Muhammad Abdul Quddus Team Leader ME&IE Consultants (NPIWC-II)
- v. Mr. Muhammad Yousaf Bhatti, Deputy Team Leader (Punjab Zone) ME&IE Consultants (NPIWC-II)
- vi. Mr. Waseem Ahmad Masood, Financial Management Specialist ME&IE Consultants (NPIWC-II)

##### Meeting Agenda/Points discussed:

Detailed discussion was held on the methodology and procedure for conducting ME&IE study with the cooperation & coordination with the OFWM department. Following were the main decisions:

- i. The DGA (OFWM), nominated Mr. Hafiz Qaisar Yasin, Deputy Director (Headquarters) (OFWM) and Tahir Mahmood, Assistant Director (Technical) (OFWM) as focal persons for coordinating and timely providing information/ data required by ME&IE Consultants.
- ii. The Team Leader of ME&IE Consultants handed over the required data list (also sent earlier) to OFWM officials. They promised to provide the data as early as possible.
- iii. The DGA (OFWM) gave an organogram of the department and advised the Consultants Team to contact ADA (OFWM) on the spot at Tehsil level for better coordination and provision of basic field data. A list of ADAs (OFWM) addresses with contact numbers were also handed over to Consultants.
- iv. For the purpose of technical assistance to ME&IE Consultants by the NWMC (NESPAK) at local level, DGA (OFWM) would arrange another meeting with NWMC (NESPAK) and ME&IE Consultants.
- v. ME&IE Consultants requested to the focal person for the provision of NPIWC-II data Punjab zone for components for initiating the field activities but rest assured data was not provided still the end of reporting period.



Figure-4.5: Meeting of core team with DGA OFWM Punjab Lahore

#### 4.6.3 3<sup>rd</sup> Meeting with NWMC (NESPAK) (NESPAK) Lahore

Date	January 21, 2021 at 11.00 AM
Venue	NESPAK House, Lahore
<b>Participants</b>	
i.	Dr. Ali Raza, Team Leader NWMC (NESPAK)
ii.	Mr. Shahzad, Design Engineer NWMC (NESPAK)
iii.	Mr. Khurram Ahmad, GIS Specialist NWMC (NESPAK)
iv.	Mr. Haseeb, Senior Engineer NWMC (NESPAK)
v.	Dr. Muhammad Abdul Quddus Team Leader ME&IE Consultants (NPIWC-II)
vi.	Mr. Muhammad Yousaf Bhatti, Deputy Team Leader (Punjab Zone) ME&IE Consultants (NPIWC-II)
vii.	Mr. Rizwan Saleem, ICT/Technology Specialist ME&IE Consultants (NPIWC-II)
viii.	Mr. Waseem Ahmad Masood, Financial Management Specialist ME&IE Consultants (NPIWC-II)

#### Meeting Agenda/Points discussed:

Meeting agenda was discussion on general technical issues and procedure for close coordination for the achievement of project milestones successfully.

Following were the main decisions:

The NWMC (NESPAK) will provide to the ME&IE Consultants required project data regarding:

- Design and cost estimates approval for Watercourses and Water Storage Tanks.
- Interim Completion Report (ICR-I) and (ICR-II) of Watercourses.
- Completion Reports of Watercourses and Water Storage Tanks.
- Copies of the inspection reports on Laser Land Leveler.
- Any other certificate pertaining to project intervention.
- Provision Monthly and other progress reports.
- Templates for certificates will be shared by the Project Consultants. Whereas Technical Sanction is to be issued by OFWM department.
  - ME&IE Consultants are working on an android application for data collection from field. NWMC (NESPAK) are required to provide data through this system. The ME&IE Consultants will provide basic trainings of data collection tools.
  - ME&IE Consultants are also preparing a website and Dashboard for updating data.

Accessibility to any person of such data will be the discretion of the Project Client.

- Before transmitting data on the dashboard for the public, PC desired that at least one week validation period be allowed.
- The NWMC (NESPAK) desired for nomination of focal persons for coordination proposed from both sides. Later on, ME&IE Consultants Management suggested the name of Mr. Waseem Ahmad Masood, FMS, Islamabad as a focal person of ME&IE Consultants for coordination.
- There should be closed coordination at local level particularly at Zonal offices, as the situation of interventions differs from zone to zone.

At the end of session, The Team leader of NWMC (NESPAK) promised to provide the required data after the submission of their Final Inception report.

Meeting was ended with the vote of thanks and assured both teams for keeping close coordination for developing smooth working relationship.



Figure-4.6: Meeting of core team with NWMC (NESPAK) Lahore

#### 4.6.4 4<sup>th</sup> Meeting with DDA (OFWM), District Kasur

Date	January 11, 2021
Venue	Office of Deputy Director Agriculture (OFWM), Kasur City
<b>Participants</b>	
i.	Rana Tajammal Hussain, DDA (OFWM), Kasur
ii.	Mr. Atiq-Ur-Rehman, Assistant Agronomist, Tehsil Kasur
iii.	Mr. Mohsin Bashir, Assistant Agricultural Engineer, Kasur
iv.	Mr. Niaz Ahmad, Supervisor, Tehsil Kasur
v.	Dr. Muhammad Abdul Quddus Team Leader ME&IE Consultants (NPIWC-II)
vi.	Mr. Muhammad Yousaf Bhatti, Deputy Team Leader (Punjab Zone) ME&IE Consultants (NPIWC-II)

Meeting Agenda/Points discussed:	
General discussion on the working of OFWM field staff at district and tehsil level, was held particularly in the district Kasur. The DDA (OFWM) shared District/ Tehsil level data/information about project interventions with ME&IE Consultants.	



Figure-4.7: Meeting of TL and DTL Punjab Zone with Officials of OFWM, District Kasur

Increase in delivery efficiency	Yes
Reduction in conveyance losses	Yes
Increase in cropping intensity	Yes
Increase in crop yield	Yes
Saving in time and labour	Yes
Reduction in water losses	Yes (about 80%)



Figure-4.8: Visit of New Watercourse at Lumbe Kadhe village, District Kasur

#### 4.6.5 Field Visit(s) – Punjab Zone

##### 1) Field Visit – District Kasur:

Field Visit - 1	Description
Type of Scheme	New Watercourse
Date of visit	January 11, 2021
Name of Place	Lumbe Kadhe village, District Kasur
ME&IE Consultants Staff	Dr. Muhammad Abdul Quddus, Team Leader and Mr. Muhammad Yousaf Bhatti, Deputy Team Leader Lahore Zone
OFWM Staff	Mr. Attiq-Ur-Rehman ADA, Mr. Mohsin Bashir, AAE and Mr. Niaz Ahmad Supervisor
Name of Chairman WUA/farmer	Mr. Fiaz Ahmad
Length	New Watercourse 240 Meter
Year	2020-21
Current Status	Uncompleted
Source of water	Canal
Command Area	-
Data of Water Users Association	WUA data was available
<b>Farmer / Beneficiary Feedback:</b>	
Increase in cropped area	Yes

##### 2) Field Visit – District Kasur:

Field Visit - 2	Description
Type of Scheme	Provision of LLL
Date of visit	January 11, 2021
Name of Place	Nizam Pura village, District Kasur
ME&IE Consultants Staff	Dr. Muhammad Abdul Quddus, Team Leader and Mr. Muhammad Yousaf Bhatti, Deputy Team Leader Lahore Zone
OFWM Staff	Mr. Attiq-Ur-Rehman ADA, Mr. Mohsin Bashir, AAE and Mr. Niaz Ahmad Supervisor
Name of farmer	Mr. Ali Asghar
Length	New Watercourse 240 Meter
Date of LLL received	November 2020
Current Status	Uncompleted
Source of water	Barani Area
Owner of Land	8 Acre
Total Cost of LLL	PKR. 520,000
Subsidy by OFWM	PKR. 250,000

Per Hour rate of LLL	PKR. 1500
Total Cost of LLL	PKR. 520,000
Total Cost of LLL	PKR. 520,000
<b>Farmer / Beneficiary Feedback:</b>	
Increase in cropped area	Yes
Increase in delivery efficiency	Yes
Increase in cropping intensity	Yes
Increase in crop yield	Yes
Saving in time and labour	Yes
Reduction in water losses	Yes (about 50%)



Figure 4.9: Checking of Laser Land Leveler at Nizam Pura village, District Kasur

## 4.7 MEETINGS AND VISITS OF ME&IE CONSULTANTS – ICT AND AJK ZONE

### 4.7.1 1<sup>st</sup> Meeting of DTL ICT & AJK with Director AES ICT

<b>Date</b>	January 20, 2020 at 11:00 AM
<b>Venue</b>	Office of Director AES ICT
<b>Participants</b>	
i. Mr. Waqar Anwar, Director AES ICT ii. Representative, DAES ICT iii. Technical staff, Director AES ICT iv. Mr. Iftikhar Ali Arain National DTL NWMC (NESPAK) v. Dr. Muhammad Sarwar Zahid, DTL (ICT & AJK Zone) ME&IE Consultants (NPIWC-II)	
<b>Meeting Agenda/Points discussed:</b>	
In this project introductory meeting, Project NPIWC-II was discussed with stakeholder and discussed about coordination and provision of assistance for field activities.	



Figure 4.10: Meeting with Official of OFWM & DTL of PC, ICT

### 4.7.2 Field Visit(s) – ICT & AJK Zone

#### 1) Field Visit – ICT Areas:

The team consultants comprising of Dr. Muhammad Sarwar Zahid, DTL ME&IE Consultants and Mr. Iftikhar Ali Arain, DTL National Office along Agriculture department's official have visited project areas of ICT on January 21, 2021.

The Officials of Agriculture department informed that they have selected Five sites for the visit of project interventions in the area of Phulgran, Barakoh Murree road ICT. The selection criteria of the site were that a farmer must have 20 canals of land and availability of water. The extension department first advertised the facility by the Government and some farmers were found through the media. Some farmers were also found through personal contacts who apply for the similar facility.



Figure 4.11: Visit of Scheme-Watercourse at Phulgran, Barakoh Murree road ICT

#### 4.8 MEETINGS AND VISITS OF ME&IE CONSULTANTS – KP & GB ZONE

##### 4.8.1 1<sup>st</sup> Meeting with NPC NPIWC-II Islamabad

Date	January 1, 2021
Venue	Office of NPC NPIWC-II
<b>Participants</b>	
i.	Mr. Tahir Anwar, NPC NPIWC-II
ii.	Mr. Hafiz Abdul Rauf, CEO of JV firm EASEPAK
iii.	Dr. Humayun Khan, DTL KP & GB Zone
<b>Meeting Agenda/Points discussed:</b>	
The 1 <sup>st</sup> Informal Introductory meeting was held with Mr. Tahir Anwar, NPC NPIWC-II along with CEO of JV firm EASEPAK	

##### 4.8.2 2<sup>nd</sup> Meeting with DDA OFWM Marden

Date	January 7, 2021
Venue	Office of District Director OFWM Marden
<b>Participants</b>	
i.	Mr. Bakhtawar Shah, District Director OFWM Marden
ii.	Dr. Humayun Khan, DTL KP & GB Zone
<b>Meeting Agenda/Points discussed:</b>	
Meeting was held with Mr. Bakhtawar Shah Sahib, District Director OFWM Marden in his good office on January 7, 2021. The DTL briefed about ME&IE activities initiating in KP and GB and request for providing of NPIWC-II data of the respective district.	



Figure-4.12: DTL Meeting with DDA OFWM District Marden

##### 4.8.3 3<sup>rd</sup> Meeting with DDA OFWM Marden

<b>Date</b>	January 18, 2021
<b>Venue</b>	Office of DDA OFWM Marden
<b>Participants</b>	
i.	Mr. Bakhtawar Shah, District Director OFWM Marden
ii.	Dr. Humayun Khan, DTL KP & GB Zone
<b>Meeting Agenda/Points discussed:</b>	
Follow-up meeting was held with Mr. Bakhtawar Shah Sahib, District Director OFWM Marden in his good office on January 18, 2021 regarding collection of requested data of NPIWC-II schemes, completed in District Marden.	

##### 4.8.4 4<sup>th</sup> Meeting with DGA OFWM KP

<b>Date</b>	January 25, 2021
<b>Venue</b>	Office of DG OFWM KP
<b>Participants</b>	
i.	Mr. Javid Iqbal Khattak, DG OFWM KP
ii.	Dr. Humayun Khan, DTL KP & GB Zone
<b>Meeting Agenda/Points discussed:</b>	
DTL KP & GB Zone, Dr. Humayun Khan visited the office of the Mr. Javid Iqbal Khattak, DG OFWM KP on January 25, 2021 for introductory meeting. DGA suggested to write a letter through the Ministry of National Food, Security and Research to the DG OFWM KP requesting him to direct all the District Directors/officers to co-operate/facilitate ME&IE consultant teams in the study districts in their field activities.	



Figure-4.13: DTL Meeting with DGA OFWM KP Peshawar

##### 4.8.5 Field Visit(s) – KP and GB Zone

###### 1) Field Visit – Palato village, District Marden:

The Deputy Team Leader visited schemes of Marden with staff of OFWM as per detail given below:

Field Visit - 1	Description
Type of Scheme	Watercourse
Date of field visit	January 1, 2021
Name Place	Palato village, District Mardan
ME&IE Consultants	Mr. Dr. Humayun Khan DTL KP & GB Zone
OFWM Staff	Mr. Saeed Shah Engineer
Name of Farmer	Dr. Muhammad Israr Farm Manager
Length	-
Year	2019-20
Current Status	Completed
Source of water	Canal
Command Area	20 Acres
<b>Farmer / Beneficiary Feedback:</b>	
Cropped area	Increased
Farming efficiency	Increased
Cropping intensity	Increased
Crop Yield	Increased
Water losses	Reduced about 50%
Saving of Water	Yes about 50%
Time saving	Two to three hours per turn



Figure-4.14: Visit of Scheme-Watercourse at Palato village, District Mardan



Figure-4.15: Visit of Scheme-Watercourse at Palato village, District Mardan

#### 4.9 MEETINGS AND VISITS OF ME&IE CONSULTANTS – BALOCHISTAN ZONE

##### 4.9.1 1<sup>st</sup> Meeting of core team with DDA Technical OFWM Quetta

Date	December 30, 2020
Venue	Office of Deputy Director, Technical, OFWM Quetta
<b>Participants</b>	
i.	Mr. Wali Tareen, Deputy Director, Technical, OFWM Quetta
ii.	Mr. Rizwan Ahmed, DTL Balochistan
<b>Meeting Agenda/Points discussed:</b>	
The 1 <sup>st</sup> meeting was held with Mr. Wali Tareen, Deputy Director, Technical, OFWM in his good office on December 30, 2020. The Deputy Team Leader shared ME&IE progress with him and briefed about ways of working to be conducted during ME&IE activities.	

##### 4.9.2 2<sup>nd</sup> Meeting with Director OFWM Quetta

Date	December 30, 2020
Venue	Office of Director OFWM Quetta
<b>Participants</b>	
i.	Mr. Munir, Director, OFWM Quetta
ii.	Mr. Rizwan Ahmed, DTL Balochistan
<b>Meeting Agenda/Points discussed:</b>	
The 2nd meeting was held with Mr. Munir, Director, OFWM on the same date i.e., 30th Dec. 2020. The DTL discussed the field plan. Mr. Munir deputed his staff for joint visit of three schemes i.e., Watercourses, PVC Pipe and Water Storage Tank of Quetta district.	

##### 4.9.3 3<sup>rd</sup> Meeting with DDA Technical OFWM Quetta

Date	January 5, 2021
Venue	Office of DDA (Technical) OFWM Quetta
<b>Participants</b>	
i.	DDA (Technical) OFWM Quetta
ii.	Mr. Rizwan Ahmed, DTL Balochistan
<b>Meeting Agenda/Points discussed:</b>	
The 3rd meeting was held with DDA (Technical), OFWM Quetta in his office on January 5, 2021 regarding data collection.	

#### 4.9.4 4<sup>th</sup> Meeting with DGA OFWM Quetta

<b>Date</b>	January 11, 2021
<b>Venue</b>	Office of Director General, OFWM Quetta
<b>Participants</b>	
i.	Director General, OFWM Quetta
ii.	Mr. Rizwan Ahmed, DTL Balochistan
<b>Meeting Agenda/Points discussed:</b>	
The 4 <sup>th</sup> meeting was held with Director General, OFWM in his good office on January 11, 2021 regarding data collection and briefed the role of ME&IE Consultants in NPIWC-II Project.	

#### 4.9.5 5<sup>th</sup> Meeting with DTL, NWMC (NESPAK) Balochistan

<b>Date</b>	January 12, 2021
<b>Venue</b>	Zonal Office Quetta of DTL NWMC (NESPAK) Balochistan
<b>Participants</b>	
i.	DTL, NWMC (NESPAK) Balochistan
ii.	Mr. Rizwan Ahmed, DTL Balochistan
<b>Meeting Agenda/Points discussed:</b>	
The 5 <sup>th</sup> meeting was held with DTL, NWMC (NESPAK) Balochistan at their Zonal Office Quetta on January 12, 2021 to discuss the project activities and data collection.	

#### 4.9.6 6<sup>th</sup> Meeting with DGA OFWM Quetta

<b>Date</b>	January 12, 2021
<b>Venue</b>	Office of Director General, OFWM Quetta
<b>Participants</b>	
i.	Director General, OFWM Quetta
ii.	Mr. Rizwan Ahmed, DTL Balochistan
<b>Meeting Agenda/Points discussed:</b>	
The 6th meeting was held with Director General, OFWM in his good office on January 12, 2021 regarding data collection and discussion on project activities.	

#### 4.9.7 7<sup>th</sup> Meeting with DTL, NWMC (NESPAK) Balochistan

<b>Date</b>	January 18, 2021
<b>Venue</b>	Zonal Office Quetta of DTL NWMC (NESPAK) Balochistan
<b>Participants</b>	
i.	DTL, NWMC (NESPAK) Balochistan
ii.	Mr. Rizwan Ahmed, DTL Balochistan

#### Meeting Agenda/Points discussed:

The 7th meeting was held with DTL, NWMC (NESPAK) Balochistan at their Zonal Office Quetta on January 18, 2021 to discuss the monitoring tools required to ME&IE Consultants.

#### 4.9.8 Field Visit(s) – Balochistan Zone

##### 1) Field Visit – Killi Khali, District Quetta:

The Deputy Team Leader visited three schemes of Quetta district with staff of OFWM as per detail given below:

Field Visit - 1	Description
<b>Type of Scheme</b>	<b>PVC 4" Watercourse</b>
Date of field visit	December 31,2020
Name Place	Killi Khali, District Quetta
ME&IE Consultants	Mr. Rizwan Ahmed, DTL Balochistan Zone
OFWM Staff	Haji Ali Mengal, Assistant Engr. Qari Abul Basit, Sub Engr.
Name of Farmer	Malik Ubaidullah
Pipe Length	2000 ft
Year	2019-20
Current Status	Completed
Source of water	Tubewell
Command Area	15 Acres
Data of Water Users Association	As per OFWM officials, WUA paper works are in process and hopefully it will be completed soon in all respects.
<b>Farmer / Beneficiary Feedback:</b>	
Cropped area	Increased
Farming efficiency	Increased
Cropping intensity	Increased
Crop Yield	Increased
Water losses	Reduced about 50%
Saving of Water	Yes about 90%
Time saving	Two to three hours per turn



Figure-4.16: View of Water Supply PVC Pipe at Killi Khali, Quetta



Figure-4.17: View of pipe passing through under Bypass Road



Figure-4.18: View of pipe joint section of PVC with RCC



Figure-4.19: View of command area at Killi Khali, Quetta

## 2) Field Visit – Killi Khali, District Quetta:

Field Visit - 2	Description
Type of Scheme	New Watercourse & Rehabilitation of Old Watercourse
Date of visit	December 31,2020
Name of Place	Killi Khali, District Quetta
ME&IE Consultants Staff	Mr. Rizwan Ahmed, DTL Balochistan Zone
OFWM Staff	Haji Ali Mengal, Assistant Engineer Qari Abul Basit, Sub Engineer
Name of Farmer	Malik Ghulam Farooq
Length	New Watercourse 2000 ft
Year	2019-20
Current Status	Completed
Source of water	Tubewell
Command Area	12 Acres
Data of Water Users Association	As per OFWM officials, WUA paper works are in process and hopefully it will be completed soon in all respects.

### Farmer / Beneficiary Feedback:

Cropped area	Increased
Farming efficiency	Increased
Cropping intensity	Increased
Crop Yield	Increased
Water losses	Reduced about 70%
Saving of Water	Yes about 90%



Figure-4.20: Visit of Watercourse at Killi Khali, Quetta at Killi Khali, Quetta



Figure-4.21: View of Watercourse at Killi Khali, Quetta at Killi Khali, Quetta



Figure-4.22: View of washing-pad at Killi Khali, Quetta



Figure-4.23: View of command area at Killi Khali, Quetta

### 3) Field Visit – Killi Shamozi, District Quetta:

Field Visit - 3	Description
Type of Scheme	Water Storage Tank
Date of visit	December 31,2020
Name of Place	Killi Shamozi, District Quetta
ME&IE Consultants Staff	Mr. Rizwan Ahmed, DTL Balochistan Zone
OFWM Staff	Haji Ali Mengal, Assistant Engineer Qari Abul Basit, Sub Engineer
Name of Farmer	Malik Ghulam Farooq
WST size	(60'x60')
Year	2019-20
Current Status	Completed
Source of water	Tube well
Command Area	12 Acres
Data of Water Users Association	As per OFWM officials, WUA paper works are in process and hopefully it will be completed soon in all respects.

#### Farmer / Beneficiary Feedback:

Cropped area	Increased
Delivery efficiency	Increased
Reduction in conveyance losses	Yes
Cropping intensity	Increased
Crop yield	Increased
Saving in time and labour	Yes
Reduction in water losses	Yes (about 70%)



Figure-4.24: DTL, Balochistan with Assistant Engineer, OFWM and Farmer, view of command area, scheme of WST at Killi Shamozi District Quetta



**Figure-4.25: View of Water Storage Tank, Command Area and Source of Water at Killi Shamoza, District Quetta**



**Figure-4.26: View of Water Storage Tank and Discharge System at Killi Shamoza, Quetta**



**Figure-4.27: View of old Water Storage Tank (Kacha) which has been dismantled now by farmers at Killi Shamoza, District Quetta.**

#### **4.10 DETAIL OF COLLECTIVE MEETINGS OF ME&IE CONSULTANTS**

##### **4.10.1 1<sup>st</sup> Zoom Meeting of Team Leader with Core team ME&IE Consultants.**

The 1<sup>st</sup> Zoom meeting was conducted by Team Leader ME&IE Consultants with Core Team from his good office located at Camp Office on November 28, 2020 regarding Preparation of Draft Inception Report.

##### **4.10.2 2<sup>nd</sup> Zoom Meeting of Team Leader with Core team ME&IE Consultants.**

The 2<sup>nd</sup> follow-up Zoom meeting was conducted by Team Leader ME&IE Consultants with Core Team from his good office located at Camp Office on December 2, 2020 regarding Preparation of Draft Inception Report.

##### **4.10.3 3<sup>rd</sup> Meeting of Director G3EC Lead JV firm with Core team of ME&IE Consultants.**

The 3<sup>rd</sup> meeting was conducted by the Authorized Representative G3EC Lead JV firm with the Core team of ME&IE Consultants from his good office located at Head Office G3 Engineering Consultants (Pvt.) Ltd on December 24, 2020.

##### **Meeting Agenda:**

- i. Finalization of Draft Inception Report NPIWC-II
- ii. Development/working strategy of NPIWC-II Dashboard/Mobile App/Website
- iii. Team work, Coordination & Communication
- iv. Activities & Responsibilities Matrix Preparation
- v. Operations of the Project.

Detail discussion and decisions were incorporated in the minutes of the meeting.

The meeting was concluded with the vote of thanks by meeting chair Ch. Saif Ullah Sb. that all team members will perform their duties with full spirit, focusing on project milestones and timelines with coordination and cooperation with each other for successfully completion of the NPIWC-II project.

##### **4.10.4 4<sup>th</sup> Meeting of Director G3EC Lead JV firm with Core team of ME&IE Consultants.**

The 4<sup>th</sup> follow-up meeting was conducted by the Authorized Representative G3EC Lead JV firm with Core team of ME&IE Consultants from his good office

located at Head Office G3 Engineering Consultants (Pvt.) Ltd on January 2, 2020.

Detail discussion and decisions were incorporated in the minutes of the meeting.

The meeting was concluded with the vote of thanks by meeting chair Ch. Saif Ullah Sb. that all team members will perform their duties with full spirit, focusing on project milestones and timelines with coordination and cooperation with each other for successfully completion of the NPIWC-II project.

#### **4.10.5 5<sup>th</sup> Meeting of Team Leader with Core team ME&IE Consultants.**

The 5<sup>th</sup> meeting was conducted by the Team Leader with Core Team Members of ME&IE Consultants on January 13, 2021 at Islamabad regarding discussion on the presentation "Draft Inception Report of ME&IE Consultants" to be presented in the combined Inception Report Workshop dated January 14, 2021.

#### **4.10.6 Combined Draft Inception Report Workshop**

The 6<sup>th</sup> meeting was held under Chairmanship of National Project Coordinator (NPC) of NPIWC-II at Committee Room FPMU NPIWC-II Islamabad on January 14, 2021.

##### **Meeting participants were:**

- i. Mr. Tahir Anwar, NPC NPIWC-II Islamabad
- ii. Mr. Saiful Islam Deputy NPC NPIWC-II
- iii. Representatives, DGA (WM) Punjab
- iv. Representatives, DGA (WM) KP
- v. DGA (WM) Balochistan
- vi. Representatives, Agriculture (WM) GB
- vii. Representatives, Agriculture (WM) AJK
- viii. TL and Zonal DTLs of NWMC (NESPAK)
- ix. TL and Zonal DTLs of ME&IE Consultants (NPIWC-II)

##### **Meeting Agenda:**

- i. Presentations and discussion sessions on Combined Workshop on Draft Inception Report
- ii. Detail discussion and decisions were incorporated in the minutes of the meeting.
- iii. The meeting was concluded with the vote of thanks by meeting chair for successfully completion of the NPIWC-II project.

#### **4.10.7 7<sup>th</sup> Meeting of Director G3EC Lead JV firm with Core team of ME&IE Consultants.**

The 7th meeting was conducted by the Authorized Representative G3EC Lead JV firm with Core team of ME&IE Consultants at Islamabad on January 14, 2020.

##### **Meeting Agenda:**

- i. Guideline for Finalization of Final Inception Report NPIWC-II after Incorporating Comments of Client and DGAs of respective provinces

Detail discussion and decisions were incorporated in the minutes of the meeting.

The meeting was concluded with the vote of thanks by meeting chair Ch. Saif Ullah Sb. for successfully completion of task.

#### **4.11 PREPARATION OF GENDER ACTION PLAN**

In the month of January 2021 after compilation of inception report literature review was carried out to prepare social safeguard outline for farmers of the project area. As social safeguard policies are essential tool to prevent and mitigate undue harm to the people during program activities.

Furthermore, ADB social safeguard policies were also reviewed to prepare grievance redressed mechanism at grass root level.

Gender mainstreaming and integration literature was reviewed so that we can develop a process to involve all in a program activity.

FAO, World Bank reports are under review to prepare a social mobilization process for farmers at grass root level. Social mobilization is important aspect of all activities to be carried out for monitoring and evaluation.

Lesson learnt in different projects were reviewed to calculate women folk activities participation in the project. The main reason of low participation is lack of resources, lack of education, cultural barriers but the main reason is that it is not supported by male members as they think that irrigation is male domain. For making a replicable model a detailed social mobilization and monitoring plan will be prepared under the guidance of client and team members of NPIWC-II.

#### 4.12 DESIGNING OF DASHBOARD OF PROJECT INTERVENTIONS

The designing/development of MIS/GIS system followed the software engineering methods. Thus, user requirements elicitation, requirements analysis, system design, system implementation and maintenance were done in a circular fashion. Thereafter, evaluation will be done to test the efficacy, effectiveness, and efficiency of the management information system in the real environment. In the system development, both structured system analysis, design, object-oriented analysis, and design approaches will be used.

An established Management Information System will enable Federal and Provincial PMUs to demonstrate to key stakeholders whether the project is achieving the stated goals, outcomes, and outputs in accordance with targeted time frame.

The GIS based MIS will provide the means of:

- i) Comprehensively tracking the project inputs and outputs, using mainly the set of key performance indicators outlined under each component at frequent intervals;
- ii) Monitoring of project outcome indicators;
- iii) Robustly analyzing the relevant ME&IE data;
- iv) Reporting progress on an open-access and regular basis, to support knowledge sharing, greater transparency, and improved project governance.

The initial steps towards the development of MIS dashboard have been initiated in accordance with the ICT assignment TORs. MIS architecture design and database structural design are under process, meanwhile the UI (User Interface) design flows are also under creation. The MIS main structure of database is linked with the component's processes. As the processes will be finalized / communicated by Project Consultants' it will be integrated in the database structural design and the localization of these processes as per the zonal/unit based will also be integrated.

## 5. WORK PLAN-ACTIVITIES OF FIRST QUARTER

The ME&IE activities initiating during the First Quarter 2021 (January 1, 2021 to March 31, 2021) are listed below. Time span detail is mentioned in the Tentative Work Plan. **Annex-A**

### 5.1 PRE- FIELD ACTIVITIES

- i) Finalization and submission of Final Inception Report to the Client at the end of January 2021.
- ii) Meetings with Stakeholders.
- iii) Renovation of National office Islamabad and Zonal offices.
- iv) Operational of National office Islamabad and Zonal offices.
- v) Procurement of office Furniture, Equipment, Computer, Tabs/Smart Phone, Pygmy Current Meter and Vehicles, etc.
- vi) Acquiring the buildings for field offices. Renovation/furnishing of buildings for field offices.
- vii) Establishment/operational of field offices.
- viii) Preparation of 3-months plan.

### 5.2 FIELD ACTIVITIES

- i) Mobilization of field teams.
- ii) Training sessions of field teams and key staff on Monitoring Tools & Android application.
- iii) Pre-testing of Monitoring Tools.
- iv) Refinement of Monitoring Tools.
- v) Training on Measurement of water flow (Pygmy Current Meter).
- vi) Determination of Sample size on District/Tehsil level.
- vii) Sampling and data collection methodology, Approval from Client.
- viii) Baseline Survey.

### 5.3 ICT ASSIGNMENT

- i) Mobilization of field teams.
- ii) Development of Android based Mobile Application.

- iii) Testing of Monitoring tools on Android based system.
- iv) Data collection of interventions in MIS/GIS database.
- v) Designing of dashboard of Project Interventions.

### 5.4 COORDINATION

- vi) Meeting of DTLs with respective DTL of PC.
- vii) Meeting of DTLs with respective DGs.
- viii) Field visit/meeting with senior field engineer.
- ix) Field visit/meeting with DA, DDA and ADA.

### 5.5 MATRIX OF RESPONSIBILITIES

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

### 5.6 DELIVERABLES

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

Document	Status
Draft Inception Report	Submitted
Final Inception Report	Submitted
Monthly Monitoring Report (First)	Report to be submitted on February 10,2021
Quarterly Monitoring Report	To be submitted on Stipulated time.

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

## 6. ISSUES NEED TO BE ADDRESSED

The ME&IE Consultants has been facing following constraints for timely initiating the activities:

- Non-availability of Primary data from Client
- Non-availability of data from NWMC (NESPAK)
- Non-availability of data from Provincial Agriculture departments.
- Non-availability of resources/funds from Client.

# ANNEXES A to D

## ANNEX-A: TENTATIVE WORK PLAN

## ANNEX-A: TENTATIVE WORK PLAN

<b>TENTATIVE WORK PLAN</b> <b>ME &amp; IE CONSULTANTS - NPIWC-II</b>												<b>LEGEND</b>				
NO.	ACTIVITIES	3 Months - Year 2021 (Weeks)														
		January				February				March						
		WK-1	WK-2	Wk-3	Wk-4	Wk-1	Wk-2	Wk-3	Wk-4	Wk-1	Wk-2	Wk-3	Wk-4	Wk-1	Wk-2	Wk-3
1	<b>Pre-field Activities:</b>															
	1.1 Incorporating the comments in Final Inception Report.															
	1.2 Meetings With stakeholders (DGs OFWM, NPC & PC).															
	1.3 Renovation of National office Islamabad and Zonal offices.															
	1.4 Operational of National office Islamabad and Zonal offices.															
	1.5 Procurement of office Furniture, Equipment, Computer, Tabs/Smart Phone, Pygmy Current Meter and Vehicles, etc.															
	1.6 Acquiring the buildings for field offices.															
	1.7 Renovation/furnishing of buildings for field offices.															
	1.8 Establishment/operational of field offices.															
	1.9 Preparation of 3-months plan.															
2	<b>Field Activities:</b>															
	2.1 Mobilization of field teams.															
	2.2 Training sessions of field teams and key staff on Monitoring Tools & Android application.															
	2.3 Pre-testing of Monitoring Tools.															
	2.4 Refinement of Monitoring Tools.															
	2.5 Training on Measurement of water flow (Pygmy Current Meter).															
	2.6 Determination of Sample size on District/Tehsil level.															
	2.7 Sampling and data collection methodology, Approval from Client.															
	2.8 Baseline Survey.															
3	<b>ICT Assignment:</b>															
	3.1 Development of web site of NPIWC-II.															
	3.2 Development of Android based Mobile Application.															
	3.3 Testing of Monitoring tools on Android based system.															
	3.4 Data collection of interventions in MIS/GIS database.															
	3.5 Designing of dashboard of Project Interventions.															
4	<b>Coordination</b>															
	4.1 Meeting of DTLs with respective DTL of PC.															
	4.2 Meeting of DTLs with respective DGs.															
	4.3 Field visit/meeting with senior field engineer.															
	4.4 Field visit/meeting with DA, DDA and ADA.															
5	<b>Deliverables:</b>															
	5.1 Final Inception Report.															
	5.2 Monthly Monitoring Report.															
	5.3 Quarterly Monitoring Report.															

## ANNEX-B: MATRIX OF RESPONSIBILITIES

**MATRIX OF RESPONSIBILITIES**

LEGEND			
●	Primary Responsibility		
○	Secondary Responsibility		
○	Assistance		

SR. NO.	DELIVERABLE / ACTIVITIES	NPC-FPMU	Agriculture Dept. (OPUWMA)	Project Consultants	ME&IE Consultants
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	-	-	-	●

## ANNEX-C: MONITORING LOG-FRAME

### Annex-C: Monitoring Log-frame

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

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

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
							<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>
C3: Construction of Water Storage Tanks (WSTs)	a) Construction of 14,932 water storage tanks	a) 14,932 small farmers mobilized to construct water storage tanks for irrigation b) They agree to contribute 40% of the cost	a) 14,932 WSTs constructed b) 14,932 WSTs operated and maintained	a) Water which was otherwise largely going to be wasted is saved b) Irrigation provided at critical stages of the crops c) Flexibility achieved for irrigation	a) More area irrigated b) Increased cropping intensities	a) Increased crop yields b) Increased total crop output quantum c) Increased farm income d) Increased farm employment	a) 2-5% sample of WSTs will be surveyed b) A data collection form will be designed to measure water saving due to WSTs c) The forms used for baseline and

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

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

## ANNEX-D: DELIVERABLES/REPORTING REQUIREMENTS

## 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	End line Survey Report	10	At the end of the end line 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