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

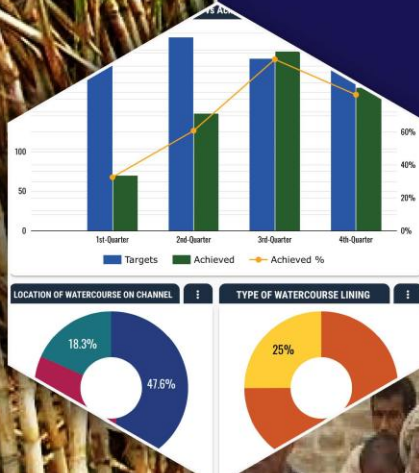
NATIONAL PROGRAM FOR IMPROVEMENT OF WATERCOURSES IN PAKISTAN PHASE-II: (NPIWC-II)

MONITORING, EVALUATION AND IMPACT EVALUATION CONSULTANTS



QUARTERLY MONITORING & EVALUATION REPORT

JAN TO MAR 2021



A Joint Venture of
G3 Engineering Lead Firm
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)

QUARTERLY MONITORING AND EVALUATION REPORT JANUARY-MARCH 2021

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ACRONYMS

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

M&E	Monitoring and Evaluation
MAF	Million Acre Feet
ME&IE	Monitoring, Evaluation and Impact Evaluation
MIS	Management Information System
MNFSR	Ministry of National Food Security and Research
MMR	Monthly Monitoring Report
MT	Monitoring Template
MTE	Mid-Term Evaluation
NESPAK	National Engineering Services Pakistan
NPC	National Project Coordinator
NPIWC	National Program for Improvement of Watercourses
NPV	Net Present Value
NWMC	National Water Management Consultants
OFWM	On Farm Water Management
PC-1	Planning Commission-(Form-One)
PDO	Project Development Objectives
PIC	Project Implementation Committee
PIES	Project Impact Evaluation Study
PQC	Pre-Qualification Committee
QM&ER	Quarterly Monitoring and Evaluation Report
RBM	Results-Based Management
RFT	Running Feet
RWD	Responsive Web Design
SFT	Square Feet
SOPs	Standardized Operating Procedures
SPSS	Statistical Package for Social Sciences (Software)
SSCs	Supply and Service Companies
TABs	Tablets
TL	Team Leader
TOR	Terms of Reference
TPV	Third Party Validation
TWRD	Tail-Water Recovery Ditch
WG	Women Group
WST	Water Storage Tank
WUAs	Water Users Associations

EXECUTIVE SUMMARY

The report in hand, “Quarterly Monitoring and Evaluation Report for the month of January 01, 2021 to March 31, 2021” is comprising of seven 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 Quarterly Monitoring and Evaluation Report. This first Quarterly Monitoring and Evaluation Report (QM&ER) covers the period from January 01, 2021 to March 31, 2021.

Section-4 of this report covers the detail of deliverables submitted to Client from ME&IE Consultants during the reporting period are summarized below:

- Draft Inception Report
- Final Inception Report
- Monthly Monitoring Report (First)
- Monthly Monitoring Report (Second)

Section-5 of this report covers the activities completed during the reporting period are summarized below:

- Mobilization of ME&IE Consultants
- Establishment & Renovation of ME&IE Consultants National, Zonal and Field Offices
- District wise coverage of ME&IE field teams
- Meetings and Visits of ME&IE Consultants
- Field visits for Pre-testing of monitoring Tools
- Refinement of Monitoring Tools
- Preparation of Gender Action Plan
- Development of Methodology for determination of Sample Size
- Development of Android Based Application
- Website Development of NPIWC-II
- Designing of Dashboard of Project Interventions
- MIS Dashboard Process Monitoring Input Tools
- Training Sessions of Field Teams and Key Staff on Monitoring Tools & Android Application
- Training on Measurement of Water Flow (Pygmy Current Meter)

Section-6 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-7: Due to non-availability of data from NWMC (NESPAK) & respective Directorates and resources from Client, ME&IE Consultants has been facing constraints for timely initiating the activities.

1. INTRODUCTION TO NPIWC-II

1.1 BACKGROUND

The Government of Pakistan is implementing a five-year National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II), funded by the Ministry of National Food Security and Research (MNFSR), Islamabad. The executing agencies (EAs) are Federal Water Management Cell (FWMC), all Provincial Directorates of OFWM and respective departments of AJK, GB and ICT, District Governments and Farmers' Organizations (FOs) / Water Users Associations (WUAs). The coordination rests with FPMU-FWMC Islamabad.

There was a requirement of the project implementation to hire expert services of consultants for Monitoring, Evaluation and Impact Evaluation. For this purpose, a joint venture of G3 Engineering Consultants Pvt. Ltd., Ease-Pak Engineering Services (Pvt.) Ltd., Center for Social Research and Development (CSR) and ADA Inc., Canada has been selected through competitive bidding process as ME&IE Consultants. An Agreement was signed by the Joint Venture and the National Project Coordinator (NPC) on behalf of the Client dated 26th October 2020. The ME&IE Consultants team was mobilized on 20th November 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.

1.2 BRIEF DESCRIPTION OF THE PROJECT

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

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/litigations,
- vi) Motivation/participation of farmers,
- vii) Poverty reduction through employment generation,
- viii) Increase in crops yield/sufficiency in food.

1.2.3 Project Objectives – Quantitative

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

- i) Reduction in Water Logging and salinity in project areas to the extent of 10%,
- ii) Cropping intensity is expected to increase by 5-20%,
- iii) Crops yield is estimated to increase by 10-15%.
- iv) Equity in water distribution increased by about 30%,
- v) Reduction in water disputes/thefts and litigation amongst the Farmers over water distribution by about 80%,
- vi) Help poverty reduction through generation of employment,
- vii) Self-sufficiency in food through utilization of water saved for edible oil seed production.

Project indirect benefits to industry/economic activities

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

Awareness support to farmers

- ii) Motivating farmers through an awareness campaign for watercourse improvement,

- iii) Providing technical material to farmers for optimal utilization of water resources in the shape of technical manual and operational guidelines.

1.3 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/Unit (excluding Sindh) are given in Table-1.2(a) to Table-1.2(c).

Table-1.2: 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	-	-	-	14,089
	New Watercourses (Unimproved)	2,500	10,000	16,800	1,165	2,500	224	33,189
	Total Watercourses	10,000	13,000	20,389	2,500	1,165	224	47,278
2	Water Storage Tanks	3,000	5,000	5,507	825	600	-	14,932
3	Laser Land Leveling Units	9,500	600	1,500	5	5	-	11,610

Table-1.2(d): Province-wise year-wise watercourses targets

Sr. No.	Province / Unit	Watercourses (Numbers)					
		Year-1	Year-2	Year-3	Year-4	Year-5	Total
1	Punjab	1,000	1,100	2,700	2,800	2,400	10,000
2	Khyber Pakhtunkhwa	1,600	3,200	3,200	3,200	1,800	13,000
3	Balochistan	2,020	5,250	5,530	4,800	2,789	20,389
4	Gilgit Baltistan	496	496	500	504	502	2,500
5	AJK	190	227	244	278	226	1,165
6	ICT	24	45	47	57	51	224
	Total	5,330	10,320	12,221	11,639	7,768	47,278

Table-1.2(e): Province-wise year-wise water storage tanks targets

Sr. No	Province / Unit	Water Storage Tanks (Numbers)					
		Year-1	Year-2	Year-3	Year-4	Year-5	Total
1	Punjab	400	400	800	700	700	3,000
2	Khyber Pakhtunkhwa	550	1,300	1,300	1,300	550	5,000
3	Balochistan	360	1,000	1,510	1,500	1,137	5,507
4	Gilgit Baltistan	163	164	165	165	168	825
5	AJK	120	120	120	120	120	600
6	ICT	-	-	-	-	-	-
	Total	1,593	2,984	3,895	3,785	2,675	14,932

Table-1.2(f): Province-wise year-wise Laser Land Leveling Unit targets

Sr. No.	Province / Unit	Laser Land Leveling (Numbers)					
		Year-1	Year-2	Year-3	Year-4	Year-5	Total
1	Punjab	1,700	2,200	2,200	2,000	1,400	9,500
2	Khyber Pakhtunkhwa	-	200	200	200	-	600
3	Balochistan	200	350	400	400	150	1,500
4	Gilgit Baltistan	-	2	3	-	-	5
5	AJK	-	2	3	-	-	5
6	ICT	-	-	-	-	-	-
Total		1,900	2,754	2,806	2,600	1,550	11,610

1.4 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.

1.5 PROJECT COMPONENTS

The project comprises four components, detailed as under:

1.5.1 Component C1: Organization of Water Users' Associations

The effective involvement and participation of the shareholders act as a catalyst for successful implementation of any development undertaking. The key to success of OFWM program in Pakistan is farmers' participation in execution of envisaged interventions through a community driven implementation approach.

The proposed works will also be carried out through the WUAs to be registered under "On Farm Water Management & Water Users Associations Ordinance [Act]-1981 (Amended 2001)" with following key responsibilities.

- Provide right of way for constructing watercourse,
- Arrange skilled and unskilled labour required for reconstruction / maintenance of earthen water channel, installation of water control structures, and lining of critical reaches,
- Procure construction materials for carrying out civil works,
- Settle matters of disputes amongst the water users in respect of channel alignment, fixation of Naccas, distribution of work, etc.,
- Make alternate arrangements for conveyance of water during execution of improvement works,
- Carry out civil works in accordance with standards and specifications under the supervision of OFWM field staff,
- Regularly undertake O&M of improved watercourses after its construction.

1.5.2 Component C2: Watercourse Improvements

Total 47,278 watercourses are planned to be improved under NPIWC-II. The share of various provinces / areas is Punjab 10,000, KP 13,000, Balochistan 20,389, Gilgit Baltistan 2,500, AJK 1,165 and ICT 224. The project will consider three categories of the watercourses to be taken for improvement:

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

1.5.3 Component C3: Construction of Water Storage Tanks

An on-farm water storage tank is a structural best management practice that enables to capture and store canal water, surface water runoff during the rainy season, tailwater from furrow irrigation etc., so that it may be used subsequently at required time of irrigation. These systems may be constructed with a water storage tank and an enlarged tailwater Recovery Ditch (TWRD).

The purpose of providing water storage tanks includes the followings:

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

It is planned that 14,932 On Farm Water Storage Tanks will be constructed during Project period to supply supplemental irrigation.

1.5.4 Component C4: Provision of Laser Land Leveling Units

Enhancement of water productivity at farm level is the most appropriate solution to redress water scarcity. Laser land leveling is the best option for improving water productivity through minimizing water application losses. Precision land leveling has been promoted in the country since inception of OFWM program. Use of Laser technology for the purpose is the latest development, which was introduced in the country during 1985. On average Laser Land Leveler has the capacity of doing precision land leveling of about 300 acres per annum.

Laser Land leveling technology is highly popular amongst farming communities in the country especially in the Punjab because of its quick returns. Keeping in view huge demand for the technology and massive economic returns, it has been planned to provide 11,610 Laser Land Leveling Units to the farmers/service providers under NPIWC-II. The component will strengthen LASER land leveling services in the country through provision of Laser Land Leveling Units to farmers/service providers on 50% subsidized rates (one-time financial assistance of Rs. 250,000/-, while the beneficiary farmer would contribute the entire remaining cost of the equipment).

1.6 PROJECT COVERAGE AND LOCATION

The work will be undertaken in the Province of Punjab, Khyber Pakhtunkhwa (KP), Balochistan, Gilgit Baltistan excluding Sindh. It also covers Gilgit Baltistan (GB), Azad Jammu & Kashmir (AJK) and Islamabad Capital Territory (ICT). The location maps with total targets are shown in Figure-1.1 & 1.2.

Project Targets:

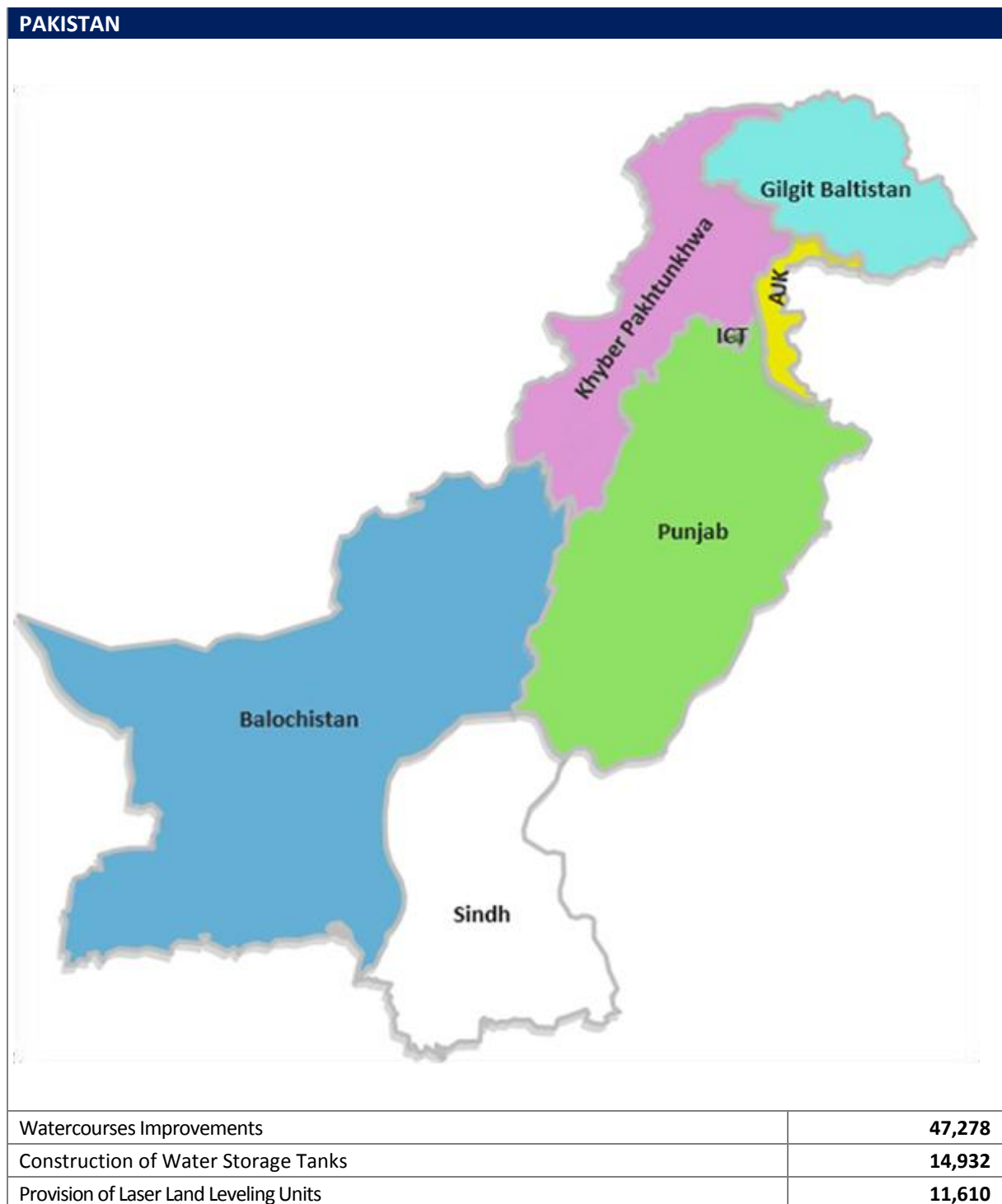


Figure-1.1: Location Map & Pakistan Targets

Zonal Targets:

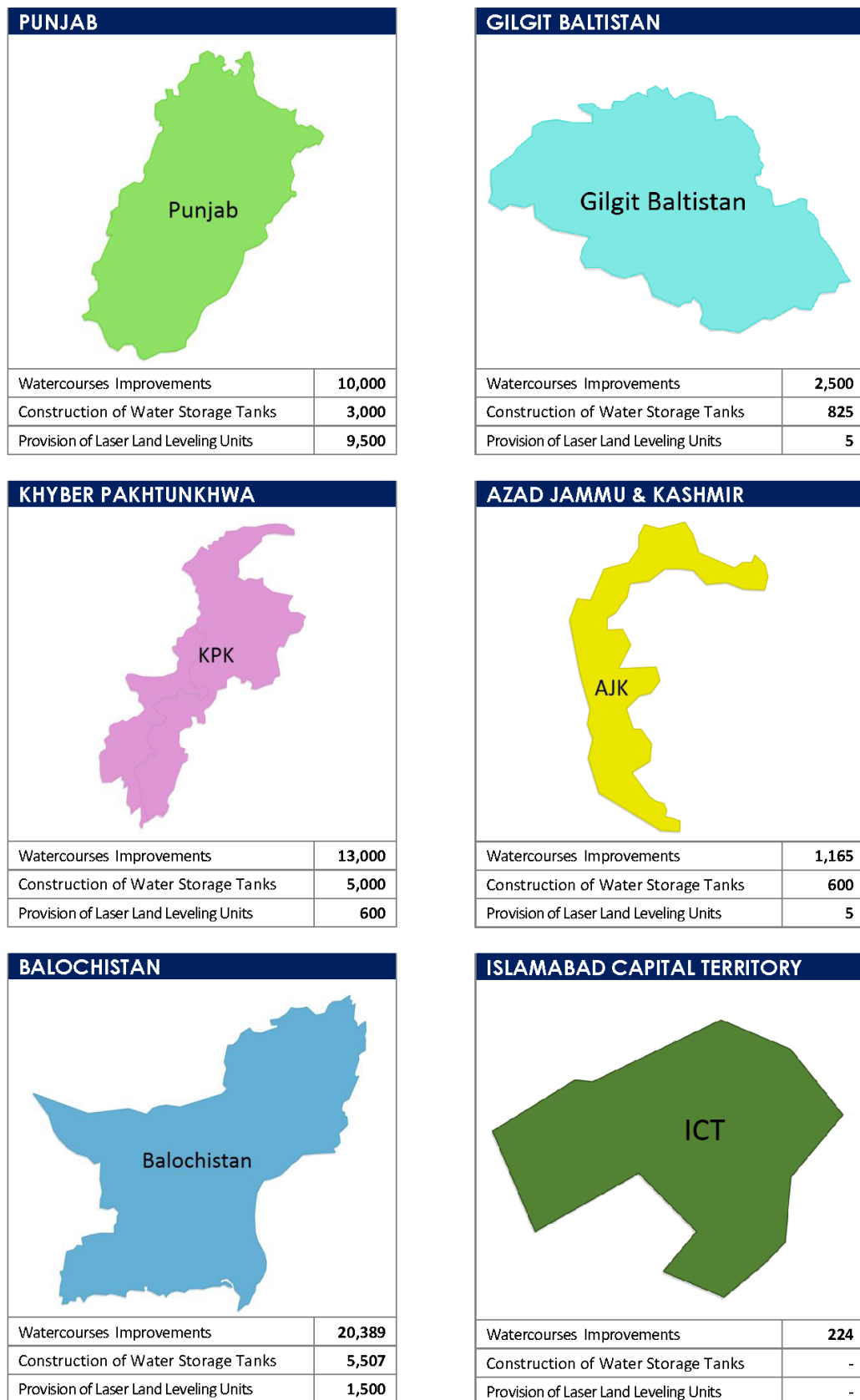


Figure-1.2: Location Maps & Zonal Targets

2. SCOPE AND SERVICES OF ME&IE CONSULTANTS

2.1 INTRODUCTION

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

2.2 OBJECTIVES

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

2.3 SCOPE OF THE SERVICES

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

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

- maintenance of watercourses, water storage tanks and laser land Levelers,
- viii) Economic impact of project interventions,
- ix) Carry out the impact evaluation of the project intervention on the economy and stakeholders,
- x) Develop a website containing information on facilities and services, applications, procedures, watercourses, water storage tanks and laser Levelers database, etc. (while the project staff will maintain the website),
- 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.*

2.4 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-2.2: Monitoring Strategy for ME&IE Activities

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

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

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

2.5 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. QUARTERLY MONITORING AND EVALUATION REPORT

3.1 INTRODUCTION

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

3.2 OBJECTIVE OF QM&E REPORT

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

3.3 REPORTING QUARTER

This First Quarterly Monitoring & Evaluation Report (QM&ER) covers the period from January 01, 2021 to March 31, 2021.

The First Quarterly Monitoring & Evaluation Report (QM&ER) has 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) ICT&AJK
3. Mr. Muhammad Yousaf Bhatti, DTL (Lahore) Punjab
4. Dr. Humayun Khan DTL (Peshawar) KP&GB
5. Mr. Rizwan Ahmad, DTL (Quetta) Balochistan
6. Dr. Fateh Muhammad Chaudhry, Irrigation Agronomist
7. Mrs. Munaza Bashir Tarar, Social & Gender Specialist
8. Mr. Waseem Ahmad Masood, FM Specialist
9. Mr. Rizwan Saleem, ICT/Technology Specialist

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

4. SUMMARY OF DELIVERABLES SUBMITTED TO THE CLIENT

This chapter is based on the summaries of reports already submitted to the client prepared by the M&E consultants during the first quarter, i.e. January 01, 2021 to March 31, 2021. Major activities completed includes: completion of the draft inception report, completion of final inception report, completion of monthly monitoring report for January 2021 & monthly monitoring report for February 2021.

4.1 DRAFT INCEPTION REPORT

The first deliverable "Draft Inception Report" was submitted to the client within stipulated time on December 21, 2020.

4.2 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.

Main concepts of the Inception Report are summarized as below:

The proposed project Phase-II will be beneficial for the country, as highlighted under:

• Water saving per Watercourse per annum:	123 AF
• Watercourse to be Improved:	47,278
• Estimated Water to be saved per annum:	5.82 MAF
• Estimated Economic Value per MAF:	\$400 Million
• Total Economic benefit due to water saving:	\$2.328 Billion
• Total Saving (PKR):	372.5 Billion

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

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 includes 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
 - Project Consultants
 - 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.

ME&IE Consultants will carry out all activities subject to the timely availability of the primary project data, as well as the availability of resources/funds.

4.3 FIRST MONTHLY MONITORING REPORT

The First Monthly Monitoring Report, January 01, 2021 to March 31, 2021 was submitted to the Client within stipulated time on February 10, 2021. The Report described the achievement during the period under discussions and also gave a work plan for the first quarter (Jan-Mar 2021).

4.4 SECOND MONTHLY MONITORING REPORT

The Second Monthly Monitoring Report, February 01, 2021 to February 28, 2021 was submitted to the Client within stipulated time on March 10, 2021. The Report described the achievement during the period under discussions and also gave a work plan for the First Quarter 2021 (January 1, 2021 to March 31, 2021).

4.5 REVIEW OF QUARTERLY AND MONTHLY REPORTS OF NWMC (NESPAK)

Due to non-availability of NWMC (NESPAK) deliverables to ME&IE Consultants, ME&IE Consultants are facing hurdles to evaluate working of NWMC. In this regard the cooperation of NWMC (NESPAK) and respective Directorates is required.

5. ACTIVITIES COMPLETED DURING THE REPORTING QUARTER

5.1 MOBILIZATION OF ME&IE CONSULTANTS TEAMS

The ME&IE Consultants were mobilized on November 20, 2020.

5.2 ESTABLISHMENT/RENOVATION OF ME&IE CONSULTANTS OFFICES

The renovation of National office Islamabad and all zonal offices has been completed and the office is functional except field offices whom the renovation work is about to complete.

5.2.1 Project National Office Islamabad

The renovation of ME&IE Consultants National office has been completed and the office is functional. Address: House No. 6-A, F-6/4, Embassy Road, Islamabad.

5.2.2 Zonal Office - Punjab

The renovation of ME&IE Consultants Punjab Zonal office has been completed and the office is functional. Address: First Floor, Orchard Heights, Arena Commercial, Bahria Orchard, Raiwind Road, Lahore.

5.2.3 Zonal Office - Khyber Pakhtunkhwa & Gilgit Baltistan

The renovation of ME&IE Consultants Khyber Pakhtunkhwa & Gilgit Baltistan Zonal office has been completed and the office is functional. Address: House # 358, Khyber Colony # 2, Tahkal Payan University Road, Peshawar.

5.2.4 Zonal Office -Balochistan

The renovation of ME&IE Consultants Balochistan Zonal office has been completed and the office is functional. Address: Bungalow # 543/03 Chiltan Road Quetta Cantt, Quetta.

5.2.5 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-5.1**.

Table-5.1: 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
Okara	Mianwali	Multan
Pakpattan	Narowal	Muzaffargarh
Sahiwal	Sargodha	Rahim Yar Khan
Sheikhupura	Sialkot	Rajanpur
Toba Tek Singh		Vehari

5.2.6 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-5.2**.

Table-5.2: 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		

5.2.7 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-5.3**. This is an indicative arrangement.

Table-5.3: 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

Team-1	Team-2	Team-3
Loralai	Kachi	Kech
Mastung	Kohlu	Kharan
Musakhail	Lehri	Khuzdar
Noshki	Naseerabad	Lasbella
Pishin	Sibi	Panjgor
Quetta	Sohbat Pur	Shaheed Sikandarabad
Sherani		Washuk
Zhob		
Ziarat		

5.2.8 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.

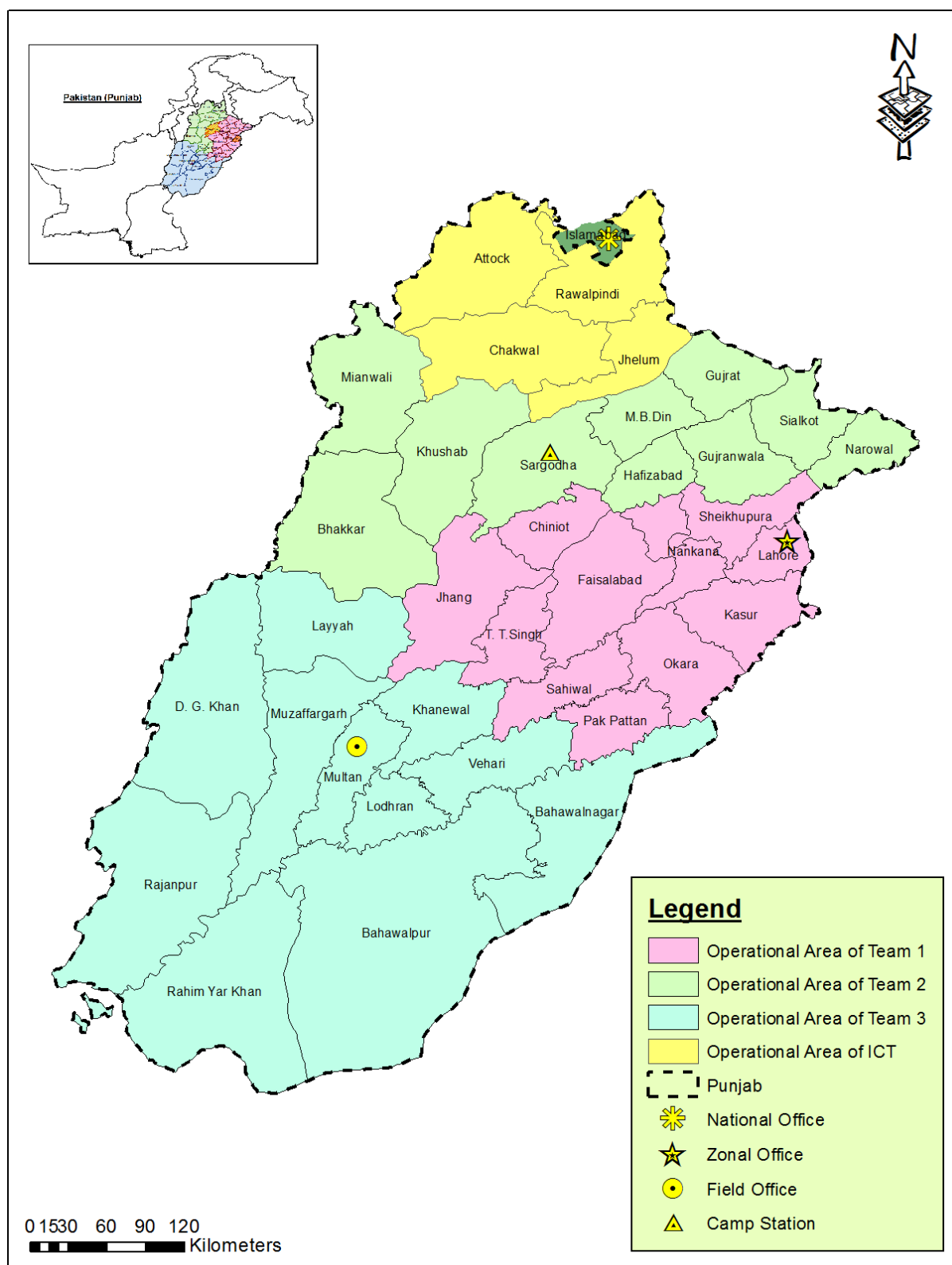


Figure-5.1: Field Teams placement and their operational areas in Punjab

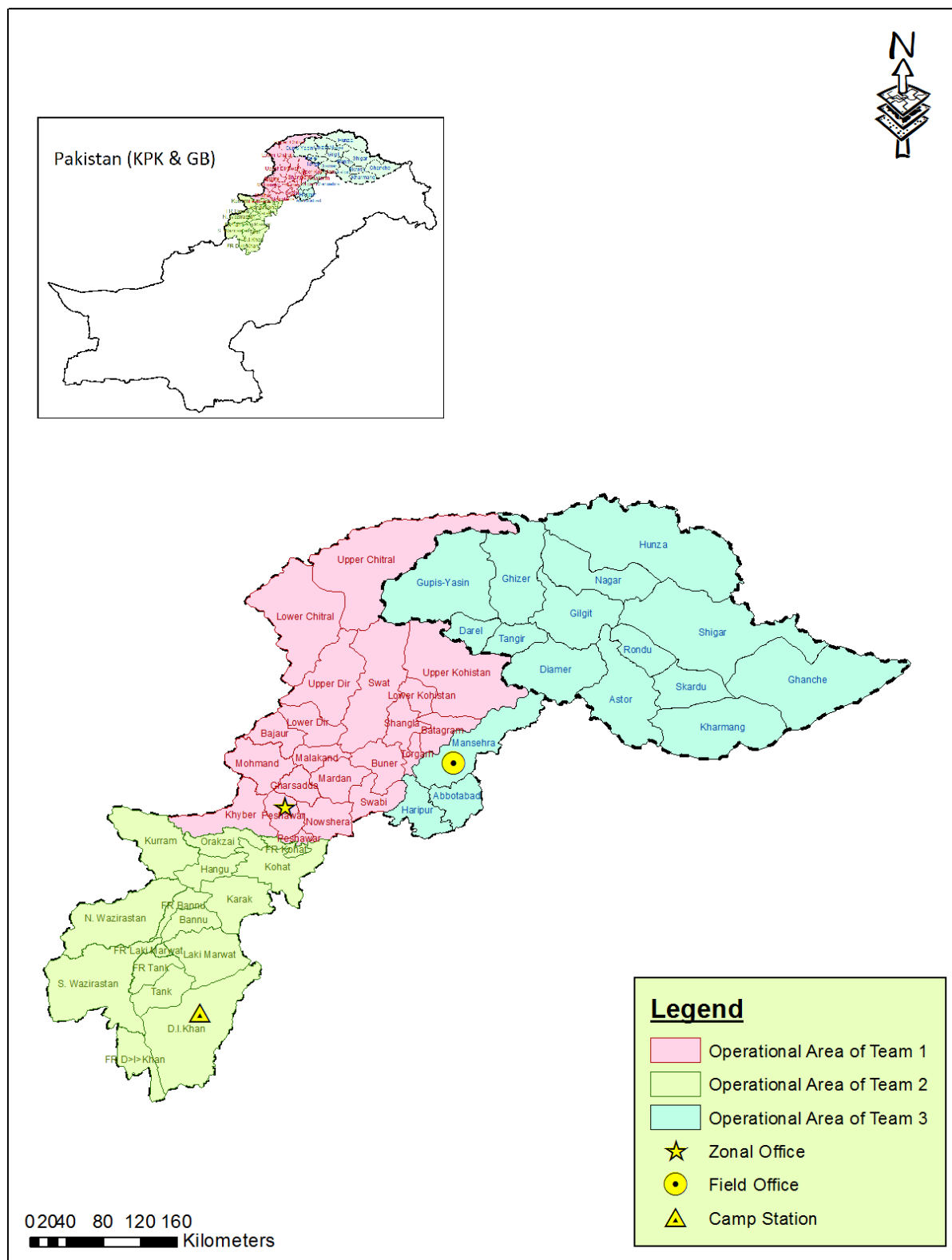


Figure-5.2: Field Teams placement and their operational areas in Khyber Pakhtunkhwa & Gilgit Baltistan

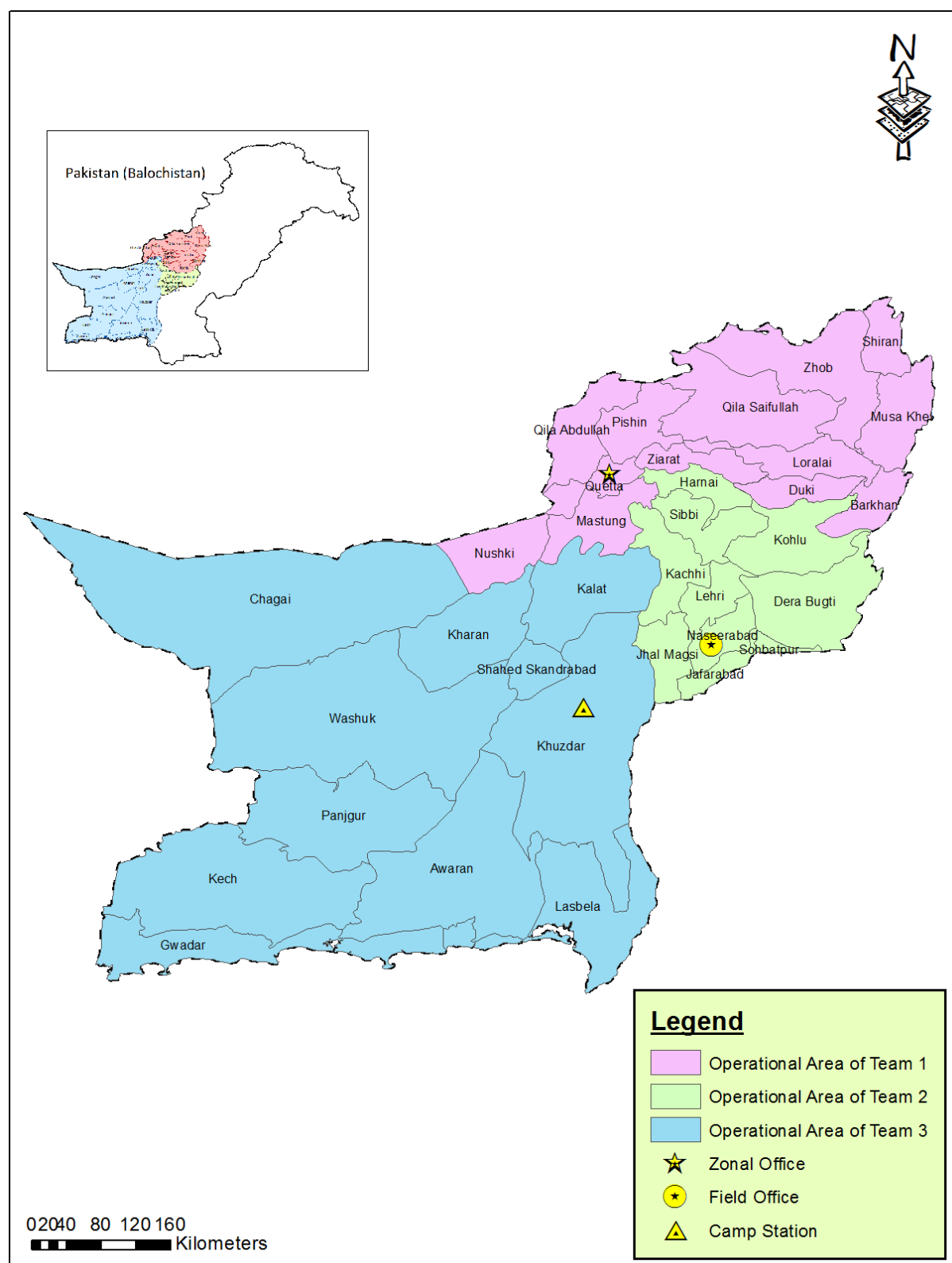


Figure-5.3: Field Teams placement and their operational areas in Balochistan

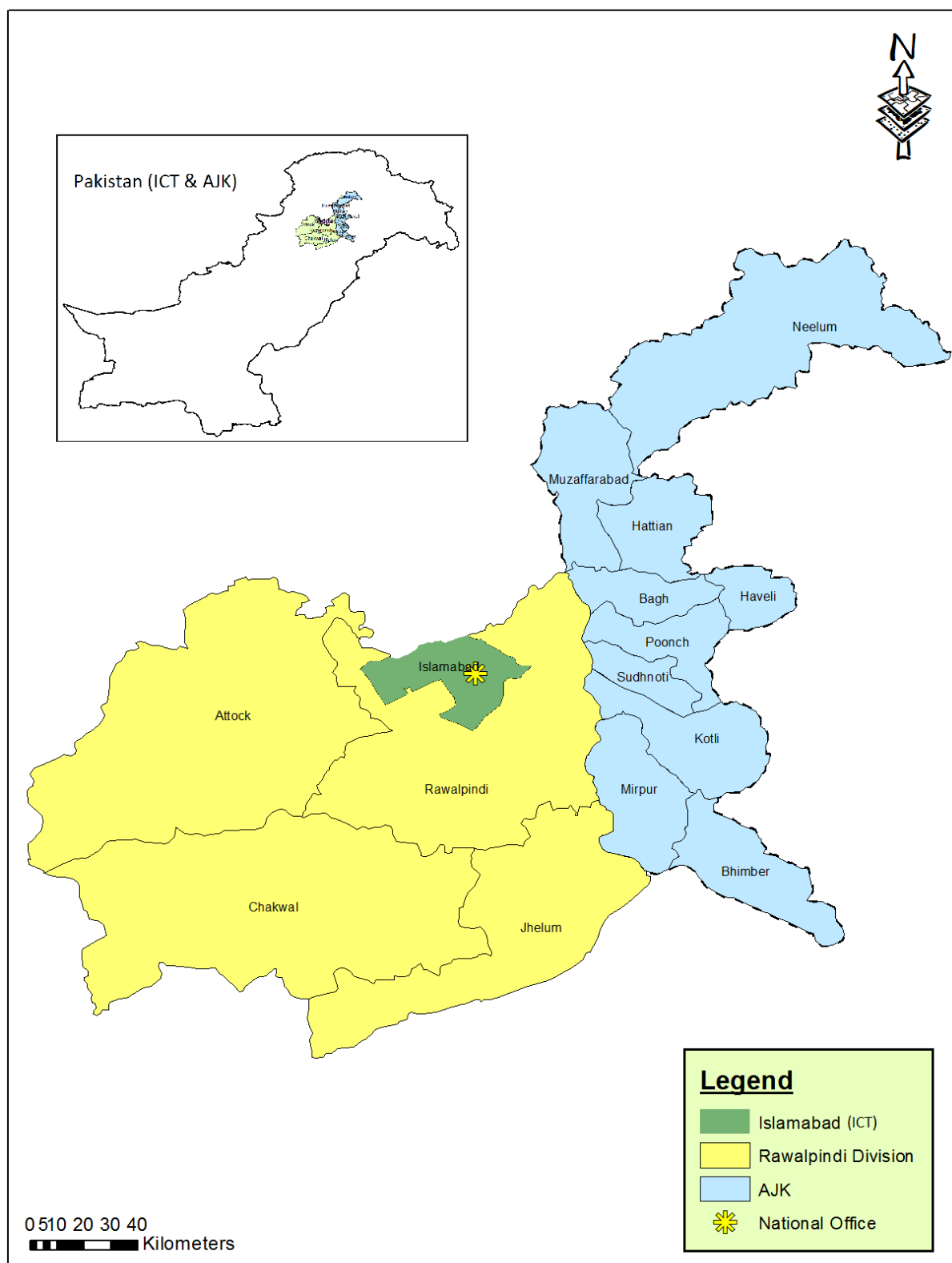


Figure-5.4: Field Teams placement and their operational areas in ICT, AJK and RWP Division

5.3 MEETINGS AND VISITS OF ME&IE CONSULTANTS - PUNJAB ZONE

5.3.1 1st Meeting of Core team with DGA OFWM Punjab

Date	December 22, 2020 at 3:00PM
Venue	Office of DGA OFWM Punjab, Directorate General Agriculture Punjab, Davis Road Lahore
Participants	
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)	
Meeting Agenda/Points discussed:	
<p>In this project introductory meeting, general issues were discussed regarding conducting ME&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&IE team and later on approved by the management and a camp station was proposed for 2nd 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>	

5.3.2 2nd Meeting of core team with DGA OFWM Punjab

Date	January 5, 2021 at 4:00PM
Venue	Office of DGA OFWM Punjab, Directorate General Agriculture Punjab, Davis Road Lahore
Participants	
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 Mehmood, 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-5.5: Meeting of core team with DGA OFWM Punjab Lahore

5.3.3 3rd Meeting with NWMC (NESPAK) (NESPAK) Lahore

Date	January 21, 2021 at 11.00 AM
Venue	NESPAK House, Lahore
Participants	
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:	
a.	Design and cost estimates approval for Watercourses and Water Storage Tanks.
b.	Interim Completion Report (ICR-I) and (ICR-II) of Watercourses.
c.	Completion Reports of Watercourses and Water Storage Tanks.
d.	Copies of the inspection reports on Laser Land Leveler.
e.	Any other certificate pertaining to project intervention.
f.	Provision Monthly and other progress reports.
g.	Templates for certificates will be shared by the Project Consultants. Whereas Technical Sanction is to be issued by OFWM department.
i.	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.
ii.	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-5.6: Meeting of core team with NWMC (NESPAK) Lahore

5.3.4 4th Meeting with DDA (OFWM), District Kasur

Date	January 11, 2021
Venue	Office of Deputy Director Agriculture (OFWM), Kasur City
Participants	
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-5.7: Meeting of TL and DTL Punjab Zone with Officials of OFWM, District Kasur

5.3.5 5th Meeting of Core team with DGA OFWM Punjab

Date	February 12, 2020 at 4:00PM
Venue	Office of DGA OFWM Punjab, Directorate General Agriculture Punjab, Davis Road Lahore

Participants

- vii. Mr. Hafiz Qaisar Yasin Deputy Director (Headquarters) OFWM, Lahore
- viii. Mr. Tahir Mehmood, Assistant Director (Technical) OFWM, Lahore
- ix. Dr. Muhammad Abdul Quddus, Team Leader ME&IE Consultants (NPIWC-II)
- x. Mr. Muhammad Yousaf Bhatti, Deputy Team, Leader (Punjab Zone) ME&IE Consultants (NPIWC-II)
- xi. Mr. Waseem Ahmad Masood Ch. Financial management Specialist ME&IE Consultants (NPIWC-II)

Meeting Agenda/Points discussed:

The meeting with Director General Agricultural (OFWM), Lahore and his designated officers was held on February 12, 2021 at 4.00 p.m. in the office of DGA (OFWM). The aim was to explore the in depth mechanism of working on different interventions of this Project. So that ME&IE Consultants may design monitoring tools in accordance with this said mechanism.

The meeting was supposed to be chaired by Mr. Malik Muhammad Akram, Director General Agriculture (OFWM) but he was unable to attend, as he was occupied in another official meeting.

However, in the said meeting general issues relevant to the working process of project's interventions were discussed in detailed. The meeting ended with Thanks and assuring cooperation to each other in future.



Figure-5.8: Meeting of core team with DGA OFWM Punjab Lahore



Figure-5.9: Meeting of core team with DGA OFWM Punjab Lahore

5.3.6 6th Meeting of core team with DGA OFWM Punjab

Date	February 23, 2021 at 3.00 pm
Venue	Office of DGA OFWM Punjab, Directorate General Agriculture Punjab, Davis Road Lahore

Participants

- vii. Malik Muhammad Akram, Director General Agriculture (OFWM)
- viii. Dr. Maqsood Ahmad, Director, Water Management Training Institute, Lahore
- ix. Hafiz Qaisar Yasin, Deputy Director (Headquarters) OFWM, Lahore
- x. Mr. Tahir Mehmood, Assistant Director (Technical) OFWM, Lahore
- xi. Dr. Muhammad Abdul Quddus, Team Leader ME&IE Consultants (NPIWC- II)
- xii. Mr. Muhammad Yousaf Bhatti, Deputy Team leader (Punjab Zone) ME&IE Consultants (NPIWC-II)
- xiii. Mr. Waseem Ahmad Masood Ch. Financial Management Specialist, ME&IE Consultants (NPIWC-II)
- xiv. Mr. Rizwan Saleem, ICT/Technology Specialist ME&IE Consultants NPIWC-II

- xv. Mr. Muhammad Tariq Khan, Deputy Team Leader, Punjab Zone, NWM Consultants (NPIWC-II)

Meeting Agenda/Points discussed:

Another meeting with Director General Agriculture (OFWM) was held in his office on February 23, 2021 at 3.00 pm.

The meeting started with the recitation of the Holy Quran. Mr. Muhammad Tariq Khan, Deputy Team Leader, Punjab Zone, NWM Consultants presented the current status of the activities of NWM Consultants in the Punjab Zone.

After the presentation given by NWM Consultants (Deputy Team Leader NWMC), DTL of ME&IE Consultants, Punjab Zone, Lahore presented the current status of the project activities. Different options of data sharing and reporting systems were discussed. The Director General Agriculture (OFWM) asked DTL (NWMC) to share all the basic data with ME&IE Consultants in order to facilitate them in the field activities. Meeting ended with the assurance to Continue cooperation with all of the stakeholders in future.



Figure-5.10: Meeting of core team with DGA OFWM Punjab Lahore



Figure-5.11: Meeting of core team with DGA OFWM Punjab Lahore

5.3.7 7th Meeting of core team with Director (Agri) OFWM Punjab

Date	March 04, 2021, at 11:00 AM
Venue	Office of Director (Agri) OFWM Training Institute, Lahore

Participants

- Dr. Muhammad Maqsood Ahmad, Director, OFWM Training Institute, Lahore.
- Dr. Muhammad Mujahid, Assistant Horticulturist, Training Institute, Lahore.
- Dr. Muhammad Abdul Quaddus, Team Leader ME&IE Consultants.
- Muhammad Yousef Bhatti, Deputy Team Leader (ME&IE) Consultants, Punjab Zone Lahore.
- Ch. Muhammad Aslam, Deputy Manager (ME&IE) Consultants, Punjab Zone Lahore.

Meeting Agenda/Points discussed:

The main objective of the meeting was to get in depth exposure of the training mechanism of farmers, particularly the service provider / operator of Laser Land Leveler units, an important intervention of the NPIWC-II

During the meeting, Dr. Maqsood, well explained the various Training programs, being organized by the institute. It was also Learnt that the institute also facilities in training on the Laser Land Leveler unit operator in other provinces. Dr, Quaddus explained the responsibilities of his team regarding this intervention and its role in water saving. Water saving' is the need of the day for our economy. Any development relating to this Technology is to be appreciated.

The team visited the institutes, saw various designs/modules of Laser Land Leveling units, and learned a lot of knowledge about this technology. The meeting ended with the thanks to the Chair and with commitment to continue cooperation in future to achieve the noble cause.



Figure-5.12: Meeting with Director, OFWM Training Institute Lahore



Figure-5.13: Meeting with Director, OFWM Training Institute Lahore

Increase in crop yield	Yes
Saving in time and labour	Yes
Reduction in water losses	Yes (about 80%)



Figure-5.14: Visit of New Watercourse at Lumbe Kadhe village, District Kasur

5.3.8 Field Visit(s) – Punjab Zone

1) Field Visit – District Kasur:

Field Visit	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
Farmer / Beneficiary Feedback:	
Increase in cropped area	Yes
Increase in delivery efficiency	Yes
Reduction in conveyance losses	Yes
Increase in cropping intensity	Yes

2) Field Visit – District Kasur:

Field Visit	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
Farmer / Beneficiary Feedback:	
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-5.15: Checking of Laser Land Leveler at Nizam Pura village, District Kasur

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

5.4.1 1st Meeting with NPC NPIWC-II Islamabad

Date	January 1, 2021
Venue	Office of NPC NPIWC-II
Participants	<ul style="list-style-type: none"> 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
Meeting Agenda/Points discussed:	The 1st Informal Introductory meeting was held with Mr. Tahir Anwar, NPC NPIWC-II along with CEO of JV firm EASEPAK

5.4.2 2nd Meeting with DDA OFWM Mardan

Date	January 7, 2021
Venue	Office of District Director OFWM Mardan
Participants	<ul style="list-style-type: none"> i. Mr. Bakhtawar Shah, District Director OFWM Mardan ii. Dr. Humayun Khan, DTL KP & GB Zone
Meeting Agenda/Points discussed:	Meeting was held with Mr. Bakhtawar Shah Sahib, District Director OFWM Mardan 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-5.16: DTL Meeting with DDA OFWM District Mardan

5.4.3 3rd Meeting with DDA OFWM Mardan

Date	January 18, 2021
Venue	Office of DDA OFWM Mardan
Participants	<ul style="list-style-type: none"> i. Mr. Bakhtawar Shah, District Director OFWM Mardan ii. Dr. Humayun Khan, DTL KP & GB Zone
Meeting Agenda/Points discussed:	Follow-up meeting was held with Mr. Bakhtawar Shah Sahib, District Director OFWM Mardan in his good office on January 18, 2021 regarding collection of requested data of NPIWC-II schemes, completed in District Mardan.

5.4.4 4th Meeting with DGA OFWM KP

Date	January 25, 2021
Venue	Office of DG OFWM KP
Participants	<ul style="list-style-type: none"> i. Mr. Javid Iqbal Khattak, DG OFWM KP ii. Dr. Humayun Khan, DTL KP & GB Zone
Meeting Agenda/Points discussed:	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-5.17: DTL Meeting with DGA OFWM KP Peshawar

5.4.5 5th Meeting with DD OFWM Swabi

Date	February 1, 2021
Venue	Office of DD OFWM Swabi
Participants	
iv.	District Director OFWM Swabi
v.	Dr. Humayun Khan, DTL KP & GB Zone
Meeting Agenda/Points discussed:	
The 1st Introductory meeting was held with District Director OFWM Swabi. Due to load shedding could not receive any data.	

5.4.6 6th Meeting in DD Office OFWM Swabi

Date	February 2, 2021
Venue	Office of DD OFWM Swabi
Participants	
iii.	District Director OFWM Swabi
iv.	Mr. Qayash Ahmad, WMO District Swabi
v.	Dr. Humayun Khan, DTL KP & GB Zone
Meeting Agenda/Points discussed:	
Acquired the basic data of Watercourse Improvement executed under NPIWC – II, from Qayash Ahmad, WMO, District Swabi.	



Figure-5.18: DTL Meeting with WMO District Swabi

5.4.7 7th Meeting in DD Office OFWM Swabi

Date	February 16, 2021
Venue	Office of DD OFWM Swabi
Participants	
i.	Mr. Munir Iqbal Site Engineer OFWM Swabi
ii.	Dr. Humayun Khan, DTL KP & GB Zone
Meeting Agenda/Points discussed:	
Visit to office of the OFWM Swabi and meeting with Munir Iqbal, Site Engineer.	

5.4.8 8th Meeting in DG OFWM Peshawar

Date	February 25, 2021
Venue	Office of DG OFWM Peshawar
Participants	
iii.	Staff DG OFWM office Peshawar
iv.	Dr. Humayun Khan, DTL KP & GB Zone
Meeting Agenda/Points discussed:	
Visited office of the DG OFWM Peshawar and inquired about the female participation in OFWM activities. The staff reported that: Due to cultural constraint most of the female involvement in farm activities are restricted to the house boundaries. However, in southern districts of the KP some of the farm households allow their female for crop cutting, cleaning, livestock grazing etc. They also reported that even majority of the farm households do not allow their females to cast their votes in the election	

5.4.9 9th Meeting in the Office of DG OFWM Peshawar

Date	March 15, 2021
Venue	Office of the DG OFWM Peshawar
Participants	
i.	Dr. Tahir Anwar, Federal OFWM cell
ii.	Mr. Javid Iqbal DG OFWM Peshawar
iii.	Dr. Muhammad Qudus NTL ME&IE Consultants
iv.	Prof. Dr. Humayun Khan, DTL ME&IE Consultants
v.	Dr. Rabnawaz Khan DD OFWM Peshawar
vi.	Mr. Wajid Khan WMO OFWM Peshawar
vii.	ME&IE Consultant Team (Two Persons)
viii.	3 other officials of DG OFWM office Peshawar
ix.	Saiful Islam Project Coordinator ISB
Meeting Agenda/Points discussed:	
Represented the KP zone as DTL ME&IE consultant NPIWC- II in a meeting scheduled by the Client Ministry of Food and National Security, Islamabad (Federal OFWM cell,) in the office in the office DG	

OFWM KP Peshawar. The following attended the meeting.



Figure-5.19: Meeting with Client in OFWM Directorate Peshawar



Figure-5.20: Meeting with Client in OFWM Directorate Peshawar



Figure-5.21: Meeting with DG OFWM Peshawar



Figure-5.22: Meeting with DG OFWM Peshawar

5.4.10 10th Meeting in the Office of DG OFWM Peshawar

Date	March 25, 2021
Venue	Office of the DG OFWM Peshawar
Participants	
i.	Mr. Javid Iqbal DG OFWM Peshawar
ii.	Prof. Dr. Humayun Khan, DTL ME&IE Consultants
iii.	Dr. Rabnawaz Khan DD OFWM Peshawar
iv.	Mr. Wajid Khan WMO OFWM Peshawar
v.	ME&IE Consultant Team members
Meeting Agenda/Points discussed:	
Visited office of the DG OFWM Peshawar in connection with our field activities and requested for the required data for our pretesting of the Monitoring Tools and deputing the relevant staff for the pretesting survey. Dr. Rabnawaz, District Director OFWM and Mr. Wajid WMO Peshawar promised extended all cooperation in this regard.	

5.4.11 Field Visit(s) – KP & GB Zone

1) Palato village, District Mardan:

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

Field Visit	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
Farmer / Beneficiary Feedback:	
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-5.23: Visit of Scheme-Watercourse at Palato village, District Mardan



Figure-5.24: Visit of Scheme-Watercourse at Palato village, District Mardan

2) Field Visit – Village Ambar, District Swabi

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

Field Visit	Description
Scheme name	Water Storage Tank
Cost of Construction	Rs. 4,20,000
Village name	Ambar
Date of visit	15-02-2021
ME&IE consultant staff	Dr. Humayun khan DTL
OFWM staff	Mr. Munir Iqbal Site Engineer
Beneficiary	Haider Zaman
Year	2020
Current status	Completed
Source of irrigation	Solar Tube well
Command Area	About 20 acres
Beneficiary Feedback	
Cropped area	Increased
Farming efficiency	Increased
Cropping intensity	Increased
Crop yield	Increased

Water losses	Reduced about 30%
Water saving	About 30 %
Time saving	Two to three hours



Figure-5.25: Visit of Scheme Tube well Water Storage Tank at village Ambar District Swabi

3) Field Visit – village Wazir Abad, district Swabi:

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

Field Visit	Description
Scheme name	37375/R
Cost of Construction	Rs. 4,80,000
Village name	Wazir Abad
Date of visit	22-02-2021
ME&IE consultant staff	Dr. Humayun khan DTL
OFWM staff	Mr. Munir Iqbal Site Engineer
Beneficiary	Tarif Fazal
Year	2020
Current status	Completed
Source of irrigation	Canal
Command Area	About 33 acres
Beneficiary Feedback	
Cropped area	Increased
Farming efficiency	Increased
Cropping intensity	Increased
Crop yield	Increased
Water losses	Reduced about 50%
Water saving	About 50 %
Time saving	Two to three hours per turn



Figure-5.26: Visit of Scheme-Watercourse at Wazir Abad District Swabi

5.5 MEETINGS AND VISITS OF ME&IE CONSULTANTS – BALOCHISTAN ZONE

5.5.1 1st Meeting of core team with DDA Technical OFWM Quetta

Date	December 30, 2020
Venue	Office of Deputy Director, Technical, OFWM Quetta
Participants	
i. Mr. Wali Tareen, Deputy Director, Technical, OFWM Quetta	
ii. Mr. Rizwan Ahmed, DTL Balochistan	
Meeting Agenda/Points discussed:	
The 1 st 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.	

5.5.2 2nd Meeting with Director OFWM Quetta

Date	December 30, 2020
Venue	Office of Director OFWM Quetta
Participants	
i. Mr. Munir, Director, OFWM Quetta	
ii. Mr. Rizwan Ahmed, DTL Balochistan	
Meeting Agenda/Points discussed:	
The 2 nd meeting was held with Mr. Munir, Director, OFWM on the same date i.e., 30 th 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.	

5.5.3 3rd Meeting with DDA Technical OFWM Quetta

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

5.5.4 4th Meeting with DGA OFWM Quetta

Date	January 11, 2021
Venue	Office of Director General, OFWM Quetta
Participants	
i. Director General, OFWM Quetta	
ii. Mr. Rizwan Ahmed, DTL Balochistan	
Meeting Agenda/Points discussed:	
The 4 th 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.	

5.5.5 5th Meeting with DTL, NWMC (NESPAK) Balochistan

Date	January 12, 2021
Venue	Zonal Office Quetta of DTL NWMC (NESPAK) Balochistan
Participants	
i. DTL, NWMC (NESPAK) Balochistan	
ii. Mr. Rizwan Ahmed, DTL Balochistan	
Meeting Agenda/Points discussed:	
The 5 th 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.	

5.5.6 6th Meeting with DGA OFWM Quetta

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

5.5.7 7th Meeting with DTL, NWMC (NESPAK) Balochistan

Date	January 18, 2021
Venue	Zonal Office Quetta of DTL NWMC (NESPAK) Balochistan
Participants	
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.

5.5.8 8th Meeting with DD OFWM, Agriculture Officer OFWM Balochistan, Quetta.

Date	February 03, 2021
Venue	Office of DG Agriculture, OFWM Balochistan, Directorate General Agriculture Balochistan, Saria Road, Quetta
Participants	
i. Mr. Behram Malghani, Agriculture Officer, OFWM ii. Mr. Qaseem Agha, Deputy Director, OFWM iii. Mr. Rizwan Ahmed, Dy Team Leader, ME&IE Consultants, Balochistan	
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> Discussed / briefed the role of ME&IE Consultants Discussed / requested for data regarding Social and Gender Component. Discussed and took information regarding women participation in Agriculture Sector. 	
Meeting Outcomes:	
<ul style="list-style-type: none"> Data/information received regarding women participation orally. 	

- Requested the data of schemes completed in all respect (file work) to make plan for ME&IE visits.

Meeting Outcomes:

- Project Consultants provided the data/information which they had checked and found completed in all respects.

5.5.10 10th Meeting with Agriculture Officer OFWM Balochistan, Quetta.

Date	February 11, 2021
Venue	Office of DG Agriculture, OFWM Balochistan, Directorate General Agriculture Balochistan, Saria Road, Quetta
Participants	
i. Mr. Behram Malghani, Agriculture Officer, OFWM ii. Mr. Rizwan Ahmed, Dy Team Leader, ME&IE Consultants, Balochistan	
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> Discussed / briefed the ongoing project activities of ME&IE Consultants. 	
Meeting Outcomes:	
<ul style="list-style-type: none"> The aim of visit was to collect the required official data regarding ME&IE activities, but due to non-availability of Technical Staff data could not be obtained. 	

5.5.9 9th Meeting between ME&IE Consultants Balochistan Zone

Date	February 09, 2021
Venue	Office of Project Consultants, NPIWC-II, Balochistan, Arbab Karam Khan Road, Khair Bakhsh Marri Street, Quetta
Participants	
i. Mr. Khalid Mehmood, Dy, Team Leader, Project Consultants, Balochistan ii. Mr. Subhan, Field Engineer, Project Consultants, Loralai Zone, Balochistan iii. Mr. Rizwan Ahmed, Dy Team Leader, ME&IE Consultants, Balochistan	
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> Discussed the ongoing project activities at both side Dy. TL, Project Consultants shared information regarding hiring of field staff and selected field offices to be established as per plan. Discussed the completed schemes (2019-20) 	

5.5.11 11th Meeting with DG, OFWM Balochistan, Quetta.

Date	March 05, 2021
Venue	Office of DG Agriculture, OFWM Balochistan, Directorate General Agriculture Balochistan, Saria Road, Quetta
Participants	
i. Director General, OFWM Quetta ii. Mr. Rizwan Ahmed, Dy Team Leader, ME&IE Consultants, Balochistan	
Meeting Agenda/Points discussed:	
A meeting held with Director General, OFWM in his good office on 5th March 2021 regarding data collection / inventory and briefed the progress of ME&IE Consultants.	

5.5.12 12th Meeting in the Office of DG, OFWM Balochistan, Quetta.

Date	March 08, 2021
Venue	Office of DG Agriculture, OFWM Balochistan, Directorate General Agriculture Balochistan, Sariab Road, Quetta
Participants	
i.	Secretary, Agriculture Department, Govt. of Balochistan
ii.	All Deputy Directors, OFWM
iii.	Mr. Rizwan Ahmed, Dy Team Leader, ME&IE Consultants, Balochistan
Meeting Agenda/Points discussed:	
A meeting was attended at the Director General, OFWM office, chaired by Secretary, Agriculture Department, Govt. of Balochistan on 8th March 2021. It was a Progress Review Meeting, all Deputy Directors, OFWM, Dy Team Leader, Project Consultants and Deputy Team Leader, ME&IE Consultants attended this meeting. All DDs and DTLs shared the progress of NPIWC-II. The forum advised the Secretary regarding timelines / policy to expedite the ongoing schemes. The forum discussed the progress of both financial years i.e. 2019-20 and 2020-21.	

5.5.13 13th Meeting in house in the Office of DTL Balochistan, Quetta.

Date	March 15, 2021
Venue	Office of DTL, ME&IE Consultants Quetta
Participants	
i.	Mr. Rizwan Ahmed, Dy Team Leader, ME&IE Consultants, Balochistan
ii.	Team members ME&IE Consultants of Balochistan zone
Meeting Agenda/Points discussed:	
A meeting held with Deputy Team Leader, Project Consultants in his office on 15 th March 2021 to collect data / inventory of 2020-21 schemes. The DTL, Project Consultants told ME&IE Consultants that the survey works of schemes 2020-21 are under progress, as soon as the survey/feasibility works done the same will be shared with ME&IE Consultants.	

5.5.14 14th Meeting with OFWM Staff Balochistan, Quetta.

A meeting held with OFWM staff on 22nd March 2021 regarding finalization field visits was planned to pre-testing MTs.

5.5.15 15th Meeting with DD OFWM Mastung Balochistan, Quetta.

Date	March 25, 2021
Venue	Office of Deputy Director, OFWM, Mastung
Participants	
i.	Deputy Director, OFWM, Mastung
ii.	Mr. Rizwan Ahmed, Dy Team Leader, ME&IE Consultants, Balochistan
Meeting Agenda/Points discussed:	
A meeting was held with Deputy Director, OFWM, Mastung in his office at district Mastung on 25th June 2021. The ME&IE Consultants shared findings of field visits and discussed the upcoming field visits plan and baseline survey activities. The ME&IE Consultants checked the files of Farmer/Beneficiaries and took the data as per requirement.	



Figure-5.27: Meeting with DD, OFWM, Mastug

5.5.16 Field Visit(s) – Balochistan Zone

4) 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	Description
Type of Scheme	PVC 4" Watercourse
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.

Farmer / Beneficiary Feedback:

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-5.28: View of Water Supply PVC Pipe at Killi Khali, Quetta



Figure-5.29: View of pipe passing through under Bypass Road



Figure-5.30: View of pipe joint section of PVC with RCC



Figure-5.31: View of command area at Killi Khali, Quetta

5) Field Visit – Killi Khali, District Quetta:

Field Visit	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

Field Visit	Description
Type of Scheme	New Watercourse & Rehabilitation of Old Watercourse
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-5.34: View of washing-pad at Killi Khali, Quetta



Figure-5.32: Visit of Watercourse at Killi Khali, Quetta at Killi Khali, Quetta



Figure-5.35: View of command area at Killi Khali, Quetta

6) Field Visit – Killi Shamoza, District Quetta:



Figure-5.33: View of Watercourse at Killi Khali, Quetta at Killi Khali, Quetta

Field Visit	Description
Type of Scheme	Water Storage Tank
Date of visit	December 31, 2020
Name of Place	Killi Shamoza, 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-5.36: DTL, Balochistan with Assistant Engineer, OFWM and Farmer, view of command area, scheme of WST at Killi Shamoza District Quetta



Figure-5.38: View of Water Storage Tank and Discharge System at Killi Shamoza, Quetta



Figure-5.39: View of old Water Storage Tank (Kacha) which has been dismantled now by farmers at Killi Shamoza, District Quetta.



Figure-5.37: View of Water Storage Tank, Command Area and Source of Water at Killi Shamoza, District Quetta

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

5.6.1 1st Meeting of DTL ICT & AJK with Director AES ICT

Date	January 20, 2020 at 11:00 AM
Venue	Office of Director AES ICT
Participants	
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)	
Meeting Agenda/Points discussed:	
In this project introductory meeting, Project NPIWC-II was discussed with stakeholder and discussed about coordination and provision of assistance for field activities.	



Figure-5.40: Meeting with Official of OFWM & DTL of PC, ICT

Date	March 08, 2021
Venue	FPMU NPIWC-II Islamabad
Participants	
i.	Mr. Tahir Anwar NPC (Chair)
ii.	Mr. Saif ul Islam Deputy Project Coordinator
iii.	Dr. Abdul Quddos TL
iv.	Dr. Sarwar Zahid DTL
v.	Mr. Rana Muhammad Usman Project Coordinator/ NPC Support
Meeting Agenda/Points discussed:	
Progress review of three-month work plan:	
Observations:	
Pre-Field Activities: Chair Directed to complete National office renovations, Procurement of Furniture, Equipment's Establishment of field offices till end of March.	
Field Activities: Chair Directed to complete the field activities as per work plan.	
ICT Assignment It was decided that ME&IE Consultant will give demonstration of Android based Mobile application till 15 March on one day notice of TL ME&IE & directed to ensure compliance of work plan.	
Coordination: Chair Directed to share consolidated report of each visit /meeting with concern DGs, DA, DDA, and ADA.	
Deliverables: ME&IE Consultants will confirm to submit monthly progress report within stipulated time frame i.e. 10 th of March.	
Concerns: Chair shows concerns to ME&IE Consultants over meeting timelines of Pre-Field activities & Field Activities as per Work plan.	



Figure-5.41: Progress Review Meeting at FPMU NPIWC-II Islamabad

5.6.2 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-5.42: Visit of Scheme-Watercourse at Phulgran, Barakoh Murree Road ICT

5.7 DETAIL OF COLLECTIVE MEETINGS OF ME&IE CONSULTANTS

5.7.1 1st Zoom Meeting of Team Leader with Core team ME&IE Consultants.

The 1st 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.

5.7.2 2nd Zoom Meeting of Team Leader with Core team ME&IE Consultants.

The 2nd 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.

5.7.3 3rd Meeting of Director G3EC Lead JV firm with Core team of ME&IE Consultants.

The 3rd 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.

5.7.4 4th Meeting of Director G3EC Lead JV firm with Core team of ME&IE Consultants.

The 4th 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.

5.7.5 5th Meeting of Team Leader with Core team ME&IE Consultants.

The 5th 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.

5.7.6 6th Meeting for Combined Draft Inception Report Workshop

The 6th 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 (NESPAC)
- 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.

5.7.7 7th 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.

5.7.8 8th Zoom Meeting of Team Leader with Core team ME&IE Consultants.

Date	February 2, 2021
Venue	Zoom Meeting
Participants	
i.	Core team of ME&IE Consultant of NPIWC-II project
Meeting Agenda/Points discussed:	
	A meeting was conducted through Zoom by the Team Leader ME&IE Consultants with all Deputy Team Leaders and Core Team Member on February 02, 2021 regarding progress up-dation for MMR.

5.8 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.

5.9 PRE-TESTING SURVEY OF MONITORING TOOLS

Pre-testing a survey is the only way to make sure that it is going to deliver to you the data that you were hoping to receive. While there may not be such a thing as a survey without a single response error, there are ways to make sure that the people answering the survey are providing you with the responses that you expect, and that the survey is working correctly.

Many survey researchers fail to pre-test the survey. But without pre-testing, it is difficult to find out if your survey has any logic problems, if the questions are too hard to understand, if it is prone to central tendency and habituation, if it has too high a dropout rate, or if it has any response bias. There are many issues that affect the quality of your data, and pre-testing is the only way to make sure that your survey is getting you as close to perfect answers as possible.

Six Ways to Pre-Test a Survey Questionnaire

Researchers' pre-test for a variety of reasons. At its core, pretesting is designed to make sure that people understand the questions, and that there isn't anything in the data that indicates that the information is inaccurate. Still, this is admittedly a difficult process – how can one assume that the answers they are receiving are accurate or inaccurate? What may seem like an anomaly may be honest answers, and what may look like sensible answers may be incorrect responses. In general, researchers look for the following in pre-test data to indicate that something may be wrong with their survey.

Skipped Questions

One of the most telling examples that a question may not be understandable is when it's skipped. While some people may answer the questions anyway, questions that are not understandable are the most likely questions to be skipped on a survey.

"Don't Know" Answer

Another common answer when a question is unclear is the "don't know" or default answer. If respondents are unclear what a question is asking, they may select the response that most closely resembles "don't know." If you don't have this option, it may be the "neither agree nor disagree," although confusion may arise if this is simply the most likely answer.

Data Differences

When businesses are willing to spend extra to run several pre-test surveys, another issue may be seen if identical questions have different meanings based on where they are in the survey. For example, if a question that shows up late in the survey gets a different response when it shows up early in the survey.

Hesitation Times

Some surveys show the length of time it takes for a person to answer a question. Hesitation times may be measured in some datasets to include long pauses that may indicate problems answering the questions.

Debriefing Respondents

Depending on your sample, it's not uncommon to debrief a small number of respondents before sending the survey out to a large sample of people. This helps to find out if they had any issues while taking the survey, problems with any of the question clarity, and more.

Question Types

Sometimes researchers play around with multiple questions to see if there are different answers for different styles of questions that are supposed to be asking the same thing. If so, one may be preferable to another.

Another method of pre-testing is to simply have those trained in survey research to review the test and see if there are any issues. Often times a confusing question can be noticed by a trained interviewer in a way that not even data analysis would show. Finally, there are ways to analyze the data (such as looking at variation in the results and whether that runs counterintuitive to the interviewer's beliefs), that may indicate a problem.

Pre-testing a survey is very important, there is an inherent assumption that problems will reveal themselves, and this simply may not be the case. Several papers have discussed problems with the belief that all problems will be revealed with these pre-testing methods, and while it is always going to be an important part of the survey process, researchers should be careful about believing too strongly that their survey problems have been addressed. However, making sure that the person is trained in survey research and conforming to best practices will go a long way.

Still, pre-testing remains an important part of survey research, and does need to play a role in the way you handle your own research process. Without it, problems may not be noticed or addressed, and you may be wasting your survey if you haven't caught an obvious error by the time the official survey has been conducted.

Pre-Testing of the Monitoring Tools in the Field Areas in the Following Zones

- Punjab Zone
- Balochistan Zone
- KP Zone

5.9.1 PRE-TESTING OF MTs IN THE PUNJAB ZONE

Field visits for pre-designed monitoring and Evaluation Tools were planned with the coordination of OFWM officers of Sheikhpura District (DDA-OFWM) and ADA-OFWM-muridke. The visit was made as under:

1-Date of Visit:

March 26, 2021 Muridke, ADA-OFWM Office and field
March 27 2021 DDA-OFWM Sheikhpura Office and Field.

2-ME&IE Consultants Team:

1. Muhammad Yousaf Bhatti
Deputy Team Leader (ME&IE Specialist)
2. Muhammad Rizwan Suleman
Field Team Engineer
3. Syed Ali Haider Shah
Field Team Engineer

3-OFWM officers and Staff Members:

The officers and staff members of OFWM provided necessary Basic data and Cooperated fully during the field visit.

List of Officers and Staff Members of OFWM:

Sr. No	Name	Designation
1	Mr. Malik Charagh Din	Deputy Director (Agri) OFWM – Sheikhpura.
2	Mr. Zafar Munir	Assistant Director (Agri) OFWM-Muridke, District Sheikhpura.
3	Mr. Muhammad Bilal	Sub Engineer OFWM Muridke.
4	Ch. Asif Mehmood	Sub-Engineer OFWM Sheikhpura.
5	Rana Muhammad Tanveer	Sub-Engineer OFWM Sheikhpura.
6	Mr. Muhammad Ilyas	Rodman OFWM Muridke.



Figure-5.43: Meeting with Deputy Director Agriculture OFWM District Sheikhpura



Figure-5.44: Meeting with Assistant Director Agri. OFWM Tehsil Muridke District Sheikhpura

In the field various intervention sites were visited and Team interviewed various respondents keeping in view the present Tools defines and suggestions.

4-Interventions and their Respondents:

Efforts were made to collect the information From Various types of Respondents on Pre-Designed Monitoring Tools. Details of the Respondents are given below:

List of Respondents for Pre-Testing of Monitoring Tools:

i) Water Users Association / Share Holder Beneficiaries of improvement of Watercourses Intervention.

1. Ch. Muhammad Naseem Chairman (WUA)
Watercourse No: 6140-R Village: Bheianwala, Tehsil Muridke District Sheikhpura
2. Mr. Ahmad Moaen Sindu
Watercourse No: 18800-R Village kukkar Gul, Tehsil and District Sheikhpura
3. Muhammad Nawaz (Treasurer WUA)
Watercourse No: 18800-R Village kukkar Gul, Tehsil and District Sheikhpura
4. Mr. Muhammad Adeel
Watercourse No: 6140-R Village Bheianwala Tehsil Muridke District Sheikhpura



Figure-5.45: Meeting with Assistant Director OFWM along with Chairman WUA of Tehsil Muridke



Figure-5.46: Data Collection From Farmers /Beneficiaries of Watercourse Bheinawala, Tehsil Muridke District Sheikhupura.

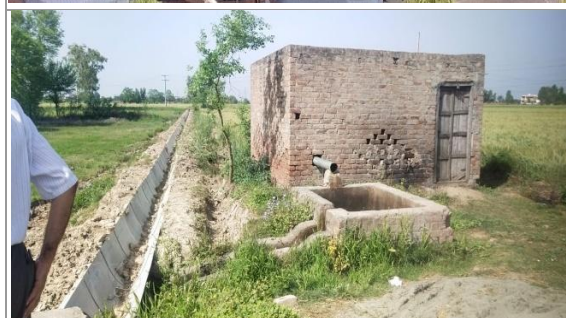


Figure-5.47: Visit of Watercourse 6140-R, Bheinawala, Tehsil Muridke, District Sheikhupura



Figure-5.48: Visit of Watercourse 18800-R, Kukkar Gil, District Sheikhupura

(ii) Laser Land Levelling Units (Service provider and User)

1. Mr. Rasheed Ahmad:
Village Bheianwala, Tehsil Muridke District Sheikhupura
2. Mr. Intizar Ahmad:
Chak No 29, Tehsil Muridke District Sheikhupura



Figure-5.49: Visit of Laser Land Levelling Units in Bheianwala of Tehsil Muridke District Sheikhupura



Figure-5.50: Data Collection from Laser Land Leveller Service Provider/User in Bheianwala of Tehsil Muridke District Sheikhupura

(iii) Water Storage Tanks Intervention (owner / Beneficiaries):

1. Habib-ur- Rehman Hashmi
Village Qiampur Tehsil and District Sheikhupura
2. Muhammad Mansha Anjum (Farm Manager)
Village Qiampur Tehsil and District Sheikhupura



Figure-5.51: Visit of water Storage Tank, Qiampur Tehsil and District Sheikhupura



Figure-5.52: Meeting with Water Storage Tank owner



Figure-5.53: Meeting with Water Storage Tank Farm Manager

5-Conclusions:

As a result of Interview with the respondents, Discussion with OFWM officers/Field staff, and Team member's own observations, certain modifications in questions, additions, deletions and some new questions are added in the existing Monitoring Evaluation Tools. The refinement of Monitoring Tools is under process. The Monitoring Tools used for pretesting are attached as **Annexure-E**.

The Monitoring and Evaluation Tools, used for Pre-Testing have been Filled, Partially Filled in Some Cases only Important Points were noted. Filled in, partially filled in and other tools are available in the form of Hardcopy. Action taken in the light of Pre-testing in the Field is summarized in para 4.8 Refinement of monitoring Tools.

6-Limitations:

There were Certain Limitations in Completion of all the tools and in all respects. The main limitations were:

- 1) Field Team members although were very Hard workers but inexperienced.
- 2) Limited time for in house training of the field staff.
- 3) Limited time for Covering/filling of about 20 tools of 4 interventions in the field.
- 4) Different Site Locations of interventions in the field.
- 5) The Measurement of water flow in the water Course without original equipment and record of reading on tools were not possible.
- 6) Finding out a Female Respondent and interview by the Field Team (males), on Social and Gender aspects was very difficult.

7-Suggestions:

For the Smooth operations of field activities following are the main Suggestions

- 1) The interviewee for filling the questionnaire for Social and Gender, the respondent should be female. Respondents may be taken from respondent's family members (6 beneficiaries on each watercourse).one respondent in each District will be a reasonable sample size OR one focus group/group meeting in each district.

During the field survey a social and gender specialists should accompany the team or this purpose.

- 2) Equipment is needed for measuring flow of water and recording the data on the tool. So, an Engineer is necessary in each field team.
- 3) Early mobilization of Field Team Social and Gender Specialists and DTL other team members are also required for assistance in field works.
- 4) In House training and field training of field teams should be initiated as early as Possible.

5.9.2 PRE-TESTING OF MTs IN THE BALOCHISTAN ZONE

To determine the effectiveness of Monitoring Tools (MTs), it is necessary to pretest it before actually using it on field. Pretesting can help us determine the strengths and weaknesses of our survey concerning question format.

Pretesting field visits is an important way to pinpoint problem areas, reduce measurement error, reduce respondent burden, determine whether or not respondents are interpreting questions correctly, and ensure that the order of questions is not influencing the way a respondent answer.

In response to pretesting of MTs the Team Leader, Balochistan planned to visit 07 sites of 02 districts i.e. Pishin (North Zone) and Mastung (South Zone) with his team. Due to time constraints, the Team Leader selected nearest districts from Quetta.

The Deputy Team Leader, Balochistan organized two days workshop/training for ME&IE Officers on Monitoring Tools (MTs) and Survey Manual / guidelines from 23rd to 24th March 2021.

The Training was covered following topics:

- a) To determine the effectiveness of Monitoring Tools (MTs), it is necessary to pretest it before actually using it on field. Pretesting can help us determine the strengths and weaknesses of our survey concerning question format.
- b) Pretesting field visits is an important way to pinpoint problem areas, reduce measurement error, reduce respondent burden, determine whether or not respondents are interpreting

questions correctly, and ensure that the order of questions is not influencing the way a respondent answer.

- c) Session on Survey Manual
- d) Selection of sites for Pre-Testing the MTs.

The team visited 07 sites as listed below:-

1. Watercourse, Haji Dinar Khan, District Pishin
2. Watercourse, PVC Pipe, Sidequallah, District Pishin
3. Watercourse, RCC Pipe, Sarwar Khan, District Pishin
4. Water Storage Tank, Haji Dinar Khan, District Pishin
5. Watercourse, Noor Muhammad, Mastung
6. Watercourse, Muhammad Arif Khan, Distt. Mastung
7. Water Storage Tank, Khair Muhammad, Distt. Mastung

1-Date of Visit:

- The first pretest field visit was conducted on 24th March 2021 of district Pishin
- The second pretest visit was made on 25th March 2021 of District Mastung.

2-ME&IE Consultants Team:

1. Rizwan Ahmed
Deputy Team Leader (ME&IE Specialist)
2. Qaisar Tareen
Field Team Engineer
3. Hamza Qureshi
Field Team Engineer

3-OFWM officers and Staff Members:

The officers and staff members of OFWM provided necessary Basic data and Cooperated fully during the field visit.

Collective List of Officers and Staff Members of OFWM:

Sr. No	Name	Designation
1	Haji Faqir Muhammad	Deputy Director
2	Abdul Naeem	Water Management Officer
3	Tanveer Ahmed	Sub Engineer, OFWM
4	Imran Agha	Water Management Officer
5	Shams-uddin Baqa	Agriculture Officer
6	Fazal Ahmed	Junior Engineer
7	Sher Ahmed	Sub Engineer
8	Daad Ali	Sub Engineer

Field Visit – Village Haji Dinnar Khan, District Pishin:

Field Visit	Description
Site Name:	Haji Dinnar Khan
District:	Pishin
Date of visit:	24 th March 2021
List of officials visited the site for pre-testing of Monitoring Tools	
1) Rizwan Ahmed, Dy Team Leader, ME&IE Consultants	
2) Abdul Naeem, Water Management Officer,	
3) Tanveer Ahmed, Sub Engineer, OFWM	
4) Imran Agha, Water Management Officer	
1) Qaisar Tareen, M&E Office, ME&IE Consultants	
5) Hamza Qureshi, M&E Office, ME&IE Consultants	



Figure-5.54: Group Session at Site of Haji Dinnar Khan (Watercourse and Water Storage Tank–2019-20)



Figure-5.55: Haji Dinnar Khan (View of Watercourse 2019-20)



Figure-5.56: Haji Dinnar Khan (View of Watercourse 2019-20)



Figure-5.57: Haji Dinnar Khan (View of Water Storage Tank 2019-20)



Figure-5.58: Haji Dinnar Khan (View of Water Storage Tank 2019-20)

Field Visit – Village Sarwar Khan, District Pishin:

Field Visit	Description
Site Name:	Sarwar Khan
District:	Pishin
Date of visit:	24 th March 2021
List of officials visited the site for pre-testing of Monitoring Tools	
1) Rizwan Ahmed, Dy Team Leader, ME&IE Consultants	
2) Abdul Naeem, Water Management Officer,	
3) Tanveer Ahmed, Sub Engineer, OFWM	
4) Imran Agha, Water Management Officer	
2) Qaisar Tareen, M&E Office, ME&IE Consultants	
5) Hamza Qureshi, M&E Office, ME&IE Consultants	



Figure-5.59: Site of Sarwar Khan (View of Manhole, 2019-20 RCC Pipe)



Figure-5.60: Site of Sarwar Khan (View of RCC Pipe 2019-20)

Field Visit – Village Sidiqullah, District Pishin:

Field Visit	Description
Site Name:	Sidiqullah
District:	Pishin
Date of visit:	24 th March 2021
List of officials visited the site for pre-testing of Monitoring Tools	
1) Rizwan Ahmed, Dy Team Leader, ME&IE Consultants	
2) Abdul Naeem, Water Management Officer,	
3) Tanveer Ahmed, Sub Engineer, OFWM	
4) Imran Agha, Water Management Officer	
3) Qaisar Tareen, M&E Office, ME&IE Consultants	
5) Hamza Qureshi, M&E Office, ME&IE Consultants	



Figure-5.63: Site of Sidiq-ullah (Scheme PVC Pipe, 2019-20 View of water discharge at Kacha Talab)

Field Visit – Village Noor Muhammad, District Mastung:

Field Visit	Description
Site Name:	Noor Muhammad
District:	Mastung
Date of visit:	25 th March 2021
List of officials visited the site for pre-testing of Monitoring Tools	
1) Haji Faqir Muhammad (Deputy Director)	
2) Rizwan Ahmed, Dy Team Leader, ME&IE Consultants	
3) Shams-uddin Baqa (Agriculture Officer)	
4) Fazal Ahmed (Junior Engineer)	
5) Sher Ahmed (Sub Engineer)	
6) Daad Ali (Sub Engineer)	
7) Qaisar Tareen, M&E Office, ME&IE Consultants	
8) Hamza Qureshi, M&E Office, ME&IE Consultants	



Figure-5.61: Site of Sidiqullah (Scheme PVC Pipe, 2019-20 View of Tube Well and source of electricity)



Figure-5.62: Site of Sidiqullah (Scheme PVC Pipe, 2019-20, View of Command Area)



Figure-5.64: Site of Noor Muhammad (view of watercourse, 2019-20, measuring to check as per design)



Figure-5.65: Site of Noor Muhammad (Scheme Watercourse - 2019-20, view of Apricot Tree)

Field Visit – Village Khair Muhammad, District Mastung:

Field Visit -	Description
Site Name:	Khair Muhammad
District:	Mastung
Date of visit:	25 th March 2021
List of officials visited the site for pre-testing of Monitoring Tools	
1)	Haji Faqir Muhammad (Deputy Director)
2)	Rizwan Ahmed, Dy Team Leader, ME&IE Consultants
3)	Shams-uddin Baqa (Agriculture Officer)
4)	Fazal Ahmed (Junior Engineer)
5)	Sher Ahmed (Sub Engineer)
6)	Daad Ali (Sub Engineer)
7)	Qaisar Tareen, M&E Office, ME&IE Consultants
8)	Hamza Qureshi, M&E Office, ME&IE Consultants



Figure-5.66: Site of Khair Muhammad (Scheme WST 2019-20)



Figure-5.67: Site of Khair Muhammad (Scheme WST 2019-20)

Field Visit – Village Muhammad Arif Khan, Distt. Mastung:

Field Visit -	Description
Site Name:	Muhammad Arif Khan
District:	Mastung
Date of visit:	25 th March 2021
List of officials visited the site for pre-testing of Monitoring Tools	
1)	Haji Faqir Muhammad (Deputy Director)
2)	Rizwan Ahmed, Dy Team Leader, ME&IE Consultants
3)	Shams-uddin Baqa (Agriculture Officer)
4)	Fazal Ahmed (Junior Engineer)
5)	Sher Ahmed (Sub Engineer)
6)	Daad Ali (Sub Engineer)
7)	Qaisar Tareen, M&E Office, ME&IE Consultants
8)	Hamza Qureshi, M&E Office, ME&IE Consultants



Figure-5.68: Site of Muhammad Arif Khan (Scheme PVC Pipe 2019-20)



Figure-5.69: Site of Muhammad Arif Khan (Scheme PVC Pipe 2019-20, checking discharge of water)



Figure-5.70: Site of Muhammad Arif Khan (Scheme PVC Pipe, 2019-20, view of tomato farm)

Observations:

1. We felt a lot of problems in collecting data during field visits as the Farmer/Beneficiaries were not present at site. However, labour (Harris) were present and we tried to get maximum information from them as per our MTs requirements.
2. It has been observed that Water Users Associations are not operative as per demand of project.
3. The filing works of OFWM staff were found weak, a lot of information was missing. However, after the entrance of Project Consultants they made a checklist/file for OFWM staff, hopefully the filing system will be improved gradually.

4. All MTs found necessary and had sufficient indicators to cover all Monitoring Evaluation and Impact Evaluation aspects,
5. It has been observed that payment procedure is not being followed by the OFWM Staff. As per criteria payment will be made on 03 three stage i.e. ICR, 2CR & FCR, but in most cases payments made in two installments as per need. However, Project Consultants made proformas of 03 individual payments which will be applicable in works of 2020-21. It also has been observed that payment records were not maintained in files by OFWM staff.
6. The Balochistan agriculture zones have been divided in two zones i.e. Barani and Canal. The most of districts are belongs to Barani Zone, in these areas water source are tube wells while rest of district i.e. Naseerabad Zone, Lasbella, Jhal Magsi and some areas of Dera Bugti belong to Canal Zones. It is, therefore, data regarding feedback of three beneficiaries from head, middle and tail are applicable in Canal Zone only. However, MTs covering this component are okay and such data will be obtained from canal areas in regular monitoring.
7. The MTs to determine velocity of water through Pygmy Meter could not be taken due to non-availability of Pygmy Meter, however, MTs indicators found okay and will be filled in routine monitoring accordingly.
8. There are different types of constructions being used throughout Balochistan, hence, it was difficult to cover all components in pre-testing. However, MTs are very much comprehensive and will cover all required data/information.

Recommendations

1. The OFWM assures ME&IE Consultants that Farmer/beneficiaries and beneficiaries other than members of WUA should be present at site so that data can be obtained as per M&E requirement.
2. The MTs as per result of site visits are being highlighted with two colours i.e. yellow and green, the yellow colour is indicating that these indicators look repetition or un-necessary while green colour is indicating that these indicators

should be added in MTs to make more comprehensive M&E data.

3. It is requested that a post of Social and Gender Expert (Female) should be filled on priority basis as it is very hard to collect such data without having female team members, especially in Balochistan's areas.
4. It is suggested that each team of three members should have one Engineer, so that engineering related works and quality of structures should be monitored properly.
5. It is therefore, that all MTs would not be applicable for each site due to different types of structure. It is suggested that before uploading data on Android Application, all Deputy Team Leaders may consult for their opinion to simplify the MTs.

Conclusion

As per pre-testing field visits and some field visits made in previous months, I found all MTs are very comprehensive and as per requirement of our service scope.

5.9.3 PRE-TESTING OF MTs IN THE KP ZONE

As per schedule the field team of NPIWC-II ME&IE Consultants KP Zone made field visits of district Peshawar for pretesting of the monitoring tools. Keeping in view the time constraint the field visits were restricted to the central district of the province.

With the help of OFWM staff, three villages: namely Mera Badhaber, Urmur Bala and Urmur Miana were selected for pretesting of the Monitoring tools. Selection of these villages were made on the basis of source of irrigation. On this criterion two sites one for tube well and the other for canal irrigation were selected. Four cases were selected in these two sites listed below.

1. Shah Hussain Tube well Watercourse Mera Badhaber,
2. Water Storage Tank (Aamer Khan) Mera Badhaber,
3. Watercourse No. 21200 Urmur Bala
4. Watercourse No. 70,000, Urmur Bala

1-Date of Visit:

- The first pretest field visit was conducted on 26th March 2021 in two sites of district Peshawar.
- The second pretest visit was made on 27th March 2021 in another two sites of District Peshawar.

2-ME&IE Consultants Team:

1. Dr. Humayun Khan
Deputy Team Leader (ME&IE Specialist)
2. Muhammad Bilal
Core Team Member Islamabad
3. Abdul Rauf Saad
Field Team Engineer

3-OFWM officers and Staff Members:

List of Officers and Staff Members of OFWM:

Sr. No	Name	Designation
1	Engr. Shaheen	Asstt Director, OFWM District Peshawar
2	Engr. Said Muhammad	WMO District Peshawar
3	Engr. Riyaz	Sub Engineer OFWM, District Peshawar

NOTE: Laser Land leveling activity has been terminated since 2018 due to lack of farmers' interest. However, it was told by the OFWM staff that those who need this activity, hire the services of machines from the local market.

I enquired telephonically from the office of the DG OFWM for the absence of laser land leveling. They explained that due to the non-availability of funds for the LLL, they couldn't intervene in this activity. Moreover, they also stated that, as private firms are involved in providing their services through the bidding process it will take a bit longer to initiate this activity for farmers after the release of funds from the concerned quarters.

1) Field Visit – Village Mera Badhaber, District Peshawar

Watercourse ID:	Shah Hussain Tube well Watercourse
Name of village:	Mera Badhaber
Union council:	Badhaber

Chairman WUA:	Shah Hussain
Tehsil & District:	Peshawar
Source of irrigation:	Tubewell
Total length of watercourse:	2100 meter
Estimated length of lining:	491 meters
Command area of watercourse:	40 Acres
No of beneficiaries:	07
Starting date:	25-01-2020
Completion date:	04-03-2020
Cost of Construction of WC:	Rs. 919,664 (80% OFWM 20% Farmer share)

Tehsil & District:	Peshawar
Source of irrigation:	Canal
Total length of watercourse:	4000 meters.
Estimated length of lining:	700 meters bricks work
PCPS:	800 meters
Command area of watercourse:	250 Acres
No of beneficiaries:	15
Starting date:	March 2020
Completion date:	April 2020
Cost of Construction of WC:	Rs. 24,42,383 (80% OFWM 20% Farmer share)

Water Storage Tank (Aamer Khan)	
Name of village:	Mera Badhaber
Union council:	Badhaber
Chairman WUA:	Aamer khan
Tehsil & District:	Peshawar
Source of irrigation:	Tube well
Shape of water storage tank:	Square
Size of water storage tank:	12x12 meters
Depth of WST:	1.36 meters
Command area of watercourse:	22 Acres
No of beneficiaries:	05
Starting date:	January 2020
Completion date:	March 2020
Construction Cost of watercourse:	Rs. 500,000 (80% OFWM 20% Farmer share)

Watercourse ID:	70,000, Hazar Khwani Branch
Name of village:	Urmur Miana
Village council:	Urmur Miana
PK	70
Chairman WUA:	Muhammad Naseer
CNIC:	17301-0105518-9
Cell No.	03127703935
Tehsil & District:	Peshawar
Source of irrigation:	Canal
Total length of watercourse:	5000 meters
Estimated length of lining:	757 meters
Command area of watercourse:	500 Acres
No of beneficiaries:	15
Starting date:	28-01-2020
Completion date:	24-03-2020
Construction cost of WC:	Rs. 2,268,440 (80% OFWM 20% Farmer share)

2) Field Visit – Village Urmur Bala, District Peshawar

Watercourse ID:	21200
Name of village:	Urmur Bala
Union council:	Urmur Bala
Chairman WUA:	Zalo Khan
CNIC No.	17301-1436652-3
Cell No.	03347585379



Figure-5.71: Field visit of Mera Badhaber Shah Hussain Tube well Watercourse District Peshawar along with Shaheen Assistant Director OFWM Peshawar



Figure-5.74: Another view of Aamer khan Water Storage Tank Mera Badhaber District Peshawar



Figure-5.72: Aamer khan Water Storage Tank Mera Badhaber District Peshawar



Figure-5.73: Another view of Aamer khan Water Storage Tank Mera Badhaber District Peshawar



Figure-5.75: Tube well Watercourse of Shah Hussain Mera Badhaber, District Peshawar



Figure-5.76: Solar System for Tube well of Shah Hussain Mera Badhaber, District Peshawar



Figure-5.77: Water Storage Tank of Shah Hussain Mera Badhaber, District Peshawar



Figure-4.78: Survey Team Field Visit of Watercourse ID No. 21200 Urmur Bala, District Peshawar



Figure-5.79: Survey Team Field Visit of Watercourse ID No. 21200 Urmur Bala, District Peshawar



Figure-5.80: Survey Team Field Visit of Watercourse ID No. 21200 Urmur Bala, District Peshawar



Figure-5.81: Survey Team Field Visit of Watercourse
ID No. 70095/L Mera kachori, District Peshawar



Figure-5.84: Survey Team Field Visit of Watercourse
ID No. 21200 Urmur Bala, District Peshawar



Figure-5.85: Survey Team Field Visit of Watercourse
ID No. 21200 Urmur Bala, District Peshawar



Figure-5.82: Survey Team Field Visit of Watercourse
ID No. 21200 Urmur Bala, District Peshawar



Figure-5.83: Survey Team Field Visit of Watercourse
ID No. 21200 Urmur Bala, District Peshawar

Main findings of field visits:

1. Monitoring tools were very comprehensive covering almost all aspects of activities taking place in the field. However, in most of the MTs unnecessary repetition was found among the **Identification of watercourse i.e; from serial No. 1.2 to 1.12.**
2. The OFWM staff had not maintained the file work in a systematic way so that one can easily understand the process of implementation.
3. The construction/improvement of watercourses made available more irrigation water, which resulted in increased crop production and application of modern seed technology (Hybrid seeds).
4. Water User Associations (WUA) were not functioning as per their mandated role. No WUA meetings were held for the maintenance of WCs. WUA were formed only for the official record.

5. Construction of watercourses and WSTs by OFWM has no effect on cropping patterns in the project areas.
 6. Questions asked in the village profile especially in part-B, i.; Village socio economic data S. No. 1 to 8 collected from the field is not authentic and is based on estimation. This data should be collected from the official sources.
 7. Large variations exist reported by the farmers among the agriculture output prices especially, fruits and vegetables within the same crop season. As these are collected on daily bases the prices of these commodities are very unstable.
 8. The data regarding the water flow (MT-17) Pygmy Current Meter (PCM) reading for determination of Velocity can't be collected without trained staff.
 9. No females were found in OFWM practices. The reason reported was the cultural barriers of Pakhtoon Society.
 10. Load shedding problem was reported in the areas where the source of irrigation was tube well. In these areas the farmers requested for the installation of solar energy systems along with the construction/improvement of watercourses/WSTs.
 11. Worth mentioning concern in the field survey is the cooperation of the OFWM staff. We can't succeed without their full cooperation in identifying the target farmers/watercourses.
2. For collecting the technical data, it is important to include an agriculture engineer as a member in the field team.
 3. Benefits accrued to the farmers due to OFWM intervention may be taken in real terms not in nominal terms so that real picture of improvement in farm benefits will emerge.
 4. Findings of the pretesting cannot be generalized because of the limited scope of the survey.

OUTCOME OF THE PRE-TESTING OF THE MONITORING TOOLS - ME&IE CONSULTANTS

The pre-testing of the Monitoring Tools in the field areas of the three Zones (Punjab, KP and Balochistan) was conducted from March 24, 2021 to March 27, 2021.

It was observed while the Pre-testing of the Monitoring Tools in the respective field areas that the MTs are very comprehensive covering almost all the aspects of the Monitoring and Evaluation and Impact assessments of the interventions.

However, it is also to be noted that some questions in the MTs may be relevant to some Zones while others to other Zones of the Province.

On the foregone, the present Monitoring Tools covering all the intervention will be refined and modified as per the field experience in the three Zones and the respondent's responses during the questions asked by them. Moreover, it is important to mention that due to unavoidable circumstances and COVID-19, the Pre-testing in the ICT, AJK and GB was not conducted. The Pre-testing of the MTs in these Units will be carried out shortly.

Moreover, at many sites the enough stakeholders were not present i.e. farmers etc. therefore ME&IE Consultants will perform the pre-testing activities again, if required.

5.10 REFINEMENT OF MONITORING TOOLS

The refinement of monitoring tools is under process after pre-testing, in accordance with the table below.

Conclusion

With the exception of some minor repetition, all the MTs are very comprehensive covering almost all aspects of monitoring and evaluation and impact assessments of the interventions of the OFWM department of the Khyber Pakhtunkhwa. However, it is also to be noted that some questions in the MTs may be relevant to some zones while others to other zones of the province.

Recommendations

1. The services of at least one OFWM employee should be ensured during the field visits so that the availability of the relevant farmers may be made possible.

Remarks for Revision of Monitoring Tools after Pre-Testing

1-WUA/ Improvement of Watercourse*

WC-MT NO	Title	Original MT Filling	Remarks
WC-MT-1	Watercourse Identification	Filled-2	Revised merged with MT-2
WC-MT-2	Brief Profile of sampled watercourse	Filled-2	Revised merged with MT-1
New	Identification and Brief Profile of water Course		Revised/Merged
WC-MT-3	List of watercourse Share Holders	-----	Revised
WC-MT-4	List of watercourse Beneficiaries	-----	Revised
WC-MT-5	Questionnaire for Social and Gender	-----	Revised
WC-MT-6.1	Brief Profile of Beneficiaries of Sample water Course	Filled	Original ok
WC-MT-6.2	cost of production and income on sampled farm	Filled	Revision Under Process
WC-MT-6.3	Beneficiaries Perception about Saving of water	Filled	Original ok
WC-MT-7	Beneficiaries feedback and environment	-----	Revised
WC-MT-8	Spot Check of watercourse improvement	Filled	Revised
WC-MT-9	Measurement of Water Flow in a Sampled Watercourse	-----	Original ok

*Title and no of MT may vary from the earlier tools title and number

2-Water Storage Tank*

WST-MT NO	Title	Original MT Filling	Remarks
WST -MT-1	Identification of owner of Water Storage Tank	Filled	Revised
WST -MT-2	Spot Check of Water Storage Tank and Feedback	Filled	Revised merged with MT-3
WST -MT-3	Beneficiary feedback for Water Storage Tank	-----	merged with MT-2

*Title and no of MT may vary from the earlier tools title and number

3-Laser Land Leveler*

LLL-MT NO	Title	Original MT Filling	Remarks
LLL -MT-1	Identification of Laser Land Leveler/Service Provider	Filled-2	Revised
LLL -MT-2	Checklist for training of service provider/operator of Laser Land Leveling	Filled-2	Revised merged with MT-3
LLL -MT-3	service provider feedback and Follow-up for laser unit	Filled-2	Original ok
LLL -MT-4	Beneficiary feedback of user of laser land leveler	Filled-2	Revised

*Title and no of MT may vary from the earlier tools title and number

5.11 METHODOLOGY OF SAMPLE SIZE DETERMINATION ME&IE CONSULTANTS (NPIWC-II)

Sampling is the process of choosing a representative portion (a respondent sample) of a population. The population is the entire group of items/ individuals of interest in a study for ME&IE study. Population comprises 4 different components viz Water Users Association, Watercourse Improvement, Water Storage Tank and Laser Land Leveler. Sampling design and sample size for each intervention will be drawn separately.

1. Sample Size of Watercourses

Generally, establishment of a watercourse association is a pre requisite for the improvement of a watercourse. So, the number of the target/sample will also represent the number/sample of water users associations. In all there are 47,278 watercourses, scattered in the project area. As stated earlier in the inception report Cochran's formula and its modifications are considered appropriate in project situations. For example, in the Punjab province sample size was estimated by using Cochran formula, as under.

$$n_o = \frac{(z)^2(p)(q)}{(e)^2}$$

Whereas:

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

Taking 90% confidence interval with $\pm 5\%$ precision
so, $z_{\alpha/2} = 1.645$ $e = 0.05$

$$p+q=1 \quad q=1-p$$

$$p=0.5 \quad q=1-0.5=0.5$$

So, while putting these values in formula we get:

$$n_o = \frac{(1.645)^2(0.5)(0.5)}{(0.05)^2}$$

$$n_o = 270.60 \sim 271$$

Cochran modified formula:

$$N=10,000$$

$$n = \frac{n_o}{1 + \left(\frac{n_o - 1}{10000} \right)}$$

$$= \frac{271}{1 + \left(\frac{271 - 1}{10,000} \right)}$$

$$= 263.8, \text{ say}$$

$$= 264$$

This modified formula is being used for sample size determination in each Province viz Punjab, KP and Balochistan. As regards the other units of the project GB and AJK sample size will be taken as 3 % of the population. As regards ICT areas whose population is too low, a sample size of 7 percent is considered measurable size for information from the target watercourses. The sample size is given in Table-5.4.

Table 5.4: Sample Size of Watercourses

Sr. No.	Province /Unit	Target Population (Watercourses)	Sample Size	Say
1	Punjab	10,000	264	300
2	KP	13,000	265	300
3	Balochistan	20,389	268	450
4	GB	2,500	(3 %)	75
5	AJK	1,165	(3%)	35
6	ICT	224	(7%)	15
		47,278	922	1175

Considering the ground reality of the provinces, the estimated sample size in Punjab and KP was enhanced to 300 in each. Whereas in Balochistan it was enhanced to 450. So, the overall sample size increased from 922 to 1175. It is more than 2.28 percent of the total watercourses in the project area. The Baseline study will be conducted in three phases and sample size will accordingly spread over three phases/periods. In each phase sampled watercourses will be divided into various districts of a respective province /unit to its allocated target.

The first phase baseline is likely to be started towards the end of 2nd financial year (2020-21) of this project. There are limited chances for getting information on (Before the startup of an intervention (particularly construction work of the watercourse) as most of the work might be completed or in the last stage of completion. It will not be possible to measure the water flow before improvement work starts. The second phase of baseline will be started in the beginning of the 3rd financial year of the project

(2021-22). There seems to be logic and ground realities that 1st and 2nd baseline will be conducted in one go and there will be only one report i.e. (Combine baseline)

The baseline will be started with watercourse improvement intervention (also applicable for other interventions) data at district level. Initially samples will be drawn proportionally from the target number of watercourse improvement intervention numbers for the year 2019-20, 2020-21. The sample will be chosen from the available number of watercourse (T.S. issued or improvement work is pending yet). Similarly, the 2021-22 target will be included later on.

Each watercourse has a Water Users Association. The association comprises its members/shareholders generally the landowners using the water of this watercourse. At the same time there are certain farmers which are non-owners/ non-member of this association.

Besides getting the feedback from the association, users are also interviewed for feedback. A list of total beneficiaries (owners/non-owners) on this watercourse will be prepared. Number of users on each watercourse varies from watercourse to watercourse. This reflects the beneficiary status regarding farm size, reburial status as well the farm location on the watercourse. Such data are used to draw the sample of beneficiaries.

In the second stage six beneficiaries (owners/non owners of land) on each watercourse will be selected with due representation of farm size, tendril status, location of the watercourses. In all these 7050 (1175 *6) beneficiaries will serve as feedback respondents of the baseline survey.

In addition to these six respondents generally male, one female member of these respondent's family using a convenient sampling method will also be sampled. This respondent will be asked questions regarding social structure and female participation in this project activities. So there will be in all 1175 extra respondents to be included in this sample size. In Punjab, there will be 300 extra female respondents.

2. Sample Size of Water Storage Tanks

We have used the same formula (Cochran's formula and its modifications) in estimation of sample size of water storage tank in the project area. The sample size becomes 300 (More than 2 %). Using the convenient sampling technique, the sample size is

further divided proportionally in the Provinces / Units as shown in table 5.5.

Table 5.5: Sample Size of Water Storage Tank

Sr. No.	Province /Unit	Target population (WSTs)	Sample Size
1	Punjab	3,000	60
2	KP	5,000	100
3	Balochistan	5,507	110
4	GB	825	17
5	AJK	600	13
		14,932	300

The sample size in each province/unit will be divided into three phases and subsequently into districts in proportion of their targets.

There is generally one beneficiary of the water storage tank, i.e., the owner of the water tank. Therefore, 300 beneficiaries are our respondent farmers for feedback. In Punjab such beneficiaries/owners will be 60.

Baseline /end-line survey of WST beneficial/owner will also be conducted on the same pattern as for watercourse improvement intervention.

3. Sample of Laser Land Leveler

While using the same formula, as used for other interventions, the sample size for the project area is estimated to be 374 (2.2 %). In the units GB and AJK, the sample size is 40% as the population is too tiny but needs representation. Sample is distributed among the population of each Province / Unit proportionally as in table 5.6.

Table 5.6: Sample Size of Laser Land Leveler

Sr. No.	Province /Unit	Target LLL Service Provider	Sample Size
1	Punjab	9,500	300
2	KP	600	20
3	Balochistan	1,500	50
4	GB	5	2
5	AJK	5	2
		16,610	374

This sample will be further subdivided into phases and then in each district proportionally on the basis of yearly target. Generally, each Laser land Leveler will be given to an individual who will provide services to the farmers. It is the respondent for the purpose of evaluation.

It is felt that users of the Laser Land Leveler are the real beneficiaries of this service. So at least one user of each service provider vicinity will be taken into account and will also be interviewed in addition to the interview of the Laser land Leveler service provider. So in all 374 users of Laser Land leveling unit will form our beneficiary / Respondents. In Punjab the number of such beneficiaries/ respondents becomes 300.

5.12 DEVELOPMENT OF ANDROID BASED APPLICATION

The development of Android based application has started in the second week of February 2021 and is near to complete.

5.13 WEBSITE DEVELOPMENT OF NPIWC-II

The development of Website of NPIWC-II has started in the first week of February 2021 and is about to complete.

5.14 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.

5.15 MIS DASHBOARD PROCESS MONITORING INPUT TOOLS

To monitor and track the project's component wise progress, ME&IE Consultants' developed data input tool placed at **Annex-F**, which will be later configured with Android application.

5.16 TRAINING SESSIONS OF FIELD TEAMS AND KEY STAFF ON MONITORING TOOLS & ANDROID APPLICATION

Mr. Rizwan Saleem ICT Manager has conducted the training session regarding using of Monitoring Tools & Android Application for all ME&IE Field Teams & Key Staff. Moreover, it was also decided to conduct series of virtual Training Sessions in the next month of April 2021, after pretesting of MTs in the field and refinement of MTs.

5.17 TRAINING ON MEASUREMENT OF WATER FLOW (PYGMY CURRENT METER)

A comprehensive Training Session for ME&IE Field Teams was conducted to use of Pygmy current meter for the measurement of Water Flow during the field activity.

6. 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.** The Tentative Work Plan for Second Quarter (April 01, 2021 to June 30, 2021) is under preparation and will be part of next MMR.

6.1 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.

6.2 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.

6.3 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.

6.4 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.

6.5 MATRIX OF RESPONSIBILITIES

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

6.6 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)	Submitted
Monthly Monitoring Report (Second)	Report to be submitted on March 10, 2021
Monthly Monitoring Report (Third)	To be submitted on Stipulated time.
Quarterly Monitoring & Evaluation Report	To be submitted on Stipulated time.

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

7. ISSUES NEED TO BE ADDRESSED

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




- Non-availability of complete up-to-date inventory / data of all interventions from Client, Provincial Agriculture departments & NWMC (NESPAK) till date.
- Due to non-availability of NWMC (NESPAK) deliverables/reports, ME&IE Consultants are facing hurdles to evaluate working of NWMC. In this regard the cooperation of NWMC and respective Directorates is required.
- Non-availability of resources in time from Client.

ANNEXES A to F

ANNEX-A: TENTATIVE WORK PLAN

ANNEX-A: TENTATIVE WORK PLAN

TENTATIVE WORK PLAN ME & IE CONSULTANTS - NPIWC-II

LEGEND	
ACTIVITY STARTS	
ACTIVITY ENDS	
ACTIVITY SPAN	

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				
1	Pre-field Activities:																
	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	Field Activities:																
	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	ICT Assignment:																
	3.1 Development of web site of NPIWC-II.																
	3.2 Development of Android based Mobile Application.																
	3.3 Testing of Monitoring tools on Android based system.																
	3.4 Data collection of interventions in MIS/GIS database.																
	3.5 Designing of dashboard of Project Interventions.																
4	Coordination																
	4.1 Meeting of DTLs with respective DTL of 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	Deliverables:																
	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. (LOEWMI)	Project Consultants	ME&IE Consultants
1	Provision of Pre-requisite data of project components for starting of Field Activities: <ul style="list-style-type: none"> • Organization of Water Users Associations, • Watercourses Improvement, • Water Storage Tanks, • Laser Land Levelers, 	○	●	-	-
2	Certification of operational documents of the project, <ul style="list-style-type: none"> • Design, cost estimates, completion reports of watercourses, • Design, cost estimates, completion reports of water storage tanks, 	○	○	●	-
3	Undertake baseline, midline and endline surveys of the project activities/interventions in all the project areas.	-	-	-	●
4	Develop monitoring strategy, framework and Result Based Monitoring (RBM) indicators,	-	-	-	●
5	Assessing the water saving per annum on watercourse and water storage tanks as well as aggregate due to the project interventions.	-	-	-	●
6	Assessing the improvement in water availability due to provision of conveyance system.	-	-	-	●
7	Assessing the economic benefits to the agriculture in terms of increase in yield, irrigated area, cropping pattern, cropping intensity, farm income and employment in command area of watercourses and water storage tanks.	-	-	-	●
8	Assessing the extent of community mobilization, financial and administrative sustainability of Water Users' Associations and ensuring the maintenance of watercourses, water storage tanks and laser land levelers.	-	-	-	●
9	Economic Impact of project interventions.	-	-	-	●
10	Carryout impact evaluation of the project investment on the economy and stakeholders.	-	-	-	●
11	Preparation of Monthly, Quarterly and Annual Monitoring, Evaluation and Validation Reports of the project activities.	-	-	-	●
12	Develop a website containing information of facilities and services, applications, procedures, watercourses, water storage tanks, and laser levelers database etc. (Maintaining website should be the responsibility of project staff).	-	-	-	●
13	Provide technical support for the development of a custom-designed mobile application (Android) to capture on-site project progress, geo tagged photos; should be synchronized with the central MIS/GIS database and application for instant reporting and feedback to the	-	-	-	●

ANNEX-C: MONITORING LOG-FRAME

Annex-C: Monitoring Log-frame

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
C1: Organization of Water Users' Associations (WUAs)	Reactivation of existing / organization of water users' associations. Ensuring one on each target watercourse. Total WUAs ensured 47,278.	a) Community mobilization at 47,278 watercourses	a) Total 47,278 WUAs reactivated / established/registered	a) Right of way of 47,278 watercourses available b) Skilled and unskilled labour required for watercourse improvement available c) Construction material for civil works of watercourses procured d) Alternate arrangement for water conveyance during construction made e) Watercourse improved	a) Disputes among the water users settled b) Farmers' branched improved c) Water allocation made amicably d) Maintenance of watercourses, WST and laser units done e) Cooperation among farmers increased	a) 47,278 watercourses improved and 15 percentage points conveyance losses reduced b) Litigation among farmers reduced	a) The functioning of the WUAs will be established through sample interview surveys of WUAs members twice during the project period
C2: Watercourses Improvements	Improvement of 47,278 watercourses on	a) Establishment of 47,278 Water users'	a) 47,278 WCAs established;	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: • Precast concrete parabolic lining (PCPL) segments, or • Rectangular brick masonry, or any other method as approved by the project	b) 47,278 WCAs registered; c) 47,278 watercourses improved and lined;	watercourses decreased by about 15 percentage points. b) 1.654 million households benefited from the activity; c) 11.347 million acres served with improved watercourses	improved watercourses by 5-24%; b) Increase in crop yields. c) Increase in irrigated area d) Increase in agriculture output per unit of water by about 37%	b) Increase in employment for farm labour; c) Reduction in poverty; d) Enhanced food security for the country.	out at before and after watercourse improvement on 2-5% sample basis; b) Agriculture survey before and after watercourse improvement on 2-5% sample basis; c) The survey will determine: • Cropping pattern before and after the improvement; • Cropping intensities before and after improvement; • Before and after crop yields;

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
							<ul style="list-style-type: none"> • Before and after employment; 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.
C3: Construction of Water Storage Tanks (WSTs)	a) Construction of 14,932 water storage tanks	a) 14,932 small farmers mobilized to construct water storage tanks for irrigation b) They agree to contribute 40% of the cost	a) 14,932 WSTs constructed b) 14,932 WSTs operated and maintained	a) Water which was otherwise largely going to be wasted is saved b) Irrigation provided at critical stages of the crops c) Flexibility achieved for irrigation	a) More area irrigated b) Increased cropping intensities	a) Increased crop yields b) Increased total crop output quantum c) Increased farm income d) Increased farm employment	a) 2-5% sample of WSTs will be surveyed b) A data collection form will be designed to measure water saving due to WSTs c) The forms used for baseline and

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

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

ANNEX-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 th of the following month
4	Baseline Survey Report	10	4 months after start of the assignment
5	Midline Survey Report	10	In the middle of the assignment
6	Endline Survey Report	10	At the end of the endline survey
7	Quarterly Monitoring and Evaluation Report	10	10 th of the first month of following quarter
8	Annual Monitoring and Evaluation Report	10	During first month of following year
9	Draft Assignment Completion Report	5	At completion of physical works / activities
10	Final Completion Report	25	At completion of works as well as financial transactions
11	Special Reports	10	As and when required

ANNEX-E: Monitoring Tools

WC Monitoring Tool-1

WATERCOURSE IDENTIFICATION

1. IDENTIFICATION		
DB.#	Q.#	Field Name
	1.1	Province/ Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Field Team
	1.6	Union Council
	1.7	Village
	1.8.1	NA Constituency
	1.8.2	PP Constituency
	1.9	Watercourse Name
	1.10	Watercourse Location
	1	Canal Area
	2	Non-Canal Area
If 'Canal area' in Q.# 1.10 then Continue with Q.# 1.11		Otherwise continue with Q# 1.15
	1.11	Canal
	1.12	Branch
	1.13	Distributary
	1.14	Minor
	1.15	Type Of Water Source
	1	Perennial Canal
	2	Annual Canal
	3	Tube Well
	1.16	Category Of Watercourse To Be Improved
	1	Regular (New)
	2	20 Years Old
	3	Additional Lining
	1.17	Type Of Watercourse
	1	Rectangular/ Bricks
	2	Parabolic
	3	Pvc 3"
	4	Pvc 4"

	5	Rcc Pipe
	6	Stone Masonry
	1.18	Location Of Watercourse On The Minor/Canal
	1	Head
	2	Middle
	3	Tail
	1.19	Financial Year
	1.20	Comments

WC Monitoring Tool-2

BRIEF PROFILE OF SAMPLED WATERCOURSE

1. IDENTIFICATION		
DB.#	Q.#	Field Name
	1.1	Province/ Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Field Team
	1.6	Union Council
	1.7	Village
	1.8	Name of Chairman
	1.9	Contact # of Chairman
	1.10	NA Constituency
	1.11	PP Constituency
	1.12	Watercourse Name
	1.13	Watercourse Location
	1	Canal Area
	2	Non-Canal Area
If 'Canal area' in Q.# 1.11 then Continue with Q.# 1.12		Otherwise continue with Q# 1.16
	1.12	Canal
	1.13	Branch
	1.14	Distributary
	1.15	Minor
	1.16	Type of Water Source
	1	Perennial Canal
	2	Annual Canal
	3	Tube Well
	1.17	Category Of Watercourse To Be Improved
	1	Regular (New)
	2	20 Years Old
	3	Additional Lining
	1.18	Type Of Watercourse
	1	Rectangular/ Bricks

	2	Parabolic
	3	Pvc 3"
	4	Pvc 4"
	5	Rcc Pipe
	6	Stone Masonry
	1.19	Location Of Watercourse On The Minor/Canal
	1	Head
	2	Middle
	3	Tail
	1.20	Financial Year
	1.21	Designed Discharge (LPS)
	1.22	Additional discharge?
	1	Yes
	2	No
If 'Yes' in Q#-1.22 then Continue with Q#-1.23		Otherwise goto to Q#1.24
	1.23	Additional discharge source
	1.24	Quality of Ground water
	1	Sweet
	2	Brackish
	1.25	Total culturable Command Area (CCA) (Acres)
	1.26	Total Water User's Nos.
	1.27	Status of watercourse to be improved
	1	Technical Sanction(TS) Issued
	2	Intermediate Completion Report (ICR-1) Issued
	3	Intermediate Completion Report (ICR-2) Issued
	4	Final Completion Report(FCR) Issued
	1.28	Coordinates & picture at Mogha
If Q#-1.27 is at Technical sanction Continue with Q#-1.30		Otherwise goto to Q#1.29
	1.29	Coordinates & picture of Kacha and Lining of work course at lining end
	1.30	Coordinates & pictures at Kacha end
	1.31	Sanctioned lining length of watercourse
	1.32	Date of Technical Sanction(TS)
	1.33	Sanctioned Cost (rupees)
	2	COMMENTS OF INTERVIEWER

WC Monitoring Tool-3

LIST OF WATERCOURSE SHAREHOLDERS

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Watercourse ID: _____
2.SHAREHOLDERS LIST		
	2.1	Name of Shareholder
	2.2	Gender
	1	Male
	2	Female
	2.3	Father Name
	2.4	Area Owned (Acres)
	2.5	Area Rented In (Acres)
	2.6	Area Rented out (Acres)
	2.7	Total Area operated (Acres)
	2.8	Status in association
	1	Chairman
	2	Treasurer
	3	Secretary
	4	Member
	5	Not Member
	2.9	Location on WC
	1	Head
	2	Middle
	3	Tail
	3	COMMENTS OF INTERVIEWER

WC Monitoring Tool-4

LIST OF WATERCOURSE BENEFICIARIES/FARMERS

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Watercourse ID:
2. BENEFICIARY/FARMER LIST		
	2.1	Name of Share Croppers / Harries / Tenant / etc.
	2.2	Father Name
	2.3	Gender
	1	Male
	2	Female
	2.4	Total area operated in (Acres)
	2.5	Location on watercourse(WC)
	1	Head
	2	Middle
	3	Tail
	3	COMMENTS OF INTERVIEWER

WC Monitoring Tool-5

QUESTIONNAIRE FOR SOCIAL & GENDER

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Watercourse ID: _____
	1.2	Name of Respondent
	1.3	Age (Years) (till to date)
	1.4	Level of Education
	1	Illiterate
	2	Primary
	3	Middle
	4	Matric
	5	Intermediate
	6	Graduate and above
	7	Madrassa Education
	8	Literate
	1.5	Occupation
	1	Housekeeping
	2	Agriculture
	3	Labor
	4	Govt./Private job
	5	Business
	6	If any other, Specify? _____
2.SOCIAL INFORMATION		
Land, Cultivation and Irrigation Information		
	2.1	Are you currently married?
	1	Yes
	2	No
	2.2	Do you own a piece of agricultural land?
	1	Yes
	2	No
	3	Do not Know
	2.3	How many acres?
	2.4	How much land is as tenancy? (Acres)
	2.5	Who cultivates your land?

	1	I myself
	2	My father
	3	My brother
	4	My husband
	5	Hari / Tenant
	6	Do not know
	2.6	Do your family/husband own a piece of agri. land or work as tenant?
	1	Owner Land
	2	Worked as tenant
	3	Both owner and tenant
	4	Do not Know
	2.7	Do you participate in farming activities?
	1	Yes
	2	No
	2.8	Do you people face problem regarding the irrigation water?
	1	Yes
	2	No
	3	Never asked
	2.9	Are you consulted in making farming decisions regarding your land?
	1	Always
	2	Rarely
	3	Never
	2.10	Are you consulted in spending income at your household?
	1	Always
	2	Rarely
	3	Never
	2.11	Are you consulted in making household decisions?
	1	Always
	2	Rarely
	3	Never
	2.12	What household activities are performed by you?
	1	Cooking
	2	Looking after elders
	3	Washing clothes and dishes
	4	Cleaning of house
	5	Caring of Children

	6	Bringing drinking water
	7	Bringing fire wood
	8	If any other, Specify? _____
	2.13	Have you heard about NPIWC-II Project?
	1	Yes
	2	No
	2.14	Do You know about WUA
	1	Yes
	2	No
	2.15	Are you member of WUA
	1	Yes
	2	No
	2.16	Do you participate in WUA meetings?
	1	Always
	2	Never
	3	Never called
	2.17	Do you wash clothes at washing pad at watercourse?
	1	Yes
	2	No
	2.18	Are Culverts sufficient for crossing at watercourse?
	1	Yes
	2	No
	3	COMMENTS OF INTERVIEWER

WC Monitoring Tool-6

BENEFICIARY/FARMER FEEDBACK & ENVIRONMENT

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Watercourse ID: _____
	1.4	Status of watercourse to be improved
	1	Technical Sanction(TS) Issued
	2	Intermediate Completion Report(ICR-1) Issued
	3	Intermediate Completion Report(ICR-2) Issued
	4	Final Completion Report(FCR) Issued
If only "Technical Sanction Issued", Cover this section till Q 3.11		
If the answer in q 1.4 comes from 2 to 3 then fill from Q 3.12 to Q 3.23		
If the answer in q 1.4 comes from FCR then fill from Q 4.1 till End		
Farmers Feedback: Part A, Water User Association		
	2.1	Do you know about Water User's Association (WUA)?
	1	Yes
	2	No
	3	No Response
If "Yes" in Q.#2.1 then continue with Q#2.2		otherwise goto Q#2.15
	2.2	Are you a member of Water User's Association(WUA)?
	1	Yes
	2	No
	3	Don't know
If "Yes" in Q.#2.2 then continue with Q#2.3		otherwise goto Q#2.18
	2.3	Was your participation voluntary?
	1	Yes
	2	No
	3	No Response
	2.4	Who motivated you to be a member?
	1	Fellow farmers
	2	Big Landlord
	3	OFWM field team
	4	Any other (Specify)
	2.5	Did you pay any membership fee to become member of WUA?
	1	Yes

	2	No
	3	No Response
	2.6	Do all the WUA members are water user's?
	1	Yes
	2	No
	2.7	Do WUA holds regular meetings of the association?
	1	Yes
	2	No
	3	To some Extent
	2.8	Do you participate in the WUA meetings?
	1	Always
	2	Occasionally
	3	Never
	2.9	Do you know that the minutes are recorded and got approved in next meeting?
	1	Always
	2	Occasionally
	3	Never
	2.10	Do Decisions make democratically?
	1	Yes
	2	No
	3	To some Extent
	2.11	Do Majority of the members participate in the meetings?
	1	Yes
	2	No
	3	To some Extent
	2.12	What is the frequency of WUA meetings?
	1	Every month
	2	Quarterly
	3	Once a year
	4	As per need arises
	2.13	Do you aware about functions and responsibilities of the Association?
	1	Labour Arrangement
	2	Resolve Disputes
	3	WCs Maintenance
	4	Funding for Accounts
	2.14	Do you think WUA helps in solving your farming problems?

	1	Always
	2	To some Extent
	3	Never
Farmer Feedback: Watercourse		
	2.15	Do you Know that your watercourse is going to be newly lined/ additionally lined/reconstructed?
	1	Yes
	2	No
	3	Don't know
If "Yes" in Q.#2.15 then continue with Q#2.16		Otherwise goto Q#2.18
	2.16	Do you know that the lining will be up to 50% of the watercourse length?
	1	Yes
	2	No
	3	Don't know
	2.17	Do you think that watercourse lining up to 50% will benefit you?
	1	Yes
	2	No
	3	Don't know
3. Feedback: Environment Baseline		
	3.1	Will there be land required for the improvement / alignment of watercourse?
	1	Yes
	0	No
	3.2	Are the clothes washed on this watercourse?
	1	Yes
	0	No
If "Yes" in Q.#3.2 then continue with Q#3.3		Otherwise goto Q#3.4
	3.3	How many places and at what locations?
	3.3.1	How many at Head?
	3.3.2	How many at Middle?
	3.3.3	How many at Tail?
	3.4	Do washing bays required on this watercourse?
	1	Yes
	0	No
If "Yes" in Q.#3.4 then continue with Q#3.5		Otherwise goto Q#3.6
	3.5	How many places and at what locations?
	3.5.1	How many at Head?
	3.5.2	How many at Middle?

	3.5.3	How many at Tail?
	3.6	Will any trees be cut down on this watercourse?
	1	Yes
	0	No
If "Yes" in Q.#3.6 then continue with Q#3.7		Otherwise goto Q#3.8
	3.7	Number of Trees to be Cut Down?
	3.8	Will temporary diversion channel be needed?
	1	Yes
	0	No
	3.9	How the solid waste material will be disposed of?
	1	Used in filling small depressions
	2	Used for dressing Inspection Path / Non Inspection Path
	3	Left unattended
	4	If any other, Specify
	3.10	Will there be disruption to local routes?
	1	Yes
	0	No
	3.11	Will the local labour be hired for works on this watercourse?
	1	Yes
	0	No
Farmer's Feedback: DURING CONSTRUCTION		
	3.12	Do you know that this watercourse is being lined up to 50 percent?
	1	Yes
	0	No
	3.13	Was the land required for WC alignment provided by the land owners voluntarily?
	1	Yes
	0	No
	3.14	Are washing bays under construction as per technical sanction?
	1	Yes
	0	No
	3.15	How many places and at what locations?
	3.15.1	How many at Head?
	3.15.2	How many at Middle?
	3.15.3	How many at Tail?
	3.16	Were any trees cut down during watercourse improvement work?
	1	Yes

	0	No
	2	Number of Trees Cut Down?
If "Yes" in Q.#3.16 then continue with Q#3.17		Otherwise goto Q#3.19
	3.17	How many saplings have been planned to be planted against each tree cut down?
	3.18	Do the arrangements made for the protection of newly planted saplings?
	1	Yes
	0	No
	3.19	Were temporary diversion channel(s), if any, made?
	1	Yes
	0	No
If "Yes" in Q.#3.19 then continue with Q#3.20		Otherwise goto Q#3.21
	3.20	How the solid waste material was disposed of?
	1	Used in filling small depressions
	2	Used for dressing Inspection Path / Non Inspection Path
	3	Lefty unattended
	4	If any, Specify
	3.21	Was the disruption of local routes occurring?
	1	Yes
	0	No
If "Yes" in Q.#3.21 then continue with Q#3.22		Otherwise goto Q#3.23
	3.22	Were measures taken to restore the local routes properly?
	1	Yes
	0	No
	3.23	Was local labor hired for improvement works of the watercourse?
	1	Yes
	0	No
Beneficiary/Farmer Feedback: Part C		
4.VISIT AFTER CONSTRUCTION		
	4.1	Do you know that watercourse was lined up to 50%?
	1	Yes
	2	No
	3	NA
If "Yes" in Q.#4.1 then continue with Q#4.2		otherwise skip the questionnaire
	4.2	Did you ever visit watercourse site as it was being improved?
	1	Yes
	2	No

	3	NA
	4.3	Were disputes resolved during construction of the watercourse?
	1	Yes
	2	No
	3	To some Extent
	4.4	Were there issues relating to controlled structures/ nacca fixing were resolved?
	1	Yes
	2	No
	3	To some Extent
	4.5	Have you heard about the quality of work?
	1	Yes
	2	No
	3	NA
If "Yes" in Q.#4.5 then continue with Q#4.6		Otherwise goto Q#4.8
	4.6	Do you think work quality was?
	1	Good
	2	Average
	3	Not good
	4	Don't know
If "Not Good" in Q.#4.6 then continue with Q#4.7		Otherwise goto Q#4.8
	4.7	If work quality is not good, then of which?
	1	Bricks
	2	RCC/PVC pipe
	3	Cement
	4	Slab
	5	Control structure/Nacca
	6	Workmanship
	7	Any other (Specify)
	4.8	Do you know that before the lining work was started, the watercourse was earthen, improved/renovated?
	1	Yes
	2	No
	3	Don't know
If "Yes" in Q.#4.8 then continue with Q#4.9		Otherwise goto Q#4.10
	4.9	How much in your view watercourse length was earthen improved / renovated?
	1	Entire length
	2	Only Lining part
	3	Do not know

Labour		
	4.10	Arranged skilled and unskilled labour for earthen improvement of the watercourse
	1	Yes
	2	No
	3	To some Extent
	4.11	Arranged skilled and unskilled labour for watercourse lining/ alignment
	1	Yes
	2	No
	3	To some Extent
	4.12	Did you participate in earthen improvement activity?
	1	Yes
	2	No
	3	To some Extent
If "Yes" in Q.#4.12 then continue with Q#4.13		Otherwise goto Q#4.14
	4.13	In what form?
	1	Contributed labour
	2	Contributed in kind/money
	4.14	Do you think that irrigation water availability has increased after the watercourse improvement at your farm?
	1	Yes
	2	No
	3	Don't know
If "Yes" in Q.#4.14 then continue with Q#4.15		Otherwise goto Q#4.16
	4.15	How much?(Please guess keeping in view difference in acreage irrigated before and after WC improvement)
	1	Less than 5%
	2	5%
	3	10%
	4	20%
	4.16	Did WUA Resolve disputes arising during construction of watercourse?
	1	Yes
	2	No
	3	To some Extent
	4.17	Did WUA Resolve issues relating to controlled structures/Nacca fixing?
	1	Yes
	2	No
	3	To some Extent
	4.18	The improved watercourse is properly maintained
	1	Yes

	2	No
	3	To some Extent
Environment		
	4.19	Were the washing bays constructed/completed?
	1	Yes
	0	No
	4.20	How many places, and at what locations?
	4.20.1	How many at Head?
	4.20.2	How many at Middle?
	4.20.3	How many at Tail?
	4.21	How many saplings were planted against each tree cut down?
	4.21.1	Number of Survived Trees?
	4.22	Were the arrangements made for the protection of newly planted saplings?
	4.23	Were temporary diversion channel(s) restored?
	1	Yes
	0	No
	4.24	How the solid waste material was disposed of?
	1	Used in filling small depressions
	2	Used for dressing Inspection Path / Non Inspection Path
	3	Left unattended
	4	If any other, Specify
	4.25	Was the disruption of local routes occurring?
	1	Yes
	0	No
	4.26	Were measures taken to restore the local routes properly?
	1	Yes
	0	No
	4.11	Were the local labor hired for works on this watercourse?
	1	Yes
	0	No
	5	COMMENTS OF INTERVIEWER

WC Monitoring Tool-7

QUESTIONNAIRE FOR FARMING/BENEFICIARY OF HOUSEHOLD

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Watercourse ID: _____
2.PROFILE OF BENEFICIARY		
	2.1	Name
	2.2	Father's Name
	2.3	District
	2.4	Tehsil
	2.5	Field Team
	2.6	Village
	2.7	Location of farm on watercourse
	1	Head
	2	Middle
	3	Tail
3. FARM SIZE AND TEANURIAL STATUS		
	3.1	Area Owned (Acres)
	3.2	Area Rented-In (Acres)
	3.3	Area Rented-Out (Acres)
	3.4	Total Farm Area (Acres)
	3.6	Area not Cultivated
	3.7	Area Cultivated
	3.8	Area under water logging and salinity
	3.9	Reason for water logging
	1	Katcha WC
	2	Others
	3.5	Tenurial status
	1	Owner
	2	Owner cum Tenant
	3	Tenant

4. SOURCES OF IRRIGATION WATER		
	4.1	Main Sources
	1	Canal
	2	Tube well
	3	Canal+TW
	4	Others
	4.2	Status of tube well water used
	1	Owned
	2	Purchased
	4.3	Cost of tube well water per hour Rs.
	4.4	Share of irrigation water %age
	4.4.1	Water used for Kharif crops?
	1	Canal
	2	Tube well
	3	Others
	4.4.2	Water used for Rabi crops
	1	Canal
	2	Tube well
	3	Others
5. FAMILY AND PERMANENT HIRED LABOR		
	5.1	Family Members
	5.5.1	Member full time available for farming
	1	Male
	2	Female
	5.5.2	Member part time available for farming
	1	Male
	2	Female
	5.5.3	Permanent hired labor (PHL)
	1	Male
	2	Female

Name of Crop	Area (acres)	Land Preparation			Laser Land Leveling			Seed Bed Preparation		
		Acres	Hr/ Acre	Rate/hr	Acres	Hr/ Acre	Rate/hr	Acres	Hr/ Acre	Rate/hr
Kharif Crops										
1 Rice (Fine)										
2 Rice (Coarse)										
3 Cotton (American)										
4 Cotton (Desi)										
5 Sugarcane (New)										
6 Sugarcane (Ratoon)										
7 Sugar Beet										
8 Maize										
9 Tobacco										
10 Kharif fodder										
11 Other Kharif Crops (Name)										
Rabi Crops										
12 Wheat										
13 Sunflower										
14 Rapeseed, mustard, canola										
15 Other Edible Oils Seed										
16 Rabi fodder										
17 Other Rabi crops (Name)										
Orchards										
18 Mango										
19 Dates										
20 Apple										
21 Lemon										
22 Citrus										
23 Guava										
24 Other (Name)										
Vegetables										
25 Tomato										
26 Potato										
27 Peas										
28 Carrot										
29 Radish										
30 Cucumber										
31 Onion										
32 Lady Finger/ Okra										
33 Chillies										
34 Other (Names)										

Name of Crop		Seed Bed Treatment										Seed Treatment cost		
		Use of Seed		Seedling cost/acre		Sowing (CHL)		Plantation (CHL)		Transplantation		Cost. Per acre	Labour Cost	
		Kg/ acre	Rs/ Kg	Home Grown	Bought	Male	Female	Male	Female	Male	Female		Male	Female
	Kharif Crops													
1	Rice (Fine)													
2	Rice (Coarse)													
3	Cotton (American)													
4	Cotton (Desi)													
5	Sugarcane (New)													
6	Sugarcane (Ratoon)													
7	Sugar Beet													
8	Maize													
9	Tobacco													
10	Kharif fodder													
11	Other Kharif Crops (Name)													
	Rabi Crops													
12	Wheat													
13	Sunflower													
14	Rapeseed, mustard, canola													
15	Other Edible Oils Seed													
16	Rabi fodder													
17	Other Rabi crops (Name)													
	Orchards													
18	Mango													
19	Dates													
20	Apple													
21	Lemon													
22	Citrus													
23	Guava													
24	Other (Name)													
	Vegetables													
25	Tomato													
26	Potato													
27	Peas													
28	Carrot													
29	Radish													
30	Cucumber													
31	Onion													
32	Lady Finger/ Okra													
33	Chillies													
34	Other (Names)													

Name of Crop		Use of Fertilizers (No. of Bags)/Acre											
		Urea		DAP		Potash (SOP)		NP (23-23)		Other Name		Cost of Hired Labour	
		Qty Bags	Price per Bag	Qty Bags	Price per Bag	Qty Bags	Price per Bag	Qty Bags	Price per Bag	Qty Bags	Price per Bag	Male	Female
	Kharif Crops												
1	Rice (Fine)												
2	Rice (Coarse)												
3	Cotton (American)												
4	Cotton (Desi)												
5	Sugarcane (New)												
6	Sugarcane (Ratoon)												
7	Sugar Beet												
8	Maize												
9	Tobacco												
10	Kharif fodder												
11	Other Kharif Crops (Name)												
	Rabi Crops												
12	Wheat												
13	Sunflower												
14	Rapeseed, mustard, canola												
15	Other Edible Oils Seed												
16	Rabi fodder												
17	Other Rabi crops (Name)												
	Orchards												
18	Mango												
19	Dates												
20	Apple												
21	Lemon												
22	Citrus												
23	Guava												
24	Other (Name)												
	Vegetables												
25	Tomato												
26	Potato												
27	Peas												
28	Carrot												
29	Radish												
30	Cucumber												
31	Onion												
32	Lady Finger/ Okra												
33	Chilies												
34	Other (Names)												

Name of Crop		FYM					Sprays				Canal irrigation Per Acre	
		Area treated	No. of Trollies.	Cost per	Labour Cost		No. of spray	Cost of Sprays	Cost of Hired Labour		No. of irrigation per acre	Abyana & taxes per crop
					Male	Female			Male	Female		
	Kharif Crops											
1	Rice (Fine)											
2	Rice (Coarse)											
3	Cotton (American)											
4	Cotton (Desi)											
5	Sugarcane (New)											
6	Sugarcane (Ratoon)											
7	Sugar Beet											
8	Maize											
9	Tobacco											
10	Kharif fodder											
11	Other Kharif Crops (Name)											
	Rabi Crops											
12	Wheat											
13	Sunflower											
14	Rapeseed, mustard, canola											
15	Other Edible Oils Seed											
16	Rabi fodder											
17	Other Rabi crops (Name)											
	Orchards											
18	Mango											
19	Dates											
20	Apple											
21	Lemon											
22	Citrus											
23	Guava											
24	Other (Name)											
	Vegetables											
25	Tomato											
26	Potato											
27	Peas											
28	Carrot											
29	Radish											
30	Cucumber											
31	Onion											
32	Lady Finger/ Okra											
33	Chillies											
34	Other (Names)											

Name of Crop	Tube well irrigation			Picking of cotton/orchard/Vegetables			Number of hoeing/thinning		
	Hour/Acre	Cost/hour	Area Irrigated	Number of Picking	CHL Rs.		Number	CHL Rs.	
					Male	Female		Male	Female
Kharif Crops									
1 Rice (Fine)									
2 Rice (Coarse)									
3 Cotton (American)									
4 Cotton (Desi)									
5 Sugarcane (New)									
6 Sugarcane (Ratoon)									
7 Sugar Beet									
8 Maize									
9 Tobacco									
10 Kharif fodder									
11 Other Kharif Crops (Name)									
Rabi Crops									
12 Wheat									
13 Sunflower									
14 Rapeseed, mustard, canola									
15 Other Edible Oils Seed									
16 Rabi fodder									
17 Other Rabi crops (Name)									
Orchards									
18 Mango									
19 Dates									
20 Apple									
21 Lemon									
22 Citrus									
23 Guava									
24 Other (Name)									
Vegetables									
25 Tomato									
26 Potato									
27 Peas									
28 Carrot									
29 Radish									
30 Cucumber									
31 Onion									
32 Lady Finger/ Okra									
33 Chillies									
34 Other (Names)									

Name of Crop	Mulching/ Pruning/ Stalking			harvesting/ picking						
	Number	CHL Rs.		Harvest Material Cost (Wheat and Rice)	CHL Rs.		Cost of Labour for Harvest ing in rs	Cost of Threshi ng	CHL Rs.	
		Male	Female		Male	Female			Male	Female
Kharif Crops										
1 Rice (Fine)										
2 Rice (Coarse)										
3 Cotton (American)										
4 Cotton (Desi)										
5 Sugarcane (New)										
6 Sugarcane (Ratoon)										
7 Sugar Beet										
8 Maize										
9 Tobacco										
10 Kharif fodder										
11 Other Kharif Crops (Name)										
Rabi Crops										
12 Wheat										
13 Sunflower										
14 Rapeseed, mustard, canola										
15 Other Edible Oils Seed										
16 Rabi fodder										
17 Other Rabi crops (Name)										
Orchards										
18 Mango										
19 Dates										
20 Apple										
21 Lemon										
22 Citrus										
23 Guava										
24 Other (Name)										
Vegetables										
25 Tomato										
26 Potato										
27 Peas										
28 Carrot										
29 Radish										
30 Cucumber										
31 Onion										
32 Lady Finger/ Okra										
33 Chillies										
34 Other (Names)										

Name of Crop		Area (acres)	Yield		Prices		In case sold as such Rs. /Acre for fruit plants only
			Product (40 Kgs)	By-product (40 Kgs)	Product Price per 40 Kg (Rs.)	By-Product (Rs. /40 Kg)	
	Kharif Crops						
1	Rice (Fine)						
2	Rice (Coarse)						
3	Cotton (American)						
4	Cotton (Desi)						
5	Sugarcane (New)						
6	Sugarcane (Ratoon)						
7	Sugar Beet						
8	Maize						
9	Tobacco						
10	Kharif fodder						
11	Other Kharif Crops (Name)						
	Rabi Crops						
12	Wheat						
13	Sunflower						
14	Rapeseed, mustard, canola						
15	Other Edible Oils Seed						
16	Rabi fodder						
17	Other Rabi crops (Name)						
	Orchards						
18	Mango						
19	Dates						
20	Apple						
21	Lemon						
22	Citrus						
23	Guava						
24	Other (Name)						
	Vegetables						
25	Tomato						
26	Potato						
27	Peas						
28	Carrot						
29	Radish						
30	Cucumber						
31	Onion						
32	Lady Finger/ Okra						
33	Chilies						
34	Other (Names)						

7. BENEFICIARY'S PERCEPTION ABOUT WATER SAVING		
DB#	Q#	Field Name
		Watercourse ID: _____
	1.1	Do you think use of labour force increased on from after improvement of watercourse?
	1	Yes
	2	No
If "Yes" in Q.#9.1 then continue with Q#9.2		Otherwise goto Q#9.3
	1.2	How much (%)
	1.3	Are you satisfied with the equity in distribution of water?
	1	Yes
	2	No
	1.4	How much your land was irrigated before lining in one go?
	1.5	After lining, how much your land irrigates in one go?
	1.6	During the season have you faced any problem regarding water theft/ dispute or litigation?
	1	Yes
	2	No
If "Yes" in Q.#9.6 then continue with Q#9.7		Otherwise goto Q#9.8
	1	Yes
	2	No
	1.7	During and after watercourse improvement on OFWM staff has guided about economically use of water?
	1	Yes
	2	No
	1.8	Have OFWM staff provided you any literature about economically use of water?
	1	Yes
	2	No
	1.9	General remarks of beneficiaries about watercourse improvement intervention

WC Monitoring Tool-8

SPOT CHECK OF WATERCOURSE IMPROVEMENT

1. IDENTIFICATION		
DB.#	Q.#	Field Name
	1.1	Watercourse ID. _____
2. Rectangular/ Bricks Watercourse		
	2.1	Removal of vegetation from watercourse properly
	1	Yes
	2	No
	2.2	Aligning according to design
	1	Yes
	2	No
	2.3	Proper compaction of soil
	1	Yes
	2	No
	2.4	Actual discharge (as per Irrigation Department) (LPS)
	2.5	Is water supply
	1	Adequate
	2	Not-adequate
If 'Adequate' in Q.# 2.5 then continue with Q.# 2.7		Otherwise continue with Q# 2.6
	2.6	Not adequate, Is there any additional water supply (via. Tube Well / lift machine) at watercourse?
	1	Yes
	2	No
	2.7	Type of Mogha/ outlet
	1	Open-type
	2	Closed
	3	Closed-pipe
	4	Closed-pump
	2.8	Lining length is as per design
	1	Yes
	2	No
	2.9	Thickness of wall is as per design
	1	Yes
	2	No
	2.10	Depth of watercourse is as per design
	1	Yes

	2	No
	2.11	Width of watercourse is as per design
	1	Yes
	2	No
	2.12	Thickness of plaster at wall is adequate
	1	Yes
	2	No
	2.13	Thickness of bed is adequate
	1	Yes
	2	No
	2.14	Thickness of mortar at wall is adequate
	1	Yes
	2	No
	2.15	Free board height is as per design
	1	Yes
	2	No
	2.16	Back collar mortar is adequate
	1	Yes
	2	No
	2.17	Quality of Plaster
	1	Good
	2	Satisfactory
	3	Not satisfactory
	2.18	Back filling of the lining portion
	1	Good
	2	Satisfactory
	3	Not satisfactory
	2.19	Rehabilitation of Katcha / earthen portion of watercourse
	1	Full length improved
	2	Only lined portion
Structures Fixing		
	2.20	Controlled Structures for Branch Watercourse
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.21	Pacca Naccas in improved area
	1	Number installed as per design

	2	Installed less than as per design
	3	None installed
	2.22	Pacca Naccas in Katcha area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.23	Culverts in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.24	Box Culverts in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.25	Pipe Culverts in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.26	Siphon in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.27	Drop Structure in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.28	Wallow/Bufaloes bath in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	2.29	Wash bay in improved watercourse
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
3. Parabolic Watercourse		
	3.1	Removal of vegetation from watercourse properly
	1	Yes

	2	No
	3.2	Is designed discharge (as per Irrigation Department)? _____ LPS
	3.3	Is water supply?
	1	Adequate
	2	Not adequate
If 'Adequate' in Q.# 3.3 then continue with Q.# 3.5		Otherwise continue with Q.# 3.4
	3.4	If Not adequate, Is there any additional water supply (via. Tube Well / lift machine) at watercourse?
	1	Yes
	2	No
	3.5	Type of Mogha / outlet
	1	Open
	2	Closed
	3	Closed-Pipe
	4	Closed Pump
	3.6	Lining length is as per design
	1	Yes
	2	No
	3.7	Total length is as per design
	1	Yes
	2	No
	3.8	Quality of pre-cast parabolic segments
	1	Good
	2	Poor
	3.9	Filling of joints of the parabolic segments
	1	Good
	2	Poor
	3.10	Slope of the parabolic segments
	1	As per Design
	2	Not as per Design
	3.11	Back filling of pre-cast parabolic slabs
	1	Proper
	2	Not proper
Structures Fixing		
	3.12	Controlled Structures for Branch Watercourse
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed

	3.13	Pacca Naccas in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.14	Pacca Naccas in Katcha area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.15	Culverts in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.16	Box Culverts in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.17	Pipe Culverts in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.18	Siphon in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.19	Drop Structure in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.20	Wallow/Bufaloes bath in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	3.21	Wash bay in improved watercourse
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
4. PVC and RCC Pipeline Watercourse		
	4.1	Excavation of trenches for water supply pipelines are as per specifications

	1	Yes
	2	No
	4.2	Actual discharge (as per Irrigation Department) _____ LPS
	4.3	Is water supply?
	1	Adequate
	2	Not adequate
If 'Adequate' in Q.# 4.3 then continue with Q.# 4.5		Otherwise continue with Q.# 4.4
	4.4	Is additional discharge (via. Tube Well / lift machine) at watercourse?
	1	Yes
	2	No
	4.5	Type of Mogha / outlet
	1	Open
	2	Closed
	3	Closed-Pipe
	4	Closed-Pump
	4.6	What kind of pipeline has been used?
	1	RCC Pipe
	2	PVC Pipe
	3	G-I Pipe
	4.7	Pipeline length is as per design
	1	Yes
	2	No
	4.8	Bends as per design
	1	Yes
	2	No
	4.9	Sockets are as per design
	1	Yes
	2	No
	4.10	Air Valve are as per design
	1	Yes
	2	No
	4.11	Reducers are as per design
	1	Yes
	2	No
	4.12	Flunges are as per design
	1	Yes
	2	No

	4.13	Tee are as per design
	1	Yes
	2	No
	4.14	Non-Return Valves are as per design
	1	Yes
	2	No
	4.15	Cost Iron Sluice Valve are as per design
	1	Yes
	2	No
	4.16	Quality of Pipeline
		1-Good
		2-Satisfactory
		3-Not satisfactory
Structures Fixing		
	4.17	Controlled Structures for Branch Watercourse
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	4.18	Pacca Naccas in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	4.19	Pacca Naccas in Katcha area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	4.20	Culverts in improved area
	1	Number installed as per design
	2	Installed less than as per design
	3	None installed
	5	COMMENTS OF INTERVIEWER

WC Monitoring Tool-9

WATER FLOW IN SAMPLED WATERCOURSE (Before Improvement/After Improvement)

1.IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Watercourse ID: _____
2.WATERCOURSE IMPROVEMENT STATUS		
	2.1	Total Watercourse Length in Meter
	2.2	Stage of Watercourse Improvement
	1	Improved
	2	Unimproved
If 'Improved' in Q.# 2.2 then continue with Q.# 2.3		Otherwise continue with section 3.1
	2.3	If watercourse is improved or TS issued, then length of lining part in Meters?
3.PYGMY CURRENT METER (PCM) Readings for Determination of Velocity		
Station-1: PYGMY CURRENT METER READINGS NEAR WATERCOURSE OUTLET (At about 10 meters away from Mogha)		
	3.1	Station-1: X-Section Width from Edge of WC (inches)
Station-1:WC Depth (inches)		
		Station-1: Observation-1
	3.2	Station-1: Observation-1 - Depth-1 (inches)
	3.3	Station-1: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.4	Station-1: Observation-1 - Depth-2 (inches)
	3.5	Station-1: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.6	Station-1: Observation-1 - Depth-3 (inches)
	3.7	Station-1: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.8	Station-1: Enter Cross Section of Watercourse After Observation-1 (feet)
		Station-1: Observation-2
	3.9	Station-1: Observation-2 - Depth-1 (inches)
	3.10	Station-1: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.11	Station-1: Observation-2 - Depth-2 (inches)
	3.12	Station-1: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.13	Station-1: Observation-2 - Depth-3 (inches)
	3.14	Station-1: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.15	Station-1: Enter Cross Section of Watercourse After Observation-2 (feet)

		Station-1: Observation-3
	3.16	Station-1: Observation-3 - Depth-1 (inches)
	3.17	Station-1: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.18	Station-1: Observation-3 - Depth-2 (inches)
	3.19	Station-1: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.20	Station-1: Observation-3 - Depth-3 (inches)
	3.21	Station-1: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.22	Station-1: Sketch of Watercourse Cross Section Area
	3.23	Comments of Interviewer
STATION-2: PYGMY CURRENT METER READINGS CLOSE TO THE END OF LINING PART AND AT MID POINT OF MIDDLE REACH OF THE WATERCOURSE		
	3.24	Station-2: X-Section Width from Edge of WC (inches)
Station-2: WC Depth (inches)		
		Station-2: Observation-1
	3.25	Station-2: Observation-1 - Depth-1 (inches)
	3.26	Station-2: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.27	Station-2: Observation-1 - Depth-2 (inches)
	3.28	Station-2: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.29	Station-2: Observation-1 - Depth-3 (inches)
	3.30	Station-2: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.31	Station-2: Enter Cross Section of Watercourse After Observation-1 (feet)
		Station-2: Observation-2
	3.32	Station-2: Observation-2 - Depth-1 (inches)
	3.33	Station-2: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.34	Station-2: Observation-2 - Depth-2 (inches)
	3.35	Station-2: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.36	Station-2: Observation-2 - Depth-3 (inches)
	3.37	Station-2: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.38	Station-2: Enter Cross Section of Watercourse After Observation-2 (feet)
		Station-2: Observation-3
	3.39	Station-2: Observation-3 - Depth-1 (inches)
	3.40	Station-2: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.41	Station-2: Observation-3 - Depth-2 (inches)
	3.42	Station-2: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)

	3.43	Station-2: Observation-3 - Depth-3 (inches)
	3.44	Station-2: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.45	Station-2: Sketch of Watercourse Cross Section Area
	3.46	Comments of Interviewer
STATION-3: PYGMY CURRENT METER READINGS AT MID POINT OF TAIL REACH OF THE WATERCOURSE (At about 75% length of the watercourse)		
	3.47	Station-3: X-Section Width from Edge of WC (inches)
Station-3: WC Depth (inches)		
		Station-3: Observation-1
	3.48	Station-3: Observation-1 - Depth-1 (inches)
	3.49	Station-3: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.50	Station-3: Observation-1 - Depth-2 (inches)
	3.51	Station-3: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.52	Station-3: Observation-1 - Depth-3 (inches)
	3.53	Station-3: Observation-1 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.54	Station-3: Enter Cross Section of Watercourse After Observation-1 (feet)
		Station-3: Observation-2
	3.55	Station-3: Observation-2 - Depth-1 (inches)
	3.56	Station-3: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.57	Station-3: Observation-2 - Depth-2 (inches)
	3.58	Station-3: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.59	Station-3: Observation-2 - Depth-3 (inches)
	3.60	Station-3: Observation-2 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.61	Station-3: Enter Cross Section of Watercourse After Observation-2 (feet)
		Station-3: Observation-3
	3.62	Station-3: Observation-3 - Depth-1 (inches)
	3.63	Station-3: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-1)
	3.64	Station-3: Observation-3 - Depth-2 (inches)
	3.65	Station-3: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-2)
	3.66	Station-3: Observation-3 - Depth-3 (inches)
	3.67	Station-3: Observation-3 - Pygmy Current meter revolution counts in 40 seconds (Depth-3)
	3.68	Station-3: Sketch of Watercourse Cross Section Area
	3.69	COMMENTS OF INTERVIEWER

WST Monitoring Tool-1

WATER STORAGE TANK (WST) IDENTIFICATION

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Province / Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Field Team
	1.6	Union Council
	1.7	Village
	1.8.1	NA Constituency
	1.8.2	PP Constituency
	1.9	Name of Farmer
	1.10	Gender
	1	Male
	2	Female
	1.11	Name of Father
	1.12	CNIC
	1.13	Cell #
	1.14	Sources of Irrigation System
	1	Canal Water
	2	Rainfall
	3	Tail Water Recovery Ditch (TWRD)
	4	Stream
	5	Naala
	6	Spring
	7	Tube well
	8	Dug well
	1.15	Area Operated (Acres)
	1.16	Land Topography
	1	Even
	2	Uneven
	1.17	Financial Year
	1.18	Comments

WST Monitoring Tool-2

SPOT CHECK OF WATER STORAGE TANK (WST)

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	WST ID _____
	1.2	Coordinates
2.SPOT CHECK		
	2.1	Shape of water storage tank
	2.2	Dimensions (Feet)
	1	Length 1
	2	Length 2
	3	Width 1
	4	Width 2
	5	Depth
	2.3	The farmer completed the WST using his/her own funds before subsidy
	1	Yes
	0	No
	2.4	The WST was completed as per approved standards and specifications
	1	Yes
	0	No
	2.5	Excavation was done as per standard engineering practices
	1	Yes
	0	No
	2.6	The NWM Consultants inspected the excavation
	1	Yes
	0	No
	2.7	Is the geo-membrane thickness minimum 0.5 mm
	1	Yes
	0	No
	2.8	The NWM Consultants inspected the excavation and quality of geo-membrane and certified as satisfactory
	1	Yes
	0	No
	2.9	Before filling the WST, the OFWM staff prepared the completion report
	1	Yes
	0	No
	2.10	Any variations in specifications and material used

	1	Yes
	0	No
If yes in Q# 2.10 then continue with Q# 2.11		Otherwise go to Q# 2.12
	2.11	If yes in above, the subsidy was paid as per cost estimates based on geo-membrane design
	1	Yes
	0	No
	2.12	Does the water depth in WST exceed 5 feet?
	1	Yes
	0	No
	2.13	Do all joints weld through fusion welding or other similar techniques?
	1	Yes
	0	No
If yes in Q# 2.13 then continue with Q# 2.14		Otherwise go to End
	2.14	Is the testing of Joints welded parts done before filling the water storage tank?
	1	Yes
	0	No

WST Monitoring Tool-3

BENEFICIARIES' FEEDBACK FOR WATER STORAGE TANKS

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	WST ID _____
2. BENEFICIARY FEEDBACK		
	2.1	Name of Beneficiary / Owner
	2.2	How was your application attended by OFWM staff?
	1	Promptly
	2	Took a lot of time
	2.3	How you assess survey and design process?
	1	Fast track
	2	Lengthy
	2.4	Behavior of OFWM staff
	1	Friendly / Supportive
	2	Indifferent
	2.5	The subsidy was paid
	1	Within reasonable time
	2	Required a lot of time
	2.6	How do you feel about the maintenance of WST?
	1	Easy
	2	Difficult
	2.7	Cropping intensity has increased on your farm after WST
	1	Yes
	0	No
	3	To Some Extent
	2.8	Crops / orchards yield has increased after WST
	1	Yes
	0	No
	3	To Some Extent
	2.9	Your area under cultivation has increased after WST construction
	1	Yes
	2	No Change
	2.10	Number of irrigation/ acres has increased after WST construction
	1	Yes
	2	No Change

LLL Monitoring Tool-1

LASER LAND LEVELER IDENTIFICATION

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Province/Unit
	1.2	District
	1.3	Tehsil
	1.4	Union Council
	1.5	Village
	1.6	NA Constituency
	1.7	PP Constituency
	1.8	Name of Service Provider
	1.9	Father's Name
	1.10	Gender
	1	Male
	2	Female
	1.11	CNIC
	1.12	Cell Number
	1.13	Financial Year
	1.14	Comments

LLL Monitoring Tool-2

CHECK LIST FOR TRAINING OF SERVICE PROVIDER /OPERATOR OF LASER LAND LEVELER

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	LLL ID: _____
2.AVAILABILITY OF FACILITIES FOR CAPACITY BUILDING		
2.1.Audio-Visual Aids for Training		
	2.1.1	Blackboard
	1	Yes
	2	No
	2.1.2	Flip Charts
	1	Yes
	2	No
	2.1.3	Overhead Projector
	1	Yes
	2	No
	2.1.4	Multimedia
	1	Yes
	2	No
	1.1.5	White Board
	1	Yes
	2	No
	2.1.6	Any other
	1	Yes
	2	No
	2.2	Refreshments Provided to the Participants
	1	Yes
	2	No
	2.3	Necessary Stationery for the trainees
	1	Yes
	2	No
	2.4	Handouts provided to the trainees
	1	Yes
	2	No
	2.5	Copies of the curriculum provided to the trainees

	1	Yes
	2	No
	2.6	Field visit during training
	1	Yes
	2	No
	2.7	No. of Participants
	2.8	Training period days
3.OTHER ASSESSMENT ITEMS		
3.1.Coverage		
	3.1.1	Extent of coverage of the curriculum
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.1.2	Depth of trainer's knowledge
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.1.3	Other related topics covered
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
3.2.Effectiveness of the Speakers/Trainers		
	3.2.1	How subject matter was introduced?
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.2	Use of Participatory Approach
	1	Excellent
	2	Very Good

	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.3	Clarity/command on the subject
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.4	Style of delivery
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.5	Reference to handouts/training material
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.6	Confidence of the trainer
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.7	Use of Audio-Visual Aids
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.8	Handouts Provided
	1	Excellent
	2	Very Good
	3	Good

	4	Satisfactory
	5	Not Satisfactory
	3.2.9	Level of Interest Maintained
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.10	Managed Session within Time Limit
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.11	Effective Reply to Questions
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.2.12	Explained with examples
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
3.3.Group Discussion		
	3.3.1	Level of Participation of Trainees
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.3.2	Question Answer session Held
	1	Excellent
	2	Very Good
	3	Good

	4	Satisfactory
	5	Not Satisfactory
	3.3.3	Quality of Group Discussions
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
3.4.Training Environment		
	3.4.1	Seating Arrangement
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.4.2	Comfort of Participants
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.4.3	General Discipline
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.4.4	Participation Environment/Encouragement
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.4.5	General Treatment Extended by TAT Staff
	1	Excellent
	2	Very Good
	3	Good

	4	Satisfactory
	5	Not Satisfactory
3.5.Participants/Trainees		
	3.5.1	Enthusiasm
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.5.2	Level of Participation/Involvement
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.5.3	Regularity/Attendance
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	3.6	Overall Assessment of the Training Process
	1	Excellent
	2	Very Good
	3	Good
	4	Satisfactory
	5	Not Satisfactory
	4	COMMENTS OF INTERVIEWER

LLL Monitoring Tool-3

SERVICE PROVIDER FEEDBACK AND FOLLOW UP FOR LASER UNITS

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	LLL ID: _____
2. LASER LAND LEVELING UNIT SUPPLY COMPANY		
	2.1	Company
	2.2	Make & Model
	2.3	Date of delivery
	2.4	Delivery of the unit
	1	Timely
	2	Delayed
	3	No comments
	2.5	Quality / durability of the unit
	1	Good
	2	Satisfactory
	3	Unsatisfactory
	2.6	After sale service of the SSC
	1	Good
	2	Poor
	3	Very Poor
	2.7	Complaints attended by the SSC
	1	Promptly
	2	Not Promptly
	3	No Response
	2.8	Rates charged by the SSC to provide the after-sale service
	1	Costly
	2	Normal
	3	Not applicable
	2.9	Availability of spares
	1	Timely Available
	2	Takes long time
	3	Not available easily
	2.10	Prices charged by the SSC for the spares
	1	Costly
	2	Normal

	3	Do not know
	2.11	Spares are available
	1	Only with the SSC
	2	From open market
	3	I did not need yet
	2.12	SSC provider training in operation of the unit
	1	Yes
	2	No
	2.13	SSC provider training in maintenance and trouble shooting
	1	Yes
	2	No
	2.14	SSC provider operational manual
	1	Yes
	2	No
	2.15	General remarks services provider about LLL unit
3.MONITORING CHECKLIST		
	3.1	The unit is in physical possession of the service provider
	1	Yes
	2	No
<i>If "Yes" in Q.#3.1 then continue with Q#3.2</i>		<i>Otherwise goto Q#3.3</i>
	3.2	The unit has been
	1	Sold
	2	Stolen
	3	Working in field
	4	Hesitate to give status
	3.3	Took the Snap of the unit with date
	1	Yes
	2	No
	3.4	The service provider uses the unit for purpose
	1	Agricultural
	2	Other
	3.5	Do you have one trained operator for your equipment?
	1	Yes
	2	No
<i>If "Yes" in Q.#3.5 then continue with Q.#3.6</i>		<i>Otherwise goto Q#4.1.1</i>
	3.6	If Yes what is the monthly salary of the operator?
	3.7	The operator has been trained by

	1	OFWM
	2	Any Other
4.LAND LEVELING ACTIVITIES DETAILS		
4.1.Kharif		
	4.1.1	Own land leveled in acres
	4.1.2	Land leveled on rent in acres
	4.1.3	Number of farmers served
	4.1.4	Unit Rate in Rupees per hour
	4.1.5	Unit Rate in Rupees per acre
	4.1.6	Cost in Rupees per hour (Excluding operated cost)
	4.1.7	Cost in Rupees per acre (Excluding operated cost)
4.2.Rabi		
	4.2.1	Own land leveled in acres
	4.2.2	Land leveled on rent in acres
	4.2.3	Number of farmers served
	4.2.4	Unit Rate in Rupees per hour
	4.2.5	Unit Rate in Rupees per acre
	4.2.6	Cost in Rupees per hour (Excluding operated cost)
	4.2.7	Cost in Rupees per acre (Excluding operated cost)
	4.3	Farmers recently served in the vicinity
	4.3.1	Name
	4.3.2	Father Name
	4.3.3	Village
	4.3.4	Cell Number
	5	COMMENTS OF INTERVIEWER

LLL Monitoring Tool-4

BENEFICIARY FEEDBACK OF USERS OF LASER LAND LEVELER

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	LLL ID: _____
	1.2	Farm Area in Acres
	1.3	Cultivated Area in Acres
	1.4	Area Levelled in Acres
	1.5	Time consumed in hours
	1.6	Rate per acre
	1.7	Rate Per hour
2. BENEFICIARY (USER) FEEDBACK		
Time saving in water application (Hrs)		
	2.1	Fallow Land Before Leveling
	2.2	Fallow Land After Leveling
	2.3	Sugarcane Before Leveling
	2.4	Sugarcane After Leveling
	2.5	Rice Before Leveling
	2.6	Rice After Leveling
	2.7	Cotton Before Leveling
	2.8	Cotton After Leveling
	2.9	Fodder Before Leveling
	2.10	Fodder After Leveling
	2.11	Wheat Before Leveling
	2.12	Wheat After Leveling
	2.13	Maize Before Leveling
	2.14	Maize After Leveling
	2.15	Sugar Beet Before Leveling
	2.16	Sugar Beet After Leveling
	2.17	Vegetables Before Leveling
	2.18	Vegetables After Leveling
	2.19	Any Other Before Leveling
	2.20	Any Other After Leveling
3. YIELD LEVEL PER ACRE (40 Kgs)		
	3.1	Wheat Land Before Leveling
	3.2	Wheat Land After Leveling

	3.3	Sugarcane Before Leveling
	3.4	Sugarcane After Leveling
	3.5	Rice Before Leveling
	3.6	Rice After Leveling
	3.7	Maize Before Leveling
	3.8	Maize After Leveling
	3.9	Fodder Before Leveling
	3.10	Fodder After Leveling
	3.11	Sugar Beet Before Leveling
	3.12	Sugar Beet After Leveling
	3.13	Cotton Before Leveling
	3.14	Cotton After Leveling
	3.15	Vegetable Before Leveling
	3.16	Vegetable After Leveling
	3.17	Any Other Before Leveling
	3.18	Any Other After Leveling
4. OTHER BENEFITS		
	4.1	Seed Germination is better than before
	1	Yes
	2	No
	3	No Change
	4.2	Labor saving in crop operation like hoeing, spread of fertilizer, spray, harvesting etc.
	1	Yes
	2	No
	3	No Change
	5	COMMENTS OF INTERVIEWER

ANNEX-F: Dashboard Process Monitoring Input Forms

Watercourse Monitoring Tool-1 (DPMIF)

WATERCOURSE IMPROVEMENT

Fill by OFWM - Field Team

1. IDENTIFICATION		
DB.#	Q.#	Field Name
	1.1	Province/ Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Admin Division
	1.6	Admin District
	1.7	Admin Tehsil
	1.8	Field Team
	1.9	Union Council
	1.10	Village
	1.11	NA Constituency
	1.12	PP Constituency
	1.13	Watercourse Name
	1.14	Source of irrigation
	a	Canal Area
	b	Non-Canal Area
If 'Canal area' in Q.# 1.14 then Continue with Q.# 1.15		Otherwise continue with Q# 1.19
	1.15	Canal
	1.16	Branch
	1.17	Distributary
	1.18	Minor
	1.19	Type of Water Source?
	a	Perennial Canal
	b	Annual Canal
	c	Tube Well
	1.20	Watercourse Improvement Category?
	a	Regular (New)
	b	20 Years Old
	c	Additional Lining
	1.21	Type of Watercourse?
	a	Parabolic

	b	Rectangular/ Bricks
	c	PVC
	d	RCC
	e	Stone Masonry
	1.22	Location Of Watercourse on the Canal/Branch/Distributary/Minor?
	a	Head
	b	Middle
	c	Tail
	1.23	Financial Year
	1.24	Comments

Watercourse Monitoring Tool-2 (DPMIF)

Watercourse Profile Information

Fill by OFWM - Field Team

DB.#	Q.#	Field Name
	1.1	Province/ Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Watercourse ID
	1.6	Coordinate - Latitude _____ Longitude _____
	1.7	Picture of Watercourse - Before Lining
	1.8	Name of Water User's Association Chairman
	1.9	Total Number of Water Users
	1.10	Total Number of Shareholder
	1.11	Male - Water User's Association Members
	1.12	Female - Water User's Association Members
	1.13	Total Water User's Association Members
	1.14	Culturable Command Area (CCA) - (Acres)
	1.15	Total Length of Watercourse - (Meters)
	1.16	Sanctioned Length of Watercourse - (Meters)
	1.17	Comments (if any) (optional)

Watercourse Monitoring Tool-3 (DPMIF)

Watercourse Reference Documents

Fill by OFWM - District Team

DB.#	Q.#	Field Name
	1.1	Province/ Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Watercourse ID
	1.6	Certificate of Watercourse not Improved Before (In case of Regular Watercourse)
	1.7	Certificate of Previously improved watercourse (In case of Additional Watercourse)
	1.8	Certificate issued by the designed district officer that no pending recovery on watercourse (In case of Regular Watercourse)
	1.9	Certificate issued by the designed district officer that old watercourse has been repaired/maintained (In case of Additional Watercourse)
	1.10	Share Holder's Application
	1.11	Tehsil
	1.12	List of Shareholder's with Land Holding
	1.13	Agreement Bond on Judicial Paper
	1.14	List of Executive Committee
	1.15	WUA Particulars
	1.16	Application for Registration of WUA
	1.17	Registration Certificate of WUA
	1.18	Bank Receipt Deposit of 15% of Total Watercourse Cost (Farmer Share 50% Prior to Certification on ICR-I and Remaining 50% prior to ICR-II)
	1.19	Sanctioned Discharge
	1.20	Basic Data Sheet
	1.21	Topo Map
	1.22	Profile Map
	1.23	Technical Sanction of Cost Estimate
	1.24	Voucher of Approved by Concerned/Designed District officer for Release of 1st Installment
	1.25	Voucher of Approved by Concerned/Designed District officer for Release of 2nd Installment
	1.26	Voucher of Approved by Concerned/Designed District officer for Release of 3rd Installment
	2.0	Comments (if any) (optional)

Watercourse Monitoring Tool-4 (DPMIF)

Watercourse Payment Details Fill by OFWM - Directorate Team

DB.#	Q.#	Field Name
	1.1	Province/ Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Watercourse ID
	1.6	Sanctioned Amount of T.S - (Rs.)(PKR)
	1.7	Issuance Date of T.S.
	1.8	Revised Sanctioned Amount of T.S - (Rs.)(PKR)
	1.9	Issuance Date of Revised T.S.
	1.10	Amount of 1st Milestone Released (ICR-I) - (Rs.)(PKR)
	1.11	Released date of 1st Milestone (ICR-I)
	1.12	Amount of 2nd Milestone Released (ICR-II) - (Rs.)(PKR)
	1.13	Released date of 2nd Milestone (ICR-II)
	1.14	Amount of 3rd Milestone Amount (Remaining Payment on the issuance of FCR)
	1.15	Released date of 3rd Milestone Amount (Remaining Payment on the issuance of FCR)
	1.16	Financial Year
	2.0	Comments (if any) (optional)

Watercourse Monitoring Tool-5 (DPMIF)

Watercourse Consultant Form

Fill by PC - Field Team

DB.#	Q.#	Field Name
	1.1	Province/ Unit
	1.2	Division
	1.3	District
	1.4	Tehsil
	1.5	Watercourse ID
Intermediate Completion Reports (ICRs)		
	2.1	Date of ICR-I Certificate
	2.2	Picture of ICR-I Certificate
	2.3	Date of ICR-II Certificate
	2.4	Picture of ICR-II Certificate
FCR Detail Data		
	3.1	Watercourse Commencement Date
	3.2	Watercourse Completion Date
	3.3	Date of Watercourse Verification Visit
	3.4	Date of FCR Issued by PC
	3.5	Picture of FCR Issued by PC-Page-1
	3.6	Picture of FCR Issued by PC-Page-2
	3.7	Coordinate - Latitude _____ Longitude _____
	3.8	Picture of Improved Watercourse
	3.9	Water User's Association Registration No.
	3.10	Designed Discharge (LPS)
	3.11	Type of Watercourse?
	a	Rectangular/ Bricks
	b	Parabolic
	c	PVC 3"
	d	PVC 4"
	e	RCC
	f	Stone Masonry
	3.12	No. of lined Section
	a	Lined Section-1
	b	Lined Section-2
	c	Lined Section-3

	d	Lined Section-4
	e	Lined Section-5
	3.13	Bed Width (Meters)
	3.14	Depth (Meters)
	3.15	Slide Slope
Unit Volume/Length		
	4.1	Brick Work (Cft/ft)
	4.2	Concrete Work (Cft/ft)
	4.3	Stone Masonry (Cft/ft)
Total Volume		
	5.1	Brick Work (Cft)
	5.2	Concrete Work (Cft)
	5.3	Stone Masonry (Cft)
	5.4	Total Earthwork of all type (Cft)
Detail of Civil Works		
	6.1	Plastering (Sft)
	6.2	Forming, Dressing & Finishing Surface for lining (Sft)
	6.3	Brick Filling with surplus earth (Sft)
	6.4	Ground clearance/sarkanda disposal (Sft)
	6.5	Naccas
	6.6	Bitumen (Sft)
	6.7	Arch Culverts
	6.8	Slab Culverts
	6.9	Pipe Culverts
	6.10	Retaining Walls
	6.11	Drop Structures
	6.12	Buffalo Wallow
	6.13	Washing Pad
	6.14	Manhole
	6.15	PVC Bends
	6.16	Sluice Valve
	6.17	Air Valve
	6.18	Socket
	6.19	G.I. Pipe
Cost of Civil Works		
	7.1	Earthwork - Quantity (Cft)
	7.2	Earthwork - Unit Rate

7.3	Earthwork Excavation in Irrigation Channel/Drains - Quantity (Cft)
7.4	Earthwork Excavation in Irrigation Channel/Drains - Unit Rate
7.5	Forming & Dressing WC Surface (Bed) - Quantity (Cft)
7.6	Forming & Dressing WC Surface (Bed) - Unit Rate
7.7	Forming & Dressing WC Surface (Slopes)
7.8	Forming & Dressing WC Surface - Unit Rate
7.9	Ground clearance/Sarkanda Disposal - Quantity (Sft)
7.10	Ground clearance/Sarkanda Disposal - Unit Rate
7.11	Brick Work Quantity - Quantity (Cft)
7.12	Brick Work Quantity - Unit Rate
7.13	Concrete Work (PCC) (Bed) - Quantity (Cft)
7.14	Concrete Work (PCC) (Bed) - Unit Rate
7.15	Concrete Work (PCC) (Berm) - Quantity (Cft)
7.16	Concrete Work (PCC) (Berm) - Unit Rate
7.17	Concrete Work (PCC) (Slopes) - Quantity (Cft)
7.18	Concrete Work (PCC) (Slopes) - Unit Rate
7.19	Concrete Work (PCC) (Coping)
7.20	Concrete Work (PCC) (Coping) - Unit Rate
7.21	Plastering (inch thick) - Quantity (Sft)
7.22	Plastering (inch thick) - Unit Rate
7.23	Bitumen - Quantity (Sft)
7.24	Bitumen - Unit Rate
7.25	Washing Pad - Quantity (No.)
7.26	Washing Pad - Unit Rate
7.27	RCC Pipeline - Quantity (ft)
7.28	RCC Pipeline - Unit Rate
7.29	RCC Pipe Culvert - Quantity (No.)
7.30	RCC Pipe Culvert - Unit Rate
7.31	Backfilling with surplus earth - Quantity (Cft)
7.32	Backfilling with surplus earth - Unit Rate
7.33	Re-handling of Earthwork - Quantity (Cft)
7.34	Re-handling of Earthwork - Unit Rate
7.35	Installation of Nacca Structure 3-way outlet - Quantity (No.)
7.36	Installation of Nacca Structure 3-way outlet - Unit Rate
7.37	UPVC Pipeline - Quantity (ft)
7.38	UPVC Pipeline - Unit Rate
7.39	UPVC Bends - Quantity (No.)

	7.40	UPVC Bends - Unit Rate
	7.41	Sluice Valve - Quantity (No.)
	7.42	Sluice Valve - Unit Rate
	7.43	G.I. Pipe - Quantity (Rft)
	7.44	G.I. Pipe - Unit Rate
	7.45	PVC Sockets - Quantity (No.)
	7.46	PVC Sockets - Unit Rate
	7.47	Air Valve - Quantity (No.)
	7.48	Air Valve - Unit Rate
	7.49	Panel Nacca - Quantity (No.)
	7.50	Panel Nacca - Unit Rate
	7.51	Manhole - Quantity (No.)
	7.52	Manhole - Unit Rate (No.)
	7.53	Signboard - Unit Rate
	7.54	Total Cost of Civil Works/Construction Material
	7.55	Amount already paid through First Installment
	7.56	Amount already paid through Second Installment
	7.57	Total Amount Paid through First & Second Milestone
	7.58	Amount to be paid as Third/Final Installment
	7.59	Farmer's Share
	7.60	Amount to be recovered in case of any issue
	7.61	Describe Issue Detail
	7.62	Financial Year
	8.0	Comments

WST Monitoring Tool-1 (DPMIF)

WATER STORAGE TANK (WST)

Fill by OFWM District Team

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Province / Unit?
	1.2	Davison?
	1.3	District?
	1.4	Tehsil?
	1.5	Field Team?
	1.6	Union Council?
	1.7	Village
	1.8.1	NA Constituency
	1.8.2	PP Constituency
	1.9	Name of Farmer?
	1.10	Name of Father?
	1.11	CNIC?
	1.12	Cell #?
	1.13	Sources of Irrigation System
	1	Canal Water
	2	Rainfall
	3	Tail Water Recovery Ditch (TWRD)
	4	Stream
	5	Naala
	6	Spring
	7	Tube well
	8	Dug well
	1.14	Area Operated (Acres)
	1.15	Land Topography
	1	Even
	2	Uneven
	1.16	Financial Year
	1.17	Comments

WST Monitoring Tool-2 (DPMIF)

PROCESS MONITORING FOR WATER STORAGE TANK (WST) Fill by OFWM District Team

DB#	Q#	Field Name
	1.1	Province / Unit?
	1.2	Davison?
	1.3	District?
	1.4	Tehsil?
	1.5	WST ID _____
2.PROCESS OF WATER STORAGE TANK CONSTRUCTION		
	2.1	Date of survey cost/design approved by Director?
	2.2	Date of issuance of T.S Issued by Director?
	2.3	Picture of T.S Issued by Director?
	2.4	Date of issuance of work order by OFWM?
	2.5	Picture of issuance of work order by OFWM?
	2.6	Date of ICR-I (Intermediate Completion Report-I)?
	2.7	Amount of ICR-I (Intermediate Completion Report-I)?
	2.8	Date of ICR-II (Intermediate Completion Report-II)?
	2.9	Amount of ICR-II (Intermediate Completion Report-II)?
	2.10	Total cost of the Water Storage Tank
	2.11	Project share Rs. _____
	2.12	Farmer Share Rs. _____
	2.13	Financial Year
	2.14	Comments

WST Monitoring Tool-3 (DPMIF)

PROCESS MONITORING FOR WATER STORAGE TANK (WST)

Fill by PC - Field Team

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	Province / Unit?
	1.2	Division?
	1.3	District?
	1.4	Tehsil?
	1.5	WST ID _____
	1.6	Year of Improvement?
2.PROCESS OF WATER STORAGE TANK CONSTRUCTION		
	2.1	Date of cost estimate/ design approved by NWM Consultants?
	2.2	Cost estimate as approved by PC?
	2.3	Date of ICR-I (Intermediate Completion Report-I)?
	2.4	Picture of ICR-I (Intermediate Completion Report-I)?
	2.5	Date of ICR-II (Intermediate Completion Report-II)?
	2.6	Picture of ICR-II (Intermediate Completion Report-II)?
	2.7	Date of issuance of FCR of WST by PC?
	2.8	Picture of FCR of WST by PC?
	2.9	Total cost of the Water Storage Tank
	2.10	Project share Rs. _____
	2.11	Farmer Share Rs. _____
	2.12	Picture of constructed Water Storage Tank?
3.WST MATERIAL CONSUMED & EXPENDITURE		
	3.1	Bottom Length (Inner)(ft)?
	3.2	Bottom Width (Inner)(ft)?
	3.3	Walls Thickness (ft)?
	3.4	Depth of Wall (ft)?
	3.5	Quantity of Cleared Jungle (Sft)?
	3.6	Unit rate of Cleared Jungle (Rs)?
	3.7	Quantity of Cutting, levelling & dressing of bed (Sft)?
	3.8	Unit rate of Cutting, levelling & dressing of bed (Rs)?
	3.9	Quantity of 2" sand cushion under floor (Sft)
	3.10	Unit rate of 2" sand cushion under floor (Rs)?
	3.11	Quantity of Fillet volume: horizontal (..... M x m) (Sft)?

	3.12	Unit rate of Fillet volume: horizontal (..... M x M)(Rs)?
	3.13	Quantity of fillet volume: vertical (..... M x m) (Sft)?
	3.14	Unit rate of fillet volume: vertical (..... M x m)(Rs)?
	3.15	Quantity of brick masonry works (Cft)?
	3.16	Unit rate of brick masonry works(Rs)?
	3.17	Quantity of PCC 1:4:8 (Cft)?
	3.18	Unit rate of PCC 1:4:8 (Rs)?
	3.19	Quantity of PCC 1:3:6 (Cft)?
	3.20	Unit rate of PCC 1:3:6 (Rs)?
	3.21	Quantity of PCC 1:2:4 (floor in panels with glass strips) (Sft)?
	3.22	Unit rate of PCC 1:2:4 (floor in panels with glass strips) (Rs)?
	3.23	Quantity of PCC 1:2:4 (Cft)?
	3.24	Unit rate of PCC 1:2:4 (Rs)?
	3.25	Quantity of cast iron sluice valves (6")?
	3.26	Unit rate of cast iron sluice valves (6") (Rs)?
	3.27	Quantity of excavation works (Cft)?
	3.28	Unit rate of excavation works (Rs)?
	3.29	Quantity of Backfilling (Cft)?
	3.30	Unit rate of Backfilling (Rs)?
	3.31	Quantity of G.I pipe (size: 3") (ft)?
	3.32	Unit rate of G.I pipe (size: 3") (Rs)?
	3.33	Quantity of G.I pipe (size: 6") (ft)?
	3.34	Unit rate of G.I pipe (size: 6") (Rs)?
	3.35	Cost of Sign board (3ft x 4ft) (Rs.)?
	4	Comments

LLL Monitoring Tool-1 (DPMIF)

PROCESS MONITORING OF LASER LAND LEVELER

Fill by OFWM District Team

1. IDENTIFICATION		
DB#	Q#	Field Name
	1.1	LLL ID: _____
2. OTHER DETAILS OF SERVICE PROVIDER		
	2.1	Area owned by service provider (Acres)
	2.2	Location of service provider area
	1	Perennial
	2	Non-Perennial
	3	Non Canal Area
	2.3	Have you own a tube well
	1	Yes
	2	No
	2.4	Provide other services to farmers
	1	Yes
	2	No
If "Yes" in Q.#2.4 then continue with Q.#2.5		Otherwise got Q#2.6
	2.5	Name of services/machinery
	2.6	Are you an agriculture
	1	Graduate
	2	Obligated Literate
3. PROCESS OF MONITORING		
	3.1	Date of Application
	3.2	Date of Eligibility
	3.3	Date of Balloting
	3.4	Date of Issuance of allotment
	3.5	Date of Submission of farmer's share
	3.6	Date of Issuance of work order by DG
	3.7	Date of Inspection by inspection team
	3.8	Make & Model
	3.9	Companies
	3.10	Date of Delivery
	3.11	Unit Price
	3.12	Farmer Share
	3.13	Subsidy
	4	COMMENTS OF INTERVIEWER