



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

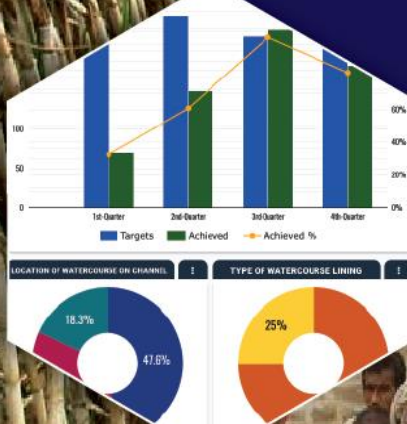
NATIONAL PROGRAM FOR IMPROVEMENT OF WATERCOURSES IN PAKISTAN PHASE-II: (NPIWC-II)

MONITORING, EVALUATION AND IMPACT EVALUATION CONSULTANTS



QUARTERLY MONITORING & EVALUATION REPORT

OCT TO DEC 2024



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



In Association with **S&S Associates**



Federal Project Management Unit (FPMU)
Ministry of National Food Security & Research, Islamabad
Monitoring, Evaluation and Impact Evaluation (ME&IE) Consultants
For

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

QUARTERLY MONITORING AND EVALUATION REPORT

OCTOBER – DECEMBER 2024

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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 period of 1st October 2024 to 31st December 2024 is comprised of five chapters.

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

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

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

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

Chapter -3 of this report covers the detail of ME&IE Consultants’ activities initiating during the reporting period (1st October 2024 to 31st December 2024) as listed below:

- Project Closure Activities (Administrative)
- Post Field Activities
- ICT Assignment
- Coordination
- Deliverables

Chapter 3 also summarizes the compliance status of tentative three month Work Plan.

Chapter-4 of this report describes the activities completed during the reporting period as summarized below:

- Post-field activities: This included following activates of the submitted baseline survey consolidated report:
 - Detailed Data Review and Error Checking
 - Statistical Validation
 - Focused Comparison and Trend Analysis
 - Enhanced Data Cleaning
 - Final Report Structure and Content Review
- Monitoring of online data collection and Data entry;
- Data collection of interventions in MIS/GIS database;
- Submitted endline survey draft report;
- Submitted consolidated baseline report;
- Submitted the MMRs for September, October & November 2024; and QM&ER for Jul-Oct 2024;
- Meetings of ME&IE Consultants with the respective Stakeholders about Project Progress / Issues in hand and its prospects.

Chapter-5: highlights the problems faced by the consultants during the ME&IE activities. Due to non-availability of data from NWMC (NESPAK) & respective Directorates, and resources from Client, ME&IE Consultants have been facing constraints for timely completion of activates of the assignment.

Table-ES-1: Compliance Status of Three Month Tentative Work Plan, 1st October 2024 to 31st December 2024

No.	Activities Planned for the Three Months (Oct-Dec 2024)	Status
1	Project Closure Activities (Administrative)	
1.2	Preparing Remuneration & Reimbursable invoices	Accomplished
1.3	Handing over the project assets to the client	Will be handed over at the stipulated time
2	Post field activities	
2.1	Detailed Data Review and Error Checking	Accomplished
2.2	Statistical Validation	Accomplished
2.3	Focused Comparison and Trend Analysis	Accomplished
2.4	Enhanced Data Cleaning	Accomplished
2.5	Final Report Structure and Content Review	Accomplished
3	ICT Assignment:	
3.1	Improvement/Updation of website of NPIWC-II	Accomplished
3.2	Monitoring online data collection and data entry	In Progress
3.3	Monitoring Android-based Mobile Application under implementation by field staff.	In Progress
3.4	Data collection of interventions in MIS/GIS database	In Progress
3.5	Capacity Building Trainings / Refresher of Departments	In Progress
3.6	Data entry, Data cleaning, Data processing & data analysis.	In Progress
4	Coordination	
4.1	Meetings of TL, ME&IE Consultants with NPC regarding Project Progress / Issues	Meetings conducted regularly
4.2	Meeting of DTLs with respective DTL of NWMC	Meetings conducted regularly
4.3	Internal Meetings of ME&IE Consultants	Weekly meetings conducted on a regular basis
5	Deliverables:	
5.1	Monthly Monitoring Reports (MMRs)	45 th MMR (Sep 2024) 46 th MMR (Oct 2024)
		Submitted
5.2	Quarterly Monitoring & Evaluation Report (QM&ER)	47 th MMR (Nov 2024) QM&ER Jul-Sep 2024
		Submitted
5.3	Baseline Survey Report	Baseline Survey Report Consolidated
		Submitted
5.4	Endline Survey Report	Endline Survey Report
		Submitted
5.5	Draft Assignment Completion Report	Draft Assignment Completion Report
		Will be submitted on the stipulated time

CHAPTER-1: INTRODUCTION

1.1 PROJECT PROFILE

Project Name	National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)
Project Areas	Punjab, KP, Balochistan, Gilgit Baltistan, Azad Jammu & Kashmir, and Islamabad Capital Territory (ICT)
Sponsoring Agency	Ministry of National Food Security & Research
Executing Agencies (EAs)	Following are different EAs: <ul style="list-style-type: none"> i. Federal Project Management Unit (FPMU), ii. DGA OFWM Punjab iii. DGA OFWM KP iv. DGA OFWM Balochistan v. Director Irrigation and Small Dams, AJK vi. Director WM, GB vii. Director Agriculture Extension Services (AES) ICT
Project Period	5 Year (2019-2024)
Total Project Cost	154,542.355 million (Umbrella PC-1, including Sindh)
ME&IE Consultancy Period	4 year
ME&IE Consultant:	JV of G3 Engineering Consultants (Pvt.) Ltd., EASE PAK Engineering Services (Pvt.) Ltd., Centre for Social Research and Development (CSR D) and ADA Consultants Inc. Canada
ME&IE Consultant Mobilized	November 07, 2020

1.2 PROJECT DESCRIPTION

1.2.1 PROJECT DEVELOPMENT OBJECTIVES

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

1.2.2 PROJECT OBJECTIVES – GENERAL & QUANTITATIVE

1) General Objectives:

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

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

2) Quantitative Objectives:

The quantitative objectives of the Project are as under:

Project outputs

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

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

1.3 PROJECT BENEFICIARIES

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

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

1.4 PROJECT COMPONENTS

The NPIWC-II comprises of four components:

C1: ORGANIZATION OF WATER USERS ASSOCIATIONS:

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

- i. Provide right of way for constructing watercourse,
- ii. Arrange skilled and unskilled labour required for reconstruction / maintenance of earthen water channel, installation of water control structures, and lining of critical reaches,

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

C2: WATERCOURSE IMPROVEMENTS:

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

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

C3: CONSTRUCTION OF WATER STORAGE TANKS:

Construction of 14,932 Water Storage Tanks (WSTs).

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

C4: PROVISION OF LASER LAND LEVELING UNITS:

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

1.4.1 PROJECT TARGETS

The works are being undertaken in the Province of Punjab, Khyber Pakhtunkhwa (KP), and Balochistan 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**. Project aims at achieving the targets for 5 years starting from the year 2019-

20 to 2023-24, presented in **Figure-1.2**. The targets for each Province / Zone (excluding Sindh) are presented in **Figure-1.3**.

Project Targets

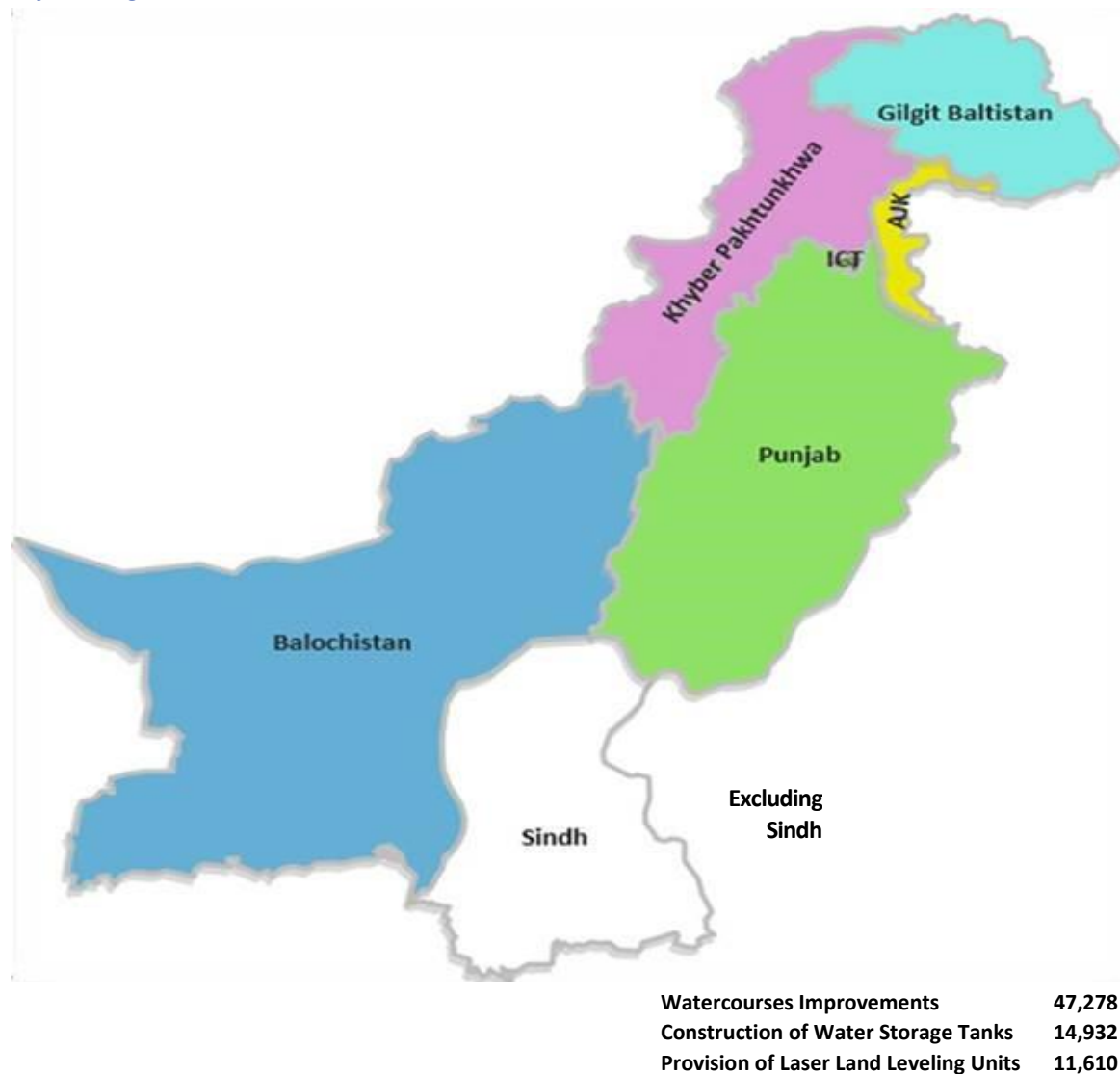


Figure 1.1: Location Map & Pakistan Targets

Table 1.1: Project Targets (in numbers)

SR. NO.	INTERVENTION	PUNJAB	KP	BALUCHISTAN	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	2,500	1,165	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

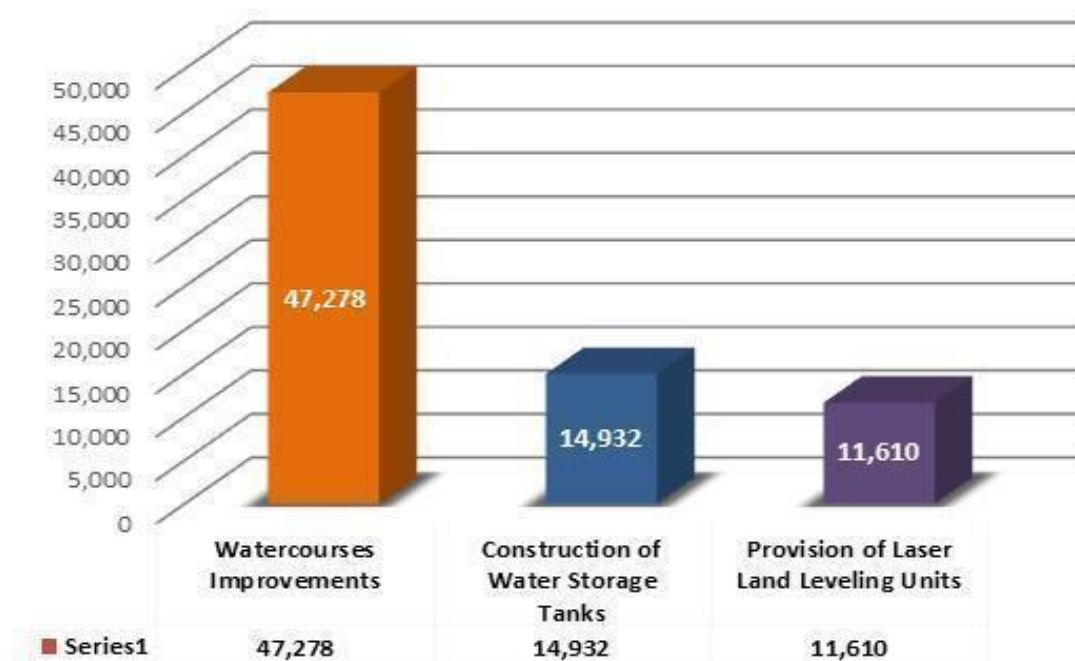


Figure 1.2: National Level Targets

Table 1.2: 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 1.3: 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 1.4: 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

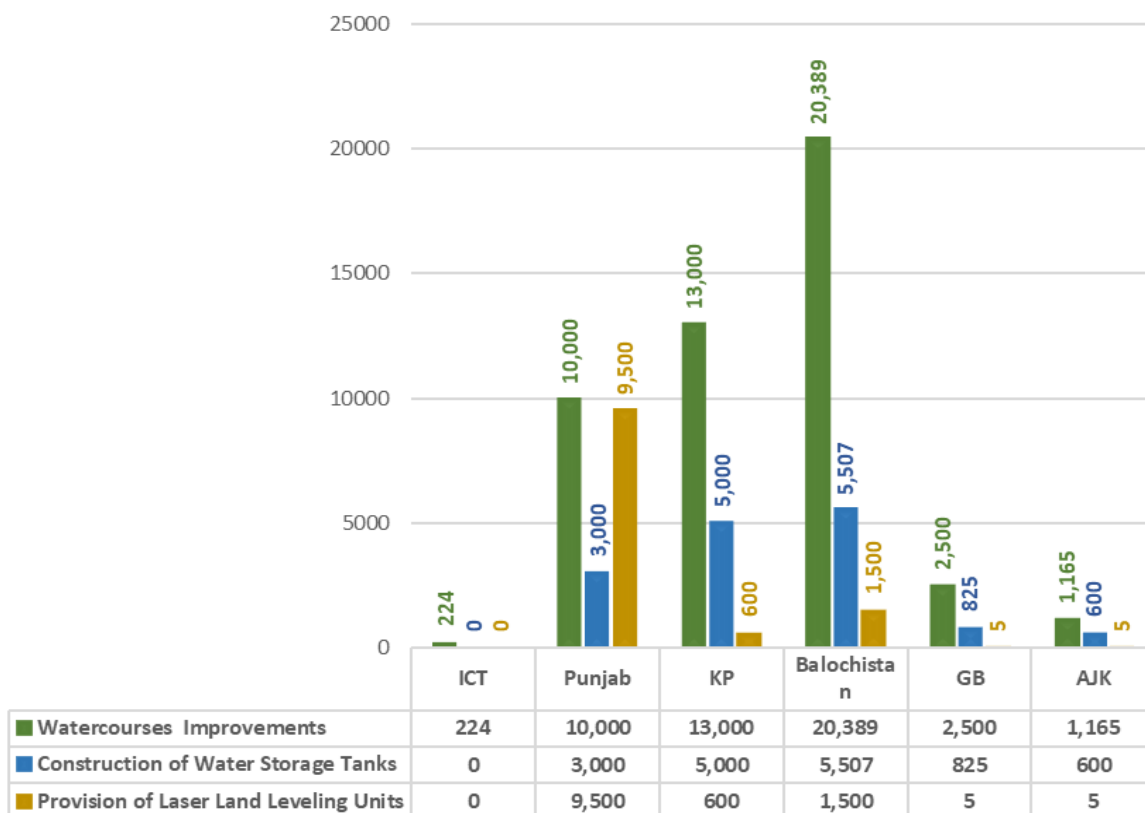


Figure 1.3: Zonal/Unit Level Targets

CHAPTER 2: SCOPE AND SERVICES OF ME&IE CONSULTANTS

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

2.1 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.

2.2 SCOPE OF THE SERVICES

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

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

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

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

2.3 MONITORING STRATEGY

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

Evaluations and Impact Evaluations of the project interventions were explained in Chapter 6 of Inception Report. The strategy aims to be finalized

and implemented in close coordination with the client and active participation of the beneficiaries as well as the project stakeholders.

Table 2.1: Monitoring Strategy for ME&IE Activities

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
1	Baseline, midline and endline surveys	Team Leader, Socio-Economic Expert, Agricultural Economist and Deputy Team Leader of respective province/unit.	<ul style="list-style-type: none"> Baseline and impact surveys will be carried out on a 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. Based on water savings on sample watercourses, total water

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
			<p>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> <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> <p>Based on water savings on sample LLL units, total water savings will be estimated for all project LLL units. The savings will be reported per LLL unit, per annum and aggregate for the project in LPS and in Acre feet.</p>
4	Community mobilization	Social and Gender Specialist and Socio-Economic Expert	<p>The extent of community mobilization will be assessed by investigating whether:</p> <ul style="list-style-type: none"> WUAs is functional Holds regular meetings and keep record of them Makes decisions democratically The participation in the organization is voluntary It is financially and administratively sustainable Takes steps and ensures maintenance of watercourses, WSTs and laser land leveler
5	Economic benefits assessment for agriculture	Team Leader, Socio- Economist and Agricultural Economist	<ul style="list-style-type: none"> As indicated at serial No. 1, Agriculture data will be collected before (baseline) and after (impact) the watercourse improvement and WSTs construction. In both the surveys same forms will be used and same sampled farmers will be interviewed Data on variables such as crop yields, irrigated area, cropping pattern, cropping intensity, farm income and employment will be collected and analyzed The difference between before and after situations minus natural growth will be assumed as economic benefits to the agriculture
6	Impact evaluation-on	Team Leader, Agricultural	<ul style="list-style-type: none"> The results of the baseline and impact surveys will be used to quantify impact on the economy

Sr. No.	Monitoring Activity	ME&IE Team Responsible	Monitoring Strategy
	the economy	Economist and Socio-Economic Expert	<ul style="list-style-type: none"> 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 leveling units, the interventions will be spot checked for quality of construction, material, functioning and beneficiaries' satisfaction, etc.
9	Process monitoring	Field Teams of Agriculture Deptt., Project Consultants, ME&IE Consultants & ICT/Technology Specialist	<ul style="list-style-type: none"> The processed 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.

refined in consultation with the client as well as stakeholders.

2.4 FRAMEWORK AND RESULTS-BASED MONITORING (RBM) INDICATORS

The framework and Results-Based Monitoring (RBM) Indicators are identified in Table-2.2 of Inception Report. The indicators will be further enhanced and

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

CHAPTER 3: WORK PLAN OF THE CONSULTANTS FOR THREE MONTHS

3.1 COMPLIANCE STATUS OF WORK PLAN OF FOUR MONTHS OCT-DEC 2024

The ME&IE Consultants' activities initiating during the second three months of the financial year, 2024-2025 (1st October 2024 to 31st December 2024) are outlined below. For a detailed breakdown of the time frame, please refer to the tentative Work Plan for three months (1st October 2024 to 31st December 2024) provided in **Annex-A**.

3.1.1 Project Clouser Activities (Administrative)

- Preparing Remuneration & Reimbursable invoices
- Handing over the project assets to the client

3.1.2 Post Field Activities

- Detailed Data Review and Error Checking
- Statistical Validation
- Focused Comparison and Trend Analysis
- Enhanced Data Cleaning
- Final Report Structure and Content Review

3.1.3 ICT Assignment

- Improvement/Updation of website of NPIWC-II
- Monitoring online data collection and data entry
- Monitoring Android based Mobile Application under implementation by field staff.
- Data collection of interventions in MIS/GIS database
- Capacity Building Trainings / Refresher of Departments
- Data entry, Data cleaning, Data processing & data analysis.

3.1.4 Coordination

- Meetings of TL with NPC and OFWM Departments regarding Project Progress / Issues
- Meeting of DTLs with respective DTL of P C & concerned OFWM Departments
- ME&IE Consultants Internal Meetings

3.1.5 Deliverables

- Monthly Monitoring Reports
- Quarterly Monitoring & Evaluation Report (QM&ER)
- Baseline Survey Consolidated Report

- Endline Survey Report
- Draft Assignment Completion Report

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

Document	Status
Draft Inception Report	Submitted
Final Inception Report	Submitted
Monthly Monitoring Report-First (DEC 2020-JAN 2021)	Submitted
Monthly Monitoring Report-Second (FEB 2021)	Submitted
Monthly Monitoring Report-Third (MAR 2021)	Submitted
Quarterly Monitoring & Evaluation Report (JAN-MAR 2021)	Submitted
Monthly Monitoring Report-Fourth (APR 2021)	Submitted
Monthly Monitoring Report-Fifth (MAY 2021)	Submitted
Monthly Monitoring Report-Sixth (JUNE 2021)	Submitted
Quarterly Monitoring & Evaluation Report (APR-JUN 2021)	Submitted
Annual Monitoring & Evaluation Report (1 st DEC 2020 to JUN 2021)	Submitted
Monthly Monitoring Report-Seventh (JULY 2021)	Submitted
Monthly Monitoring Report-Eighth (AUG 2021)	Submitted
Baseline Survey Report-I	Submitted
Monthly Monitoring Report-Ninth (SEPTEMBER 2021)	Submitted
Quarterly Monitoring & Evaluation Report (JULY - SEPTEMBER 2021)	Submitted
Monthly Monitoring Report-Tenth (OCTOBER 2021)	Submitted
Monthly Monitoring Report-Eleventh (NOVEMBER 2021)	Submitted
Monthly Monitoring Report-Twelfth (DECEMBER 2021)	Submitted
Quarterly Monitoring & Evaluation Report year 2021 (OCTOBER – DECEMBER 2021)	Submitted
Monthly Monitoring Report-Thirteenth (JANUARY 2022)	Submitted
Monthly Monitoring Report-Fourteenth (FEBRUARY 2022)	Submitted
Monthly Monitoring Report-Fifteen (MARCH 2022)	Submitted

Document	Status
Quarterly Monitoring & Evaluation Report- year 2022 (JANUARY – MARCH 2022)	Submitted
Monthly Monitoring Report-Sixteen (APRIL 2022)	Submitted
Monthly Monitoring Report-Seventeenth (MAY 2022)	Submitted
Monthly Monitoring Report-Eighteenth (JUNE 2022)	Submitted
Quarterly Monitoring & Evaluation Report- year 2022 (APRIL – JUNE 2022)	Submitted
Annual Monitoring & Evaluation Report (2 nd) Jul 2021-June 2022	Submitted
Monthly Monitoring Report-Nineteenth (JULY 2022)	Submitted
Monthly Monitoring Report-Twentieth (AUGUST 2022)	Submitted
Monthly Monitoring Report-Twenty First (SEPTEMBER 2022)	Submitted
Quarterly Monitoring & Evaluation Report- year 2022 (JUL – SEP 2022)	Submitted
Monthly Monitoring Report-Twenty Second (OCTOBER 2022)	Submitted
Monthly Monitoring Report-Twenty Third (NOVEMBER 2022)	Submitted
Monthly Monitoring Report-Twenty Fourth (DECEMBER 2022)	Submitted
Monthly Monitoring Report-Twenty Fifth (JANUARY 2023)	Submitted
Monthly Monitoring Report-Twenty Sixth (FEBRUARY 2023)	Submitted
Monthly Monitoring Report-Twenty Seventh (March 2023)	Submitted
Monthly Monitoring Report-Twenty-eighth (April 2023)	Submitted
Quarterly Monitoring & Evaluation Report- year 2023 (JAN – MAR 2023)	Submitted
Monthly Monitoring Report-Twenty-Ninth (May 2023)	Submitted
Monthly Monitoring Report-Thirtieth (June 2023)	Submitted
Monthly Monitoring Report-Thirty First (July 2023)	Submitted
Monthly Monitoring Report-Thirty Second (August 2023)	Submitted
Monthly Monitoring Report-Thirty Third (September 2023)	Submitted
Quarterly Monitoring & Evaluation Report-1 st Quarter	Submitted

Document	Status
year 2023 (Jul – Sep 2023)	
Monthly Monitoring Report-Thirty Fourth (October 2023)	Submitted
Monthly Monitoring Report-Thirty Fifth (November 2023)	Submitted
Monthly Monitoring Report-Thirty Sixth (December 2023)	Submitted
Quarterly Monitoring & Evaluation Report-2 nd Quarter year 2023-24 (Oct – Dec 2023)	Submitted
Monthly Monitoring Report-Thirty Seventh (January 2024)	Submitted
Monthly Monitoring Report-Thirty Eighth (February 2024)	Submitted
Monthly Monitoring Report-Thirty Ninth (March 2024)	Submitted
Quarterly Monitoring & Evaluation Report- year 2023-24 (Jan – Mar 2024)	Submitted
Monthly Monitoring Report-Fortieth (April 2024)	Submitted
Monthly Monitoring Report-Forty First (May 2024)	Submitted
Monthly Monitoring Report-Forty Second (June 2024)	Submitted
Quarterly Monitoring & Evaluation Report- year 2023-24 (Apr – Jun 2024)	Submitted
Monthly Monitoring Report-Forty Third (July 2024)	Submitted
Monthly Monitoring Report-Forty fourth (August 2024)	Submitted
Monthly Monitoring Report-Forty fifth (September 2024)	Submitted
Quarterly Monitoring & Evaluation Report- year 2024-25 (Jul – Sep 2024)	Report in hand
Baseline Survey Report - II	Submitted
Baseline Survey Report-II (Updated version WC)	Submitted
Baseline Survey Report -II (Draft version of WSTs)	Submitted
Mid-Line Monitoring & Impact Evaluation Report	Submitted
Consolidated Baseline Survey Report (Phase-I&II)	Submitted
Mid-Term Monitoring and Impact Evaluation Report	Submitted
Special Reports submitted: 1) Monitoring Tools 2) Survey Manual on MTs 3) PAM	Submitted

Document	Status
4) Working Paper on Technology and Methodology for Implementation of Android Based Field Progress Data Collection and GIS Based Progress Monitoring Analytical Dashboard.	
5) Survey Methodology & Questionnaires for Baseline Survey Phase-II	
6) Baseline-End Line Manual Survey Manual	
7) Android Application PMIS Dashboard Manual	
8) Survey Manual on MTs (Updated)	
9) Water Saving Through NPIWC-II Project Interventions	
10) Special Report on Monitoring and Impact Evaluation of Precision (Laser) Land Leveling	
11) Monitoring, Evaluation, and Impact Analysis of The Project "NPIWC-II".	

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

3.2 MATRIX OF RESPONSIBILITIES

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

CHAPTER 4: ACTIVITIES DURING THE REPORTING QUARTER

4.1 INTRODUCTION

The Quarterly Monitoring & Evaluation Report (QM&ER) provides an overview of our comprehension of all the activities outlined in the ME&IE assignment's Terms of Reference (TORs) and their timely execution within the prescribed timeframe.

4.2 OBJECTIVE OF QM&ER

The primary aim of the Quarterly Monitoring and Evaluation role within the monitoring and evaluation framework Report (QM&ER) is to inform the Client about the activities undertaken by the ME&IE Consultants in the current reporting quarter. Reporting plays a fundamental role as under:

4.3 REPORTING QUARTER

This current QM&ER covers the period from 1st October 2024 to 31st December 2024.

This Report provides the progress made in various activities relating to the accomplishment of Monitoring activities of project interventions e.g., Field Survey / Monitoring of the field interventions. This report also describes all activities to be carried out as per quarterly work plan. Activities during the reporting period are given below:

4.4 SUBMISSION OF PROGRESS REPORTS MMRS & QM&ER

As per contractual obligation, the consultants have submitted forty-fifth MMR (Sep 2024), forty sixth MMR (Oct 2024), forty seventh MMR (Nov 2024) and 15th QM&ER Jul-Oct 2024. While the 16th QM&ER (the Report in hand) for 1st October 2024 to 31st December 2024 is being submitted.

4.5 SUBMISSION OF OF BASELINE SURVEY CONSOLIDATED (DRAFT)

Progress Monitoring:

Over the five-year project duration, the target was to improve a total of 47,278 watercourses. However, by the end of June 2024, only 14,443 watercourses had been improved, achieving just 30.5% of the project target. A similar shortfall is observed with the establishment of Water Users Associations (WUAs).

Additionally, the project aimed to construct 14,932 Water Storage Tanks (WSTs) within the same period. By June 2024, only 5,915 WSTs had been constructed, representing 39.6% of the targeted goal.

Monitoring of Component C1 (Organization of WUAs)

On an overall basis, 85% of the sampled farmers were found aware of the existence and functioning of WUAs on their respective watercourses. Approximately 87% of respondents informed that OFWM department held awareness meetings prior to the formation of the WUAs, which were reported to be functioning effectively. About 71% of WUA members participated in these meetings.

In total, 46% are located at the head reaches of watercourse, 29% in the middle reaches and 25% at tail reaches. Regarding meetings, 49% of the respondent farmers informed that meetings by WUAs were held regularly whereas, 25% claimed that no meetings were held and 26% informed that these meetings were held occasionally. In terms of participation, 35% of respondents stated that they always participated in the meetings, 63% participated occasionally and the rest 2% never participated.

Regarding the frequency of meetings, 7% of respondents informed that the meetings were held monthly, 4% quarterly, 3% once a year, and the remaining 86% informed that these meetings were convened on an as-needed basis. Additionally, 94% of member respondents informed the WUAs were established through a democratic process.

About 95% of member farmers responded that they had not encountered any disputes. Among the 5% who had faced disputes, out of which 60% got their disputes resolved always, 33% to some extent and 7% never got their disputes resolved.

Out of 5% of respondents who faced disputes, 26% related to Land Acquisition, 63% on distribution of NACCAS, 8% regarding funding accounts and 3% related to water theft. Of these disputes, 53% were resolved by the WUAs, 42% by the OFWM department and 5% by the Irrigation Department.

Baseline Results of Component C2 (Watercourses)

Land use intensity on sample farms covered under baseline surveys ranged from 71.5% in Balochistan to 94.1% in Punjab, with an overall average of 88.3% for the sample farms and 90.2% for all farms on the 14,443 completed watercourses. In Canal and Non-Canal Command areas it has been estimated as 92.8% and 80.7% respectively.

Cropping intensity on sample farms varied from 102.3% in Khyber Pakhtunkhwa (KP) to 188.9% in the Punjab, with an average of 157.0% for sample farms and 169.9% for all farms on the 14,443 completed watercourses. In Canal and Non-Canal

Command areas it has been estimated as 179.7% and 112.5% respectively.

The average crop yield per acre for the sample farms are critical measure of the project's impact on agriculture productivity. The yield, expressed in maunds per acre, varied by crop, with some regions showing higher productivity for certain crops. Crop yields per acre on all sample farms averaged 30.5 maunds for wheat, 28.2 maunds for rice, 26.2 maunds for cotton, 48.0 maunds for maize, 728.8 maunds for sugarcane, 383.5 maunds for rabi fodder, 357.2 maunds for kharif fodder. Minor crop yields ranged from 5.4 to 58.7 maunds, 93.0 to 100.2 maunds for fruits and 75.4 to 193.3 maunds for vegetables. These crop yields are weighted averages of crop yields in various zones / units included in the project.

The total crop area on all sample farms was also substantial, providing an understanding of the scale of agricultural production. Crop area on all sample farms has totaled 14,760 acres for wheat, 5,521 acres for rice, 5,098 acres for cotton, 2,052 acres for maize, 1,447 acres for sugarcane, 2,336 acres for other minor crops, 1,564 acres under vegetables, 2,006 acres under fruits, 840 acres under Rabi fodder, and 512 acres under Kharif fodder. Total crop area under all crops reported is 36,135 acres. These crop areas are total of respective crop areas in various zones / units included under the Project.

The cropping pattern on sample farms, or the share of each crop in the total crop area, was as follows: 41% for wheat, 15% for rice, 14% for cotton, 6% for maize, 4% for sugarcane, 6% for minor crops, 4% for vegetables, 6% for fruits and 4% for fodder.

On average, farm labor employment on the sample farms was calculated at 1,313,156-man days, equating to 36.3-man days per crop acre or 397-man days per sample farm.

The average gross income per acre on the sample farms has been estimated at PKR 94,682, with production cost at PKR 44,389, resulting in a net income at PKR 50,293 per acre.

When the results from the 3,310 sample farmers were super imposed on the total of 248,046 farmers benefited from the improvement of 14,443 watercourses under the project area (as of June 2024), the total farm area, cultivated area, and crop area benefited from the project amounted to 2,133,278 acres, 1,924,067 acres, and 3,269,106 acres, respectively. The gross income from these crop acres was calculated at PKR 309.525 billion, with a net income of PKR 164.413 billion. Zone-wise and unit-wise details are provided in **Table 1**. These baseline

estimates will aid in evaluating the project's benefits and carrying out economic analysis once the impact surveys are completed.

Table 5: Area Benefited and Gross and Net Income of the farms under Completed Watercourses

Zone/Unit	Area Benefited on All Farms under Completed Watercourses			Income of all benefited Farms under Completed Watercourses	
	Farm Area	Cultivated Area	Cropped Area	Gross Income	Net Income
	Acres			Million PKR	
Punjab	1,531,674	1,440,814	2,722,012	257,725	136,898
KP	194,142	177,174	181,244	17,161	9,115
Balochistan	312,046	222,987	252,640	23,920	12,706
GB	83,159	72,068	94,741	8,970	4,765
AJK	12,108	10,905	18,288	1,732	920
ICT	149	120	180	17	9
Overall	2,133,278	1,924,067	3,269,106	309,525	164,413

During the improvement of watercourses, a total of 5,388 trees were cut down. According to the project rules, at least three times the number of trees (32,328) should have been planted to replace those that were removed. However, during the spot check it was observed that only 9,258 saplings (58% of the required number) were planted, out of which 2,844 survived after one year of their plantation.

Spot Checking of Brick-lined Watercourses shows that the compliance with engineering parameters for Rectangular / Brick-lined Watercourses was satisfactory. However, the required lining length as per design was achieved on only 81% of the watercourses. Furthermore, the full-length improvement of watercourses was significantly lacking, with only 23% having fully improved kacha (Unlined) portion. The remaining 77% of watercourses still had an unimproved kacha portion.

Spot Checking of Pre-cast Parabolic Lining (PCPL) Watercourses show satisfactory compliance with most of the engineering parameters. However, the required lining length as per design was achieved on only 77% of watercourses, and full-length improvement noted on just 19%.

Spot Checking of Pipelined Watercourses shows that the quality of pipe was found good in 58% cases, satisfactory in 39%, and poor in only 3% cases. Additionally, the pipeline length as per design was met in 95% cases, bends and flanges were compliant with design specifications in 72% cases, tees in 67% cases, and sockets in 59% cases.

Baseline Results of Component C3 (Water Storage Tanks)

Land use intensity on sample farms covered under baseline surveys has shown considerable variation across regions. The intensity ranged from as low as 68.9% in Balochistan to as high as 91.7% in the Punjab, with an overall average of 79.6% for sample farms. For all farms within the complete schemes in the project area, the land use intensity averaged 78.5%. This indicates that Punjab had the most efficient use of available land, while there is room for improvement in land utilization, particularly in areas like Balochistan, most regions are making efficient use of their land resources.

Cropping intensity – a measure of how intensively land is used for multiple cropping cycles, also showed significant variation. Cropping intensity found lowest at KP, where it reached 98.4% and highest in Punjab, with 159.2%. On average, the cropping intensity across all samples farms was calculated at 116.5%, and 114.6% for all farms under the completed schemes within the project area.

Crop yields per acre on all sample farms have averaged at 29.3 maunds for wheat, 27.0 maunds for rice, 26.2 maunds for cotton, 53.3 maunds for maize, 745.9 maunds for sugarcane, 371.9 maunds for rabi fodder, 358.1 maunds for kharif fodder, 6.0 for pulses, 158 for onion, 160.0 for potato, 92.0 for tomatoes, 74.0 for apples.

Crop area on all sample farms has totaled 917.2 acres for wheat, 361.1 acres for rice, 38.6 acres for cotton, 307.8 acres for maize, 22.4 acres for sugarcane, 67.6 acres for pulses, 837.8 acres under vegetables, 666.1 acres under fruits, 187.5 acres under fodder. Total crop area under all crops reported is 3406.0 acres. These crop areas are total of respective crop areas in various zones / units included under the Project.

The cropping pattern on all sample farms or crop share in total crop area is estimated at 26.9% for wheat, 10.6% for rice, 1.1% for cotton, 9.0% for maize, 0.7% for sugarcane, 2.0% for pulses, 24.6% for vegetables, 19.6% for fruits and 5.5% for fodder.

Farm labor employment on all sample farms on an average has been noted 139,084-man days or 37.85-man days per crop acre or 400.82-man days per sample farm.

Average gross income per acre on all sample farms has been estimated at PKR 118,818, cost of production at PKR 51,858 and net income at PKR 66,961.

When the results of our 347 sample farmers were super imposed on all the 5,915 farmers benefited from

the construction of 5,915 WSTs in the project area up to June 2024; total farm area, cultivated area and total crop area benefited calculations to 62,763 acres, 49,271 acres and 56,440 acres respectively. Gross income from these crop acres comes to PKR 6.706 billion and net income PKR 3.779 billion. Zone wise / unit wise detail is given in **Table 2**. These baseline estimates would help us in determining the project benefits and carrying out economic analysis after the impact surveys are completed.

Table 6: Area Benefited and Gross and net Income of the farms under completed WSTs

Zone/Unit	Area Benefited on All Farms under Completed Schemes			Income of all benefited Farms under Completed Schemes	
	Farm Area	Cultivated Area	Cropped Area	Gross Income	Net Income
	Acres			Million PKR	
Punjab	11,883	10,891	17,335	2,060	1,161
KP	14,720	12,689	12,485	1,483	836
Balochistan	24,030	16,551	16,515	1,962	1,106
GB	5,915	4,414	5,170	614	346
AJK	6,216	4,727	4,935	586	330
Overall	62,763	49,271	56,440	6,706	3,779

On 347 spot checked WSTs, 574 trees were reported to be cut down. In their place 1866 (more than thrice as per requirement) Saplings were planted out of which 394 survived after one year. WST protection arrangements were about 83% satisfactory and 94% WSTs were properly being maintained.

Out of 347 spot checked WSTs, satisfactory Excavation Certificates were issued by the Consultants to 281 (81%) WSTs.

About 263 (76%) WSTs were completed before receiving the subsidy amount. The rest 84 (24%) were completed after receiving the subsidy from the department.

Out of a total of 347 spot checked WST, on over all basis, 322 (93%) have been completed as per approved standards and specifications.

4.6 SUBMISSION OF OF ENDLINE SURVEY REPORT (DRAFT)

Progress Monitoring:

During the Project period (5 years), a total of 47,278 watercourses were targeted to be improved. By the end of June 2024, 14,443 watercourses have been improved, showing only 31% achievement.

During the Project period (5 years), a total of 14,932 Water Storage Tanks were targeted to be

constructed. By the end of June 2024, WSTs were constructed, thus showing only 40% achievement.

During the Project period (5 years), a total number of 11,610 Precision Laser Land Leveling (PLL) Units were targeted to be delivered. By the end of June 2024, 6,219 PLL Units were delivered showing a progress of 54% achievement.

Monitoring Evaluation of Component C1 (Organization of Water Users' Associations)

On an overall basis, 85% of farmers were aware of about the existence / working of WUAs on their watercourses. About 87% of respondents informed that OFWM used to hold awareness meetings before the formation of the WUAs. About 71% members had been participating in the meeting of WUAs and 94% members reported that the WUAs were formed through the democratic process. Overall, 93% of respondent farmers were found to be the members of WUAs of which 46% were located at the head of WC reaches, 29% at middle reaches and 25% at tail reaches and 90% of members were found water users of lined watercourses. About 91% of farmers reported that WUAs were functioning properly.

About half (49%) of the respondent farmers informed that meetings by WUAs were held, 25% informed that no meeting were held and 26% were of the view that these meetings were held to some extent. Moreover, 35% of respondents informed that they always participated in the meetings, 63% participated occasionally and two percent never participated.

Out of the total, 7% of respondents informed that meetings were held every month, 4% told quarterly, 3% said once a year and the remaining 86% informed that these meetings used to be held as and when need arises. About 85% of respondents informed the WUAs were established through the democratic process.

About 95% of member farmers responded that they did not face any dispute. Only 5% faced disputes, out of which 60% of members got their disputes resolved always, 33% to some extent and 7% never got their disputes resolved.

Out of 5% of respondents who faced disputes, 26% related to Land Acquisition, 63% on distribution of Naccas, 8% regarding funding for account and 3% for Water Theft. About 53% of disputes were solved by WUAs, 42% by OFWM department and 5% by Irrigation Department.

Impact Evaluation of Component C2 (Improvement of Watercourses)

Land use intensity due to watercourse improvement on sample farms has increased on average by 5.5%, meaning thereby an increase of 5.5% in cultivated areas. Cropping intensity has increased by 11.6%. These increases in land use and cropping intensities have resulted in about 14.1% increase in cropped areas under various crops.

The Watercourse Improvement Impact on Crop Yields per acre varied from 1.7% to 84.5%, averaging at 12.3% on an overall basis.

The Final impact of Watercourses Improvement is reflected in total production of various crops. Production of various crops has increased at different rates varying from 10.8% in the case of peaches to 254.8% in the case of other vegetables. However, weighted average impact calculates at 28.1% (12.3% due to yield increase and 14.1% due to area increase and 1.7% due to interaction between the two).

On total completed watercourses up to June 2024, total increases in crop area have also been estimated. Consequent upon total 14,443 improved watercourses, the increase in the cropped area have been estimated to be around 343 thousand acres.

The impact of watercourse Improvement on agriculture employment has also been significantly witnessed. Labor man days at the farm level have increased ranged from 2.9 percent to more than 147% after WC Improvement averaging at 11.8% due to increase in crop area, crop yields and crop production.

Impact of WC Improvement on per acre net income varies from crop to crop. It varies from PKR 1,008 for cotton to PKR 37,905 for vegetable crops per acre averaging to the tune of PKR. 3, 719 for all crops.

Water Conveyance Efficiency on 20% lined additional improved watercourses was increased by 16%age point and on new 50% lined watercourses increase shown by 29%age point. On piped lined watercourses efficiency was increased by 50%. On overall basis, saving in water losses calculated to extent of 34% turned into 154 AF per watercourse per annum.

Spot Checking monitored in respect of Trees harvested on Watercourses shows that 5,388 trees were cut down during the process of their improvement. As per rule, at least three times (16,164) trees were required to be planted in place of 5,388 cut down trees, however, during the spot checks activity, it was observed that only 9,258 saplings (57% of the required ones) were planted

out of which, 2,844 plants were survived after one year of their plantation.

Spot Checking of Brick Lined Watercourses shows that the compliance of engineering parameters on Rectangular / Brick Lined Watercourses, on the whole, it was satisfactory. However, lining length as per design was found on 81% of watercourses. Full length improved water courses were extremely low i.e., kacha portion of only 23% were fully improved. Katcha portions of the remaining 77% watercourses remained unimproved.

Spot Checking of PCP Lining Watercourses: On Parabolic (PCPL) Watercourses, compliance of most of the parameters was found satisfactory. However, lining length as per design was found on 77% watercourses and full-length improved water courses were extremely low i.e., only 19%.

Spot Checking of Pipelined Watercourses: The quality of pipe was found good in 58% cases, satisfactory in 39% cases and poor in 3% cases, only. Pipeline length as per design in 95% cases, bends and flanges were as per design in 72% cases, tees were as per design in 67% cases and sockets were in 59% as per design.

The cultivated area increased by 96,412 acres, cropped area increased by 343,030 acres, gross income increased by 66,549 million PKR and net income increased by 30,687million PKR. Zone-wise detail may be seen in **Table 1**.

Table 1: Increase in Area and Incomes of the farms under Completed Watercourses Scheme

Zone / Unit	Increase in			
	Cultivated Area	Cropped Area	Gross Income	Net Income
	Acres		Million Rupees	
Punjab	35,260	145,114	40,783	17,962
KP	5,494	43,146	6,202	3,004
Balochistan	54,546	147,896	17,781	8,927
GB	846	5,537	1,470	651
AJK	253	1,294	307	138
ICT	13	43	6	3
Overall	96,412	343,030	66,549	30,687

Impact Evaluation of Component C3 (Construction of WSTs)

Land use intensity due to WSTs Construction on sample farms has increased on an average by 6.3%, meaning thereby an increase of 6.3% in cultivated area. Cropping intensity has increased by 17.3%. These increases in land use and cropping intensities have resulted in about 24% increase in cropped areas under various crops.

The WSTs construction Impact on Crop Yields per acre varied from 4.6% in the case of Kharif fodder to 15.8% in case of onion, averaging 11.6% on an overall basis.

Final impact of Watercourses Improvement is reflected in total production of various crops. Production of various crops has increased at different rates varying from 19% in the case of maize to 71% in the case of sugarcane. However, weighted average impact calculates at 38.4% (11.6% due to yield increase and 24% due to area increase and 2.8 percent due to interaction between the two).

As a result of total 5,915 completed WSTs up to June 2024, total increases in area have also been estimated to be 14,084 acres.

The impact of WSTs on agriculture employment has also been witnessed significantly. Labor man days at the farm have increased ranging from 9% to 59% after WSTs construction averaging at 24.7% due to increase in crop area, crop yields and crop production.

The impact of WSTs on per acre net income varies from crop to crop. It varies from 1,008 PKR for cotton to 37,905 PKR for other vegetable crops, per acre averaging at 12,744 PKR per acre for all crops.

As before the construction of the tank, there was no such saving of water losses. The total water storage capacity from above mentioned sources of tank along with the reported filling up frequency leads to calculating the water saving impact. On overall basis, saving in water losses calculated to the tune of 7.18 AF per Storage Tank per annum.

On 347 spots checked WSTs, 574 trees were reported to be cut down, and 1,866 (more than thrice as per requirement) Saplings were planted out of which 394 survived after appraisal of one year. WST protection arrangements were about 79% satisfactory and 96% WSTs were properly being maintained.

Out of 347 spots checked the WSTs, satisfactory Excavation Certificates were issued by the Consultants to 281 (81%) of the WSTs.

About 263 (76%) WSTs were completed before receiving the subsidy amount. The rest of 84 (24%) WSTs were completed after receiving the subsidy from the department.

Out of a total of 347 spots checked the WST, on over all basis, 322 (93%) WSTs have been completed as per approved standards and specifications.

Due to 5,915 WSTs' construction, cultivated area increased by 4,184 acres, cropped area increased by 14,084 acres, gross income increased by 3,384 million PKR and net income increased by 1,842 million PKR.

Zone wise detail may be seen in **Table 2**.

Table 2: Increase in Area, and Incomes of the farms under completed WSTs Scheme

Zone / Unit	Increase in			
	Cultivated Area	Cropped Area	Gross Income	Net Income
	Acres		Million Rupees	
Punjab	477	3,074	860	466
KP	758	3,078	743	404
Balochistan	1,840	4,589	1,058	577
GB	624	1,859	391	214
AJK	485	1,484	332	181
Overall	4,184	14,084	3,384	1,842

Impact Evaluation of Component C4 (Provision of PLL)

Educational Profile of Sample Beneficiaries: Most of the beneficiaries (87.0%) found literate. About 32.0% of beneficiaries are primary / middle level, 26.0% matric, 13.0% Intermediate, 12.6% Graduates and 3.5% postgraduate.

Suppliers of Precision (Laser) Land levelers: About 57% i.e., 185 PLL sample units were supplied by 4 Supply and Service Companies (SSCs), namely Easy Farming (61), Cross Field Agro (57), Ruba Digital Laser (46) and 21 by Modern Farming PLL Services. The other 133 sample units were supplied by other 14 different SSCs. Out of these 318 PLL units, 306 were delivered by these companies in the Punjab, 5 in KP and 7 in Balochistan.

About 58% of PLL drivers were fully trained for running PLLs in the field and got formal training for this purpose. Around 39% were self-trained and the rest of 3% were found untrained during the monitoring survey.

About 66% of respondents ranked these PLL units as good, 29% as satisfactory and 3% as not satisfactory. About 1 to 2 percent responded that they do not know. It means that 95% of beneficiaries regarded the quality / durability of the delivered PLL units satisfactory at least.

Regarding after-sales service, the sample beneficiaries responded that 48% regarded it as good, 10% as poor, 5% as very poor and 37% do not know.

About 41% of the beneficiaries responded that the complaints attended by SSCs were prompt and 15% informed that the complaints were not being attended promptly.

As for the prices of PLL concerned, 8% of respondent beneficiaries informed that the SSCs charged high prices, 44% informed that the prices were normal, while the rest of 48% responded that they did not know.

The respondents were also asked about the availability of spare parts by the SSCs. Out of a total

of 318 respondents, 26% responded that spare parts were available with SSCs whenever required, 6% informed that it took time long time to attend, whereas the rest of 68% informed that they did not need these spare parts yet.

As for the prices of PLL spare parts charged by the SSCs, 9% of respondent beneficiaries informed that the SSCs charged high prices, 21% informed that the prices were normal, while the rest of 70% responded that they did not need these spare parts yet.

The respondent beneficiaries were also asked about the availability of spare parts in the open market. About 28% of respondents informed that these spare parts are only available with the SSCs, 30% informed that the spare parts were also available in the open market, while the rest 42% informed that they did not know.

While spot checking,, all 318 (100%) respondents were using PLL for agricultural purposes. Not even a single respondent was found using PLL for non-agricultural purposes.

The PLLs were also spot checked with respect to their working conditions. Out of the total, 66% were found in good condition and well maintained. The condition of 30% was satisfactory and the remaining 4% were found in poor / Un-satisfactory condition.

Record Keeping of Laser Land Leveling Services to Other Farmer: About 95% of PLL owners provide laser leveling servicing to the other fellow farmers. Out of these service providers, only 12% keep a complete or partial record of their rental hiring services. Out of the 12 percent, 63% kept record on logbooks, 30% on loose papers.

Land Levelled during the last Rabi and Kharif cropping Seasons: Total laser land levelled by the 318 respondent PLL owners during last Rabi and Kharif cropping seasons was 111,422 acres or 350 acres per PLL. Out of these total 111,422 acres, 9,645 acres (30 acres per equipment) was owned land, and 101,777 acres (320 acres per equipment) were laser leveled on rental hiring services basis for the other fellow farmers.

PLL Beneficiaries: Total annual PLL beneficiaries calculate to 16,742 farmers including the owners themselves or 30 farmers per equipment.

Impact of PLL on Crop yields: Impact of PLL on crop yield was also assessed through the farmers' perception. The growers were of the view that laser leveling increases yields of various crops ranging from 20% to 35% with averaging at 24% on the whole. Economics and economic benefits of PLL uses were also estimated. Total number of delivered PLL up to end of June 2024 was 6,219. At the rate of 394

acres per PLL, total area levelled by all the delivered PLL calculates as 2,450 thousand acres. Net benefit per PLL comes to 677 thousand PKR per annum and for total 6,219 delivered PLL these calculate to 4,213 million PKR.

Water Saving Impact of PLL Units: Information was also asked from the growers regarding the saving of water due to Precision Land Leveling. On average, 25% saving in water use has been reported.

Economic Analysis: The Benefit Cost Ratio at 12% discounted factor in the final evaluation calculated as 2.8 at 50% Internal Rate of Return.

4.7 ACTIVITIES OF ME&IE CONSULTANTS OFFICES – DURING REPORTING QUARTER OCT – DEC 2024

An overview of the significant tasks accomplished, observed and assessed by the ME&IE consultants by all ME&IE Consultants offices under the supervision of National Office, Islamabad during the reporting quarter (Oct-Dec 2024) of the completing NPIWC-II project. The heading wise details are as follows:

4.7.1 Project Closure Activities (Administrative)

Like the previous quarter's report, this report reiterates once again that the following activities has been done after June 2024.

Shifting Punjab Zonal Office To Punjab Guest house

In the light of FPMU letter No. F.1-3/2020-FPMU/ME&IE dated 27th June 2024; the ME&IE

Consultants have shifted the Punjab Zonal Office to the Punjab Guest-house building on 01 July 2024. This new Punjab zonal office building is already approved by FPMU. After the Punjab Zonal Office staff was downsized, the remaining staff is now sitting in this building, which is well-suited to the needs of current limited staff. It is pertinent to mention that this decision not only eliminates the rent for one building but also comes with a lower rent compared to the previous Punjab Zonal Office's building. This move will help ease the financial constraints on the consultant caused by payment imbalances and will save public money as well.

The Address of new Punjab Zonal Office is as follows:

"807 D-Block, Faisal Town Lahore".

Downsizing of the ME&IE Consultants' Project Staff

In the light of FPMU letter No. F.1-3/2020-FPMU/ME&IE dated 27th June 2024; the ME&IE Consultants have laid-off most of its staff. However, to finalize the project's final reports, only 27 number of Key / Technical / Non-technical / Direct Cost staff was retained. The formal approval of these 27 number staff have sought from FPMU, vide letter No. F.1-8/2020-FPMU/ME&IE-CVs dated 5 August 2024).

4.7.2 Project Components Implementation Status

The following Table shows the Project Components Implementation Status from inception till June 2024.

Project Components Implementation Status till June 2024

Interventions	Punjab			KP			Balochistan			GB			AJ&K			ICT			National (Overall)		
	Target (no.)	Achievements (no.)	Progress (%age)	Target (no.)	Achievements (no.)	Progress (%age)	Target (no.)	Achievements (no.)	Progress (%age)	Target (no.)	Achievements (no.)	Progress (%age)	Target (no.)	Achievements (no.)	Progress (%age)	Target (no.)	Achievements (no.)	Progress (%age)	Target (no.)	Achievements (no.)	Progress (%age)
WCs	10,000	4,487	44.87	13,000	3,336	25.66	20,389	5202	25.51	2,500	809	32.36	1,165	608	52.19	224	41	18.30	47,278	14,483	30.63
WSTs	3,000	1,021	34.03	5,000	1,236	24.72	5,507	2499	45.38	825	328	39.76	600	479	79.83	0	0	0.00	14,932	5,563	37.26
LLs	9,500	6,112	64.34	600	50	8.33	1,500	34	2.27	5	0	0.00	5	0	0.00	0	0	0.00	11,610	6,196	53.37

4.7.3 Overall Field Progress:

ME & IE consultants have successfully covered, overall, more than 5% Sample Size of the targeted population in almost all zones that constituted at least 5% sample size in each district of all project zones. This accomplishment underscores the diligent

efforts of all teams' in conducting thorough baseline-assessments, impact evaluations, and regular/ spot checking monitoring activities. Consequent upon successfully covering the targeted percentage entrusted by the NPC office in respect of the Project's targeted population in all project zones, the project has laid a strong foundation for

broader data collection and analysis in order to arrest the likely representative sample size of the targeted population.

Field visits by the ICT-Unit Field Team

From inception to date, the ME&IE Consultants ICT – Unit field team conducted baseline vis-a'-vis impact surveys of more than **46** watercourses in AJK & ICT as well as baseline vis-a'-vis impact surveys of more than **25** water storage tanks in AJK and **19** in four Districts of Potohar region of Punjab Zone.

AJK UNIT			
District	WC	WST	PLL
Bagh	2	3	0
Bhimber	9	2	0
Haveli	1	2	0
Jhelum	3	4	0
Kotli	2	2	0
Mirpur	8	1	0
Muzaffarabad	7	7	0
Neelum	4	0	0
Poonch	2	3	0
Sudhnoti	1	1	0
AJK Total	39	25	0
ICT UNIT			
District	WC	WST	PLL
ICT	7	0	0
ICT Total	7	0	0
POTOHAR REGION OF PUNJAB			
District	WC	WST	PLL
Attock	0	6	0
Chakwal	0	7	0
Jhelum	0	2	0
Rawalpindi	0	4	0
Potohar Region Total	0	19	0

Field visits by the Punjab-Zone Field Teams

From inception to the reporting month, the ME&IE Consultants' Punjab field team conducted baseline and impact surveys on a total of **250** watercourses. In addition, out of **80** WSTs of Punjab zone for Baseline and Impact surveys **61** were visited by Punjab field teams and **19** were visited by the ICT field team. Punjab field team conducted impact assessments of **306** PLL interventions.

PUNJAB ZONE			
District	WC	WST	PLL
Attock	0	6	0
Bahawalnagar	22	3	15
Bahawalpur	9	1	12
Bhakkar	11	5	10

PUNJAB ZONE			
District	WC	WST	PLL
Chakwal	0	7	0
Chiniot	3	1	15
Dera Ghazi Khan	9	3	8
Faisalabad	9	2	14
Gujranwala	7	1	12
Gujrat	6	2	6
Hafizabad	10	3	10
Jhang	5	2	15
Jhelum	0	2	0
Kasur	6	2	12
Khanewal	7	2	9
Khushab	8	2	8
Lahore	2	1	6
Layyah	8	1	16
Lodhran	15	1	8
Mandi Bahauddin	4	2	8
Mianwali	4	1	7
Multan	9	5	8
Muzaffargarh	6	2	12
Nankana Sahib	3	2	7
Narowal	1	0	7
Okara	15	1	7
Pakpattan	6	1	11
Rahim Yar Khan	18	4	14
Rajanpur	6	1	6
Rawalpindi	0	4	0
Sahiwal	8	1	8
Sargodha	8	2	6
Sheikhupura	8	2	7
Sialkot	5	1	5
Toba Tek Singh	6	3	9
Vehari	6	1	8
Punjab Total	250	80	306

Field visits by the KP-Zone Field Teams

From inception to date the KP field team of ME&IE Consultants conducted baseline vis-a'-vis impact surveys of **205** watercourses in KP and **40** in GB. Moreover, the consultants had completed baseline vis-a-vis impact surveys of **79** water storage tanks in KP and **15** in GB. Impact assessment field visits of **05** PLL interventions were also carried out in KP.

KP ZONE			
District	WC	WST	PLL
Abbottabad	2	1	0
Bannu	5	1	0
Battagram	3	1	0
Buner	6	2	0
Charsadda	7	1	0
Chitral	6	1	0

KP ZONE			
District	WC	WST	PLL
Dera Ismail Khan	38	10	5
Hangu	3	0	0
Haripur	9	5	0
Karak	4	4	0
Khyber	2	2	0
Kohat	5	1	0
Lakki Marwat	6	2	0
Lower Dir	7	1	0
Lower Kohistan	1	0	0
Lower Mohmand	2	3	0
Malakand	6	2	0
Mansehra	15	4	0
Mardan	7	3	0
Nowshera	20	8	0
Peshawar	13	7	0
Shangla	3	2	0
Swabi	6	1	0
Swat	14	8	0
Tank	4	2	0
Torghar	2	0	0
Upper Dir	6	3	0
Upper Kohistan	1	1	0
Upper Mohmand	2	3	0
KP Total	205	79	5
GB UNIT			
District	WC	WST	PLL
Astore	2	1	0
Diamer	6	2	0
Ghanche	6	0	0
Ghizer	4	2	0
Gilgit	5	3	0
Hunza	2	1	0
Kharmang	2	1	0
Nagar	2	1	0
Shigar	4	2	0
Skardu	7	2	0
GB Total	40	15	0

Field visits by the Balochistan-Zone Field Teams

From inception to the reporting month, the ME&IE Consultants of Balochistan field team conducted baseline vis-à-vis impact surveys of **203** watercourses. Moreover, completed baseline vis-à-vis impact surveys of **148** water storage tanks and carried out impact assessment surveys of **07** PLL interventions as well.

BALOCHISTAN ZONE				
District	WC	WST	PLL	Overall
Awaran	8	4	0	12
Barkhan	3	3	0	6
Chaghi	4	3	0	7

BALOCHISTAN ZONE				
Dera Bugti	5	2	0	7
Duki	2	2	0	4
Gwadar	2	1	0	3
Harnai	2	1	0	3
Jafarabad	0	0	4	4
Jaffarabad	7	1	0	8
Jhal Magsi	2	4	0	6
Kachi	5	10	0	15
Kalat	13	9	0	22
Kech	6	5	0	11
Kharan	4	2	0	6
Khuzdar	8	7	0	15
Killa Abdullah	5	3	0	8
Killa Saifullah	12	6	0	18
Kohlu	3	2	0	5
Lasbela	10	8	0	18
Loralai	17	7	0	24
Mastung	9	8	0	17
Musakhail	11	1	0	12
Musakhel	0	1	0	1
Nasirabad	9	6	0	15
Nushki	6	3	0	9
Panjgur	8	8	0	16
Pishin	10	9	0	19
Quetta	4	15	0	19
Sherani	4	2	0	6
Sibi	3	3	0	6
Sohbatpur	10	1	3	14
Surab	2	2	0	4
Washuk	1	1	0	2
Zhob	4	4	0	8
Ziarat	4	4	0	8
Balochistan Total	203	148	7	358

4.7.4 Post Field Activities

1. Detailed Data Review and Error Checking

Deep Data Consistency Check: Rechecked data consistency across the baseline and impact surveys, ensuring all fields (e.g., water savings, and income increases) align logically across different Units/sections and zones.

Anomaly Detection: Identified and investigated data outliers or anomalies, particularly in areas like crop yields or income changes. It was looked at for any extreme/ odd values that may have led to distort the overall trends or calculations.

2. Statistical Validation

Cross-Verification with Statistical Models: Used basic statistical tests to validate trends between pre- and post-intervention data, ensuring statistical inferential significances in yield and income data changes.

Re-Evaluation of Calculated Averages and Totals:

Recalculated averages and totals for key variables (e.g., water savings, income growth) to ensure accuracy. The estimated values compared with the initial values to confirm stability.

3. Focused Comparison and Trend Analysis

Zone-by-Zone Review: Reassessed data of each zone and unit (Punjab, KP, Balochistan, ICT, AJK, GB) independently, ensured that data trends and findings align with the specific regional context.

Detailed Pre-and Post-Intervention Comparison: closely watched the changes in crop yields, incomes, and cultivated area metrics for each intervention, verifying accuracy and clarity in reporting.

4. Enhanced Data Cleaning

Further Error Correction: Performed additional data cleaning of fields that contained minor inconsistencies or errors.

Data Deduplication: Re-examined/ reconciled datasets for duplicate entries, particularly in farmer or location data, to ensure no redundancies effect on the final analysis.

5. Final Report Structure and Content Review

Review of Report Tables and Visuals: Carefully assessed each table, chart, and graph for accuracy, readability, and relevance, and verified that figures and labels accurately represent the data.

Improved Visualization and Narratives: Add clear, descriptive captions to all tables and visuals to help the client understand key findings at a glance. Summarize the findings succinctly in each section.

Through this report, we once again request your good office's feedback on our submitted Baseline Survey Report - Consolidated (Draft) and Endline Survey Report (Draft) which we have still not received from your office after lapse of almost three month.

4.7.5 Coordination / Meetings with Stakeholders / Beneficiaries

The coordination meetings with stakeholders / beneficiaries of the project were necessary to know the operational activities of OFWM and the collection of required information/data. It was a regular practice of ME&IE consultants used to be followed every month.

During the reporting month, the ME&IE Consultants Zonal teams remained in touch with their respective OFWM Departments.

4.8 SOCIAL & GENDER IMPACT COMPONENT

Gaps Identified in Women's Participation in National Programme for Improvement of Water Courses (NPIWC-II):

Institutional Gaps:

1. Limited representation of women in Water Users Associations (WUAs).
2. Inadequate women's participation in decision-making processes.
3. Lack of gender-sensitive policies and guidelines.

Social Gaps:

1. Cultural and social barriers restricting women's mobility and participation, mainly due to manifestation of male dominant society prevalent.
2. Limited access to education and training for women.
3. Gender-based violence and harassment.

Economic Gaps:

1. Limited access to credit and financial services for women farmers.
2. Inequitable distribution of benefits and resources.
3. Lack of economic empowerment opportunities.

Technical Gaps:

1. Limited access to irrigation technology and equipment for women farmers.
2. Inadequate training on water management and agriculture.
3. Lack of extension/ advisory services targeting women farmers/ folks.

Capacity Building Gaps:

1. Limited capacity building programs for women folks.
2. Inadequate training on leadership and decision-making.
3. Lack of mentorship opportunities.

Monitoring and Evaluation Gaps:

1. Limited sex-disaggregated data collection.
2. Inadequate monitoring of women's participation.
3. Lack of evaluation of gender-related outcomes.

Recommended Interventions:

1. Conduct gender sensitization training for WUA members.
2. Establish women's sub-committees within WUAs.
3. Provide training on agriculture, water management, and leadership.
4. Develop gender-sensitive policies and guidelines.
5. Increase access to credit and financial services.
6. Promote women's economic empowerment.
7. Enhance monitoring and evaluation of women's participation.

Action Plan:

Short-Term (0-12 months)

1. Conduct gender analysis and baseline survey.
2. Develop gender-sensitive policies and guidelines.
3. Establish women's sub-committees within WUAs.

Medium-Term (13-24 months)

1. Provide training on agriculture, water management, and leadership.
2. Increase access to credit and financial services.
3. Promote women's economic empowerment.

Long-Term (25-36 months)

1. Scale up successful initiatives.
2. Mainstream gender-sensitive approaches.
3. Evaluate program impact on women's empowerment.

Budget Allocation:

1. Capacity building and training (35%).
2. Women's empowerment initiatives (25%).
3. Infrastructure development (20%).
4. Monitoring and evaluation (20%).

Partnerships:

1. Government departments (water resources, agriculture, women development).
2. NGOs and CSOs.
3. Private sector (irrigation equipment, agricultural inputs).
4. International organizations (UN Women, FAO).

The inclusion of women in Water User Associations (WUAs) and water courses improvement in phase III of NPIWC-II is crucial for sustainable water resource management. Here is some potential way forward:

1. Awareness Raising and Capacity Building:

- Workshops and Trainings: Conduct workshops and training sessions specifically targeting women to educate them about the importance

of WUAs, their roles and responsibilities, and the benefits of participating.

- Community Outreach: Organize community outreach programs to raise awareness about women's rights to access and manage water resources.
- Mentorship Programs: Establish mentorship programs where experienced women can guide and support newer members in understanding WUA operations and decision-making processes.

2. Gender-Sensitive Policies and Guidelines:

- Inclusive Policies: Develop and implement policies and guidelines that promote gender equality and ensure women's active participation in WUAs.
- Quota Systems: Consider implementing quota systems to guarantee a certain percentage of women representation in WUA leadership positions.
- Gender-Specific Training: Provide gender-specific training to WUA members to address gender-based challenges and promote effective communication and collaboration.

3. Community-Based Approaches:

- Participatory Budgeting: Involve women in participatory budgeting processes to ensure that their needs and priorities are reflected in WUA activities and resource allocation.
- Community-Led Initiatives: Support community-led initiatives that promote women's empowerment and leadership in water management.
- Women's Groups: Encourage the formation of women's groups within WUAs to provide a platform for women to discuss their concerns, share experiences, and advocate for their rights.

4. Addressing Gender-Specific Challenges:

- Childcare Facilities: Provide childcare facilities or arrangements to enable women to participate in WUA meetings and activities without worrying about their children care.
- Financial Support: Offer financial assistance to women to cover transportation costs and other expenses related to WUA participation.
- Safety Measures: Ensure that WUA meetings and activities take place in safe and accessible environments.

5. Monitoring and Evaluation:

- Regular Assessments: Conduct regular assessments to monitor the progress of

women's participation in WUAs and the effectiveness of implemented measures.

- **Feedback Mechanisms:** Establish feedback mechanisms to gather input from women on their experiences and identify gaps for improvement.
- **Learning and Adaptation:** Continuously learn from feedback, experiences and adapt strategies to ensure that women's participation in WUAs is meaningful and sustainable.

By implementing these strategies, NPIWC-II can effectively promote women's participation in WUAs and contribute to the sustainable management of water resources in Pakistan.

Suggestions and steps for improvement of National Water Courses Improvement Program (NWCIP) Phase-II:

1. **Conduct a thorough review:** Conduct a thorough review of the program's progress, achievements, and challenges to identify areas for improvement.
2. **Stakeholder engagement:** Engage with stakeholders, including farmers, water users, and local communities, to gather feedback and suggestions for improvement.
3. **Capacity building:** Provide training and capacity-building programs for program staff, farmers, and water users to enhance their skills and knowledge.
4. **Institutional strengthening:** Strengthen institutions involved in the program, including water user associations and local government departments.
5. **Improved water management:** Implement improved water management practices, including water conservation and efficient use of water.
6. **Climate-resilient infrastructure:** Invest in climate-resilient infrastructure, including flood-resistant canals and water storage facilities.
7. **Monitoring and evaluation:** Establish a robust monitoring and evaluation system to track progress and identify areas for improvement.
8. **Community-based approach:** Adopt a community-based approach, involving local communities in the planning, design, and implementation of the program.
9. **Private sector participation:** Encourage private sector participation in the program, including

public-private partnerships and private sector financing.

10. **Policy and regulatory framework:** Strengthen the policy and regulatory framework governing water resources management and irrigation development.

Improving Women's Participation at the Policy Level

1. **Conduct a gender analysis:** Conduct a gender analysis of the program to identify the different needs, roles, and responsibilities of men and women in water management.
2. **Establish a gender mainstreaming strategy:** Establish a gender mainstreaming strategy to ensure that women's needs and perspectives are integrated into the program.
3. **Increase women's representation:** Increase women's representation in decision-making bodies, including water user associations and local government departments.
4. **Provide training and capacity building:** Provide training and capacity-building programs for women to enhance their skills and knowledge in water management.
5. **Support women-led initiatives:** Support women-led initiatives and projects that promote women's empowerment and participation in water management.
6. **Develop a gender-sensitive monitoring and evaluation framework:** Develop a gender-sensitive monitoring and evaluation framework to track progress and identify areas for improvement.
7. **Strengthen policy and legislative frameworks:** Strengthen policy and legislative frameworks governing water resources management and irrigation development to promote women's rights and participation.
8. **Promote women's access to credit and markets:** Promote women's access to credit and markets to support their economic empowerment and participation in water management.
9. **Support women's organizations and networks:** Support women's organizations and networks to promote women's empowerment and participation in water management.
10. **Develop a communication strategy:** Develop a communication strategy to raise awareness about the importance of women's participation

in water management and the benefits of the program.

Millennium Development Goals (MDGs)

The National Program for Improvement of Watercourses in Pakistan (NPIWC-II) has played a significant role in helping Pakistan achieve the Millennium Development Goals (MDGs), particularly in the areas of poverty reduction, food security, and sustainable agriculture. Here are some key ways NPIWC-II contributed to achieving the MDGs:

Poverty Reduction (MDG 1)

1. Increased agricultural productivity: NPIWC-II improved water management and agricultural practices, leading to increased crop yields and higher incomes for farmers.
2. Employment opportunities: The program created employment opportunities for rural communities, both during the construction phase and in the long term, through sustainable agriculture and water management practices.

Food Security (MDG 1)

1. Improved food availability: NPIWC-II increased agricultural productivity, leading to improved food availability and reduced food insecurity.
2. Enhanced food access: The program improved rural infrastructure, enhancing market access and reducing transportation costs, making food more accessible to rural communities.

Sustainable Agriculture (MDG 7)

1. Water conservation: NPIWC-II promoted water-saving technologies and practices, reducing water losses and improving water use efficiency.
2. Soil conservation: The program implemented conservation tillage, crop rotation, and integrated nutrient management practices, reducing soil erosion and improving soil fertility.

Other MDGs

1. MDG 3: Promote Gender Equality and Empower Women: NPIWC-II promoted women's participation in decision-making processes and provided training on agricultural practices and water management.
2. MDG 8: Develop a Global Partnership for Development: The program collaborated with international organizations, such as the World Bank, and national stakeholders to leverage resources and expertise.

Statistics

1. Increased agricultural productivity: NPIWC-II resulted in a 25% increase in agricultural productivity in the project areas.
2. Reduced poverty: The program contributed to a 15% reduction in poverty in the project areas.
3. Improved food security: NPIWC-II improved food security for over 1 million rural households.

By achieving these outcomes, NPIWC-II has contributed significantly to Pakistan's progress towards achieving the MDGs, particularly in the areas of poverty reduction, food security, and sustainable agriculture.

4.9 ICT TEAM ASSIGNMENTS

4.9.1 Implementation Of MIS Dashboard

The Dashboard has been implemented in Punjab, KP, Balochistan, GB, AJK and ICT zones/ units:

The progress of Interventions is live on the Dashboard application.

Punjab – WC Data – Summary					
Division	19-20	20-21	21-22	22-23	Overall
Bahawalpur	167	197	326	15	705
D.G Khan	154	78	263	1	496
Faisalabad	88	61	203	35	387
Gujranwala	63	28	109	1	201
Gujrat	44	30	125	0	199
Lahore	72	42	134	7	255
Multan	168	81	311	2	562
Sahiwal	94	86	222	0	402
Sargodha	100	95	357	3	555
Overall	950	698	2050	64	3762

A total of **3762** Watercourses data have been received from Punjab zone and available live on GIS Dashboard. Detailed Summary attached as **Annex-F**.

Punjab – WSP Data Summary				
Division	2019-20	2020-21	2021-22	Overall
Bahawalpur	23	46	91	160
D.G Khan	27	30	25	82
Faisalabad	24	48	57	129
Gujranwala	0	4	2	6
Gujrat	2	10	29	41
Lahore	0	9	5	14
Multan	16	25	26	67
Rawalpindi	0	174	194	368
Sahiwal	9	15	15	39
Sargodha	6	32	47	85
Bahawalpur	23	46	91	160
Overall	130	439	582	1151

Total **1151** Water Storage Ponds data have been received from Punjab zone and available live on GIS Dashboard. (Detailed Summary attached as **Annex-G**.

Punjab – PLL Data Summary						
Division	19-20	20-21	21-22	22-23	22-23	Over all
Bahawalpur	81	289	344	88	8	810
D.G Khan	50	225	272	93	14	654
Faisalabad	93	315	380	109	24	921
Gujranwala	49	213	278	30	6	576
Gujrat	52	159	222	43	5	481
Lahore	64	231	321	87	3	706
Multan	102	228	266	78	11	685
Sahiwal	71	159	274	91	1	596
Sargodha	78	235	311	56	3	683
Overall	640	2054	2668	675	75	6112

So far, Total **6,112** PLL data have been received from Punjab zone and available live on GIS Dashboard. All PLL units have been delivered and currently there's no under progress PLL unit as per received data.

Detailed Summary attached as **Annex-H**.

KP – WC Data Summary						
Division	19-20	20-21	21-22	22-23	23-24	Overall
Bajaur	3	18	23	17	12	73
Bannu	73	40	94	27	0	234
D.I. Khan	446	10	80	38	10	584
Hazara	88	62	141	76	10	377
Khyber	6	13	0	1	20	40
Kohat	98	40	57	28	20	243
Kurram	3	5	5	0	0	13
Malakand	178	174	474	92	95	1013
Mardan	105	64	88	26	38	321
Mohmand	4	40	16	30	0	90
N Waziristan	0	0	5	1	0	6
Orakzai	0	1	0	0	0	1
Peshawar	139	87	73	53	16	368
S Waziristan	5	10	14	7	0	36
Overall	1148	564	1070	396	221	3399

As of now, **3,399** watercourse datasets from the KP zone have been received, all of which are live on the GIS Dashboard. Of these, **3,330** watercourses have been lined, with work in progress on the remaining **54** at various stages, including 1st Milestone, 2nd Milestone, and after Work Order Issuance. Additionally, **15** watercourses are awaiting approval for Technical Sanction. These figures have been revised following data verification and rectification. Detailed Summary attached as **Annex-I**.

KP – WST Data Summary						
Division	2019-20	2020-21	2021-22	2022-23	2023-24	Over all
Bajaur	1	9	6	1	0	17
Bannu	12	10	23	2	0	47
D.I. Khan	80	6	30	4	5	125
Hazara	29	44	75	20	2	170
Khyber	1	9	0	0	7	17
Kohat	27	17	32	14	0	90
Kurram	1	1	0	0	0	2
Malakand	74	95	187	22	18	396
Mardan	16	9	26	4	19	74
Mohmand	1	42	70	0	0	113
N Waziristan	0	8	7	0	0	15
Orakzai	0	2	0	0	0	2
Peshawar	36	26	62	19	16	159
S Waziristan	7	8	15	2	0	32
Overall	285	286	533	88	67	1259

A total of **1,259** Water Storage Tank submissions have been received. Of these, **1,253** have been completed, while work is still in progress on **4** tanks. Additionally, **5** Water Storage Tanks are pending at the Technical Sanction (TS) stage. These figures have been revised following data verification and rectification. Detailed Summary attached as **Annex-J**.

KP – PLL Data Summary					
Division	2019-20	2020-21	2021-22	2022-23	Overall
D.I Khan	0	0	50	0	50
Overall	0	0	50	0	50

As of now, **50** PLLs have been delivered, with partial data received from the KP zone, all of which is available live on the GIS Dashboard. Detailed Summary attached as **Annex-K**.

Balochistan – WC Data Summary					
Division	2019-20	2020-21	2021-22	2022-23	Overall
Kalat	597	143	287	0	1027
Loralai	344	148	137	37	666
Makran	204	56	49	0	309
Nasirabad	216	111	191	0	518
Quetta	244	50	87	0	381
Rakhshan	126	58	82	0	266
Sibi	184	59	88	0	331
Zhob	232	69	81	3	385
Overall	2147	694	1002	40	3883

Total **3,883** Watercourses data has been received from Balochistan zone of which **3,236** Watercourses has been lined, **253** Watercourses are pending at TS Stage and remaining 394 watercourses are under progress. Detailed Summary attached as **Annex-L**.

Note: The Watercourses data from Balochistan Zone was last updated on October 17, 2023. However, since then, there has been no further data input received from Balochistan Zone enumerators via the Android Application. There is still a significant amount of pending data on their end. That needs to be submitted promptly to address the backlog on the PMIS Dashboard.

Balochistan – WST Data Summary					
Division	2019-20	2020-21	2021-22	2022-23	Overall
Kalat	95	154	442	0	691
Loralai	54	57	111	11	233
Makran	50	57	168	0	275
Nasirabad	29	48	83	0	160
Quetta	53	87	111	0	251
Rakhshan	26	68	58	7	159
Sibi	35	34	61	9	139
Zhob	49	61	117	0	227
Overall	391	566	1151	27	2135

A total of **2135** Water Storage Tank data has been received from Balochistan zone of which **1636** Watercourses have been lined, **102** Water Storage Tank at TS Stage and remaining **397** Water Storage Tanks are under progress. Detailed Summary attached as **Annex-M**.

Note: The Water Storage data from Balochistan Zone was last updated on October 24, 2023. However, since then, there has been no further data input received from Balochistan Zone's enumerators via the Android Application. There is still a significant amount of pending data on their end. That needs to be submitted promptly to address the backlog on the PMIS Dashboard.

Balochistan – PLL Data Summary					
Division	2019-20	2020-21	2021-22	2022-23	Overall
Kalat	0	4	0	0	4
Makran	0	11	0	0	11
Nasirabad	0	16	0	0	16
Quetta	0	1	0	0	1
Sibi	0	2	0	0	2
Overall	0	34	0	0	34

So far, Total **34** PLLs have been delivered and partial data received from KP zone and available live on GIS Dashboard. Detailed Summary attached as **Annex-N**.

GB – WC Data Summary				
Division	2019-20	2020-21	2021-22	Overall
Gilgit	180	236	29	445
Skardu	108	231	25	364
Overall	288	467	54	809

A total of **809** completed schemes data have been received and live on Dashboard. Detailed Summary attached as **Annex-O**

GB – WST Data Summary				
Division	2019-20	2020-21	2021-22	Overall
Gilgit	83	95	22	200
Skardu	35	82	11	128
Overall	118	177	33	328

A total of **328** completed Water Storage Tanks data have been received and live on Dashboard. Detailed Summary attached as **Annex-P**.

AJK – WC Data Summary						
Division	19-20	20-21	21-22	22-23	23-24	Overall
MZD	30	84	53	29	50	246
Poonch	33	32	30	8	48	151
Mirpur	37	96	72	21	73	299
Overall	100	212	155	58	171	696

A total of **696** Watercourse data sets have been received from the AJK zone. Among these, **571** Watercourses have been lined, while **16** are currently pending at the TS & Work Order Stage. Additionally, there are **109** watercourses currently under progress. These figures have been revised following data verification and rectification. Detailed Summary attached as **Annex-Q**.

Note: AJK-Last Water Course received date: 19 August 2024

AJK – WST Data Summary						
Division	19-20	20-21	21-22	22-23	23-24	Overall
MZD	35	56	61	9	29	190
Poonch	13	41	62	34	92	242
Mirpur	2	15	31	6	46	100
Overall	50	112	154	49	167	532

A total of **532** Water Storage Tank data has been received from AJK zone of which **406** Water Storage Tank have been lined, **17** Water Storage Tanks are

pending at TS Stage, **109** Water Storage Tanks are under progress. These figures have been revised following data verification and rectification. Detailed Summary attached as **Annex-R**.

Note: AJK-Last WST received date: 09 August 2024

ICT – WC Data Summary					
Division	19-20	20-21	21-22	22-23	Overall
ICT	0	20	14	7	41
Overall	0	20	14	7	41

A total of **41** completed Watercourses data have been received from ICT-Unit and available live on Dashboard. (Detailed Summary attached as **Annex-S**).

4.9.2 Data Rectification Meetings

The ICT team of the M&E consultants conducted a series of meetings across Punjab, KP, Balochistan, and AJK to address data discrepancies and shortages identified on the PMIS Dashboard. These meetings were held with the concerned Director Generals (DGs) and Deputy Directors (DDs) to ensure the timely communication and resolution of data issues. The discussions focused on rectifying the data in an organized and systematic manner, enabling the M&E teams to close data gaps on the Dashboard effectively and ensure accurate, up-to-date reporting for decision-making purposes.

4.9.3 M&E ICT Team Technical Support

The M&E ICT team maintains continuous communication with the Android Application amongst Enumerators across KP, AJK, and

Balochistan, providing them with ongoing technical support to address issues related to data validation, rectification, and completion. This proactive approach ensures that any challenges faced by field enumerators are promptly resolved, enabling the smooth and seamless transition of data from the field to the live PMIS dashboard. The ICT team actively monitors and supports the data flow to maintain real-time accuracy and integrity of the dashboard.

4.9.4 Server Maintenance Activities

The ICT team is responsible for overseeing server maintenance activities, focusing on enhancing security measures to mitigate potential threats, such as data breaches and unauthorized access. They are supposed to implement advanced security protocols and regularly update the system infrastructure to tackle emerging threats. The M&E ICT team is dedicated in providing technical support, whenever and wherever; it is needed, ensuring the system remains secure and operational while facilitating the efficient management of field data for the PMIS dashboard.

4.9.5 Refresher Training Workshops

The M&E ICT team has conducted more than 16 training/refresher training workshops since inception till date. The list is given below. The ICT team continues to provide support and technical assistance to all enumerators across all project territories and is prepared to offer additional refresher training sessions as needed or upon request.

List of Capacity Building Trainings of OFWM Staff

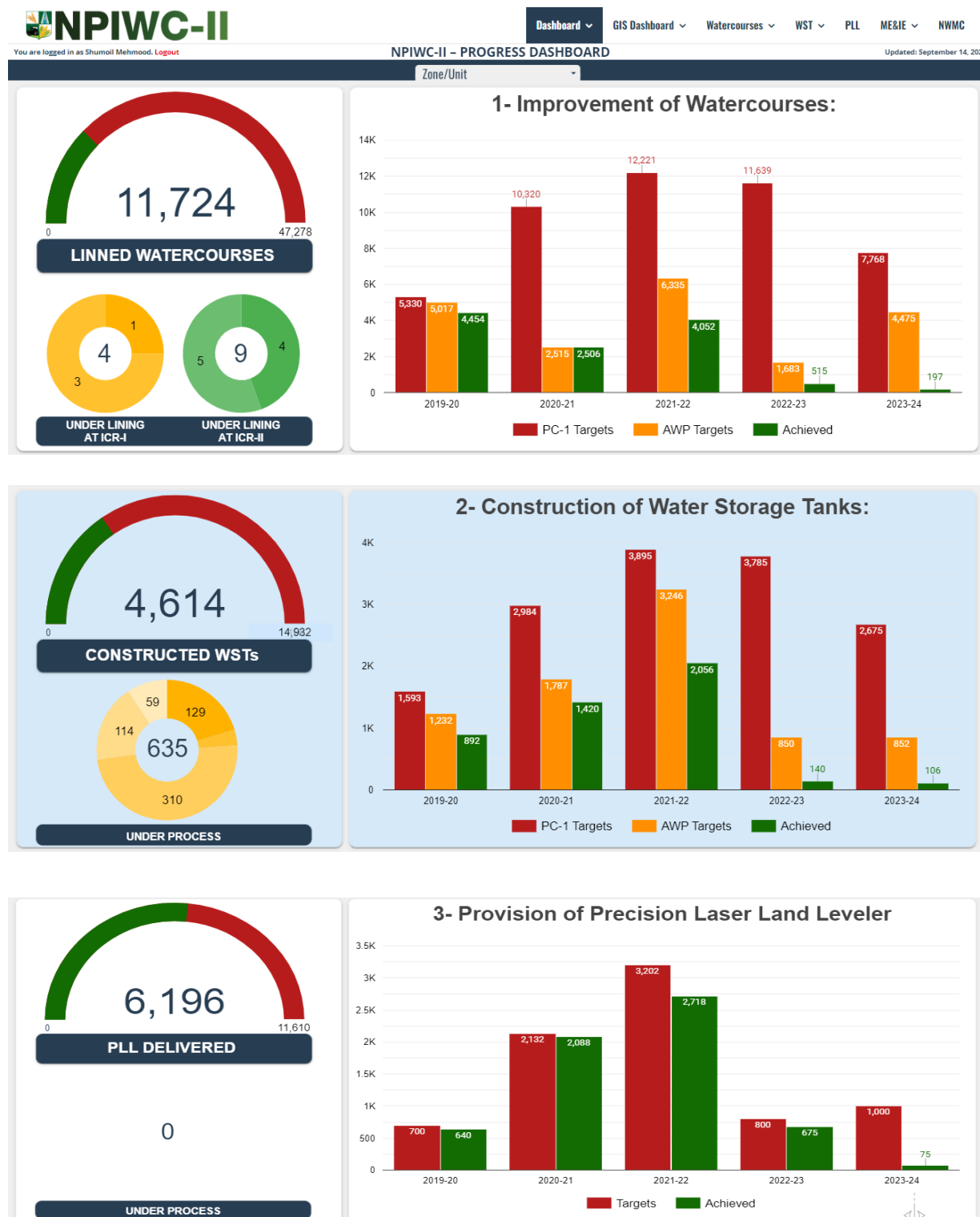
Sr. No.	Training Location	Days	Date
1	Muzaffarabad (AJK)	3	02-Nov to 04-Nov 2021
2	Islamabad	1	14-Jan-22
3	Muzaffarabad – Refresher Training	1	25 Feb 2022
4	Rawalakot – Refresher Training	1	28 Feb 2022
5	D.I. Khan	1	03 Mar 2022
6	Abbottabad	1	08 Mar 2022
7	Peshawar	1	11-Mar-22
8	Peshawar – Refresher Training	1	12 Aug 2022
9	Inhouse Training	4	21-Sep to 24-Sep 2022
10	Quetta	2	07-Dec to 08-Dec 2022
11	Abbottabad – Refresher Training	1	22 Jan 2023
12	Peshawar – Refresher Training	4	06 Feb to 09 Feb 2023
13	Peshawar – Refresher Training	2	29 April to 30 April 2024
14	D.I. Khan – Refresher Training	2	2 May to 3 May 2024
15	Sawat Training	2	7 May to 8 May 2024
16	Abbottabad – Refresher Training	2	9 May to 10 May 2024

4.9.6 On-Going Data Validation & Cleaning

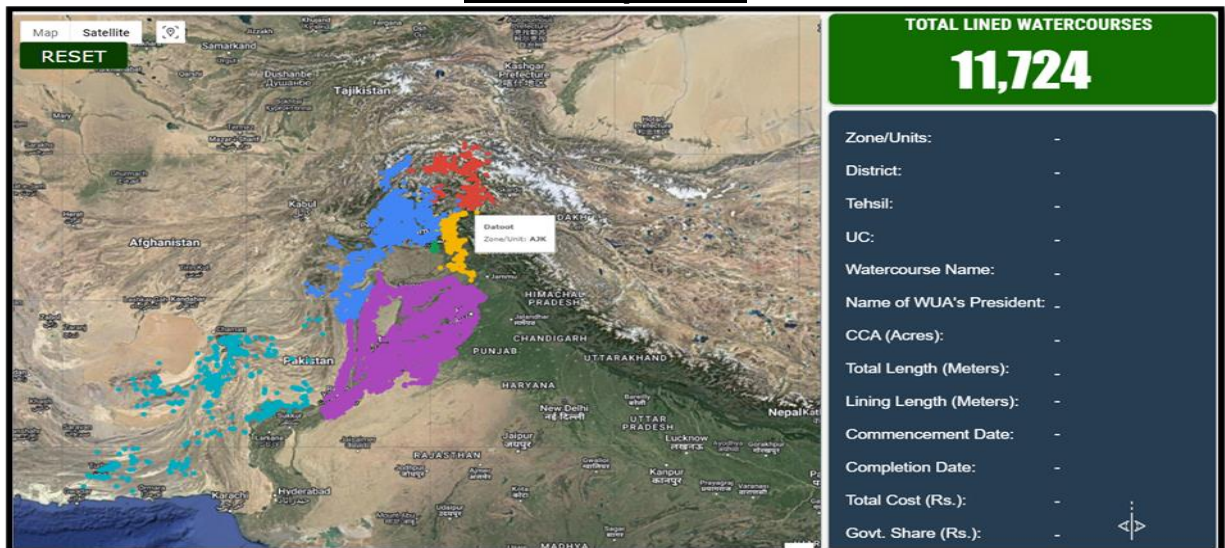
The data submission process is ongoing and will continue until the project concludes. Zonal Field Staff in KP and AJK are consistently entering data through a customized Android application, developed by the ICT

team of ME&IE consultants. Meanwhile, the ICT team has remained actively involved in cleaning and validating the incoming data. Any identified errors are immediately communicated to the respective Zonal DDs/ADs for prompt rectification.

NATIONAL PMIS DASHBOARD PROGRESS



GIS Component



Watercourses Component



Water Storage Tank Component



Precision Laser Land Leveler (PLL)



CHAPTER 5: ISSUES / BOTTLENECKS

The ME&IE Consultants are continuously facing the following issues and constraints for timely instigating the activities:

- Due to non-availability of NWMC (NESPAK) deliverables/reports, ME&IE Consultants are facing problems to monitor & evaluate the working of NWMC. In this regard the cooperation and coordination of NWMCs as well as the relevant Directorates are required.
- Non availability of Technical Sanctions of the watercourses.
- Non-availability of complete up-to-date inventory / data of all interventions from the Client, Provincial Agricultural Departments (OFWM) & NWMCs (NESPAK) till to date.
- Irregularity in the fund releases is also one of the key difficulties in the completion of the required project assignments / tasks, on time.
- The Water Storage data from Balochistan Zone was last updated on October 24, 2023. However, since then, there has been no further data input received from Balochistan Zone's enumerators via the Android Application. There is still a significant amount of pending data on their end. That needs to be submitted promptly to address the backlog on the PMIS Dashboard.
- The Watercourses data from Balochistan Zone was last updated on October 17, 2023. However, since then, there has been no further data input received from Balochistan Zone enumerators via the Android Application. There is still a significant amount of pending data on their end. That needs to be submitted promptly to address the backlog on the PMIS Dashboard.
- AJK-Last WST received date was 09 August 2024
- AJK-Last Water Course received date was 19 August 2024

ANNEXURES A TO T

ANNEXURE A: TENTATIVE WORK PLAN FOR THE FOUR MONTHS (OCT -DEC 2024)

TENTATIVE WORK PLANNED FOR THE THREE MONTHS (October 2024 To December 2024)												Legend	
												Activity starts	↓
												Activity Ends	↑
												Activity Span	---
No.	ACTIVITIES	3 Months-Year 2024 (Weeks)											
		Oct				Nov				Dec			
		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	Project Closure Activities (Administrative)												
	1.1 Preparing Remuneration & Reimbursable invoices												↓
	1.2 Handing over the project assets to the client											↓	↓
2	Post Field Activities												
	2.1 Detailed Data Review and Error Checking		↓				↓						
	2.2 Statistical Validation				↓								
	2.3 Focused Comparison and Trend Analysis						↓						
	2.4 Enhanced Data Cleaning										↓		
	2.5 Final Reports Structure and Content Review											↓	↓
3	ICT Assignment												
	3.1 Improvement/Updation of website of NPIWC-II												
	3.2 Monitoring online data collection and data entry												
	3.3 Monitoring Android based Mobile Application under implementation by field staff.												
	3.4 Data collection of interventions in MIS/GIS database												
	3.5 Capacity Building Trainings / Refresher of Departments												
	3.6 Data entry, Data cleaning, Data processing & data analysis.												
4	Coordination												
	4.1 Meetings of TL with NPC and OFWM Departments regarding Project Progress / Issues												
	4.2 Meeting of DTLs with respective DTL of PC & concerned OFWM Departments												
	4.3 ME&IE Consultants Internal Meetings												
5	Deliverable												
	5.1 Monthly Monitoring Report	↓	↓			↓	↓			↓	↓		
	5.2 Quarterly Monitoring & Evaluation Report (Jul-Sep 2024)	↓	↓										
	5.3 Baseline Survey Report	↓	↓										
	5.4 Endline Survey Report	↓	↓										
	5.5 Draft Assignment Completion Report											↓	↓

ANNEXURE-B: MATRIX OF RESPONSIBILITIES

MATRIX OF RESPONSIBILITIES

LEGEND	
●	Primary Responsibility
○	Secondary Responsibility
○	Assistance

SR. NO.	DELIVERABLE / ACTIVITIES	NPC-FPMU	Agriculture Dept. (OEWM)	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	-	-	-	●

ANNEXURE-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	b)
C2: Watercourses Improvements	Improvement of 47,278 watercourses on cost sharing basis: 40% farmers in terms of labour, and	a) Establishment of 47,278 Water users' associations (WUAs); b) Registration of 47,278 WUAs; c) Improvement	a) 47,278 WCAs established; b) 47,278 WCAs registered; c) 47,278 watercourses improved and lined;	a) Conveyance losses for improved watercourses decreased by about 15 percentage points.	a) Increase in cropping intensity on improved watercourses by 5-24%; b) Increase in crop yields.	a) Increase in farm income; b) Increase in employment for farm labour; c) Reduction in poverty;	a) The water flow measurements will be carried out at before and after watercourse improvement on 2-5%	e)

PROJECT SUBCOMPONENTS	TARGETS	ACTIVITIES	OUTPUTS	OUTCOME-1	OUTCOMES-2	GOALS / IMPACT	METHODOLOGY FOR MEASURING RESULTS	
	60% funded by project.	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) 1.654 million households benefited from the activity; c) 11.347 million acres served with improved watercourses	c) Increase in irrigated area d) Increase in agriculture output per unit of water by about 37%	d) Enhanced food security for the country.	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; • Before and after employment; d) The difference between before and after will be considered the result of the	

PROJECT SUBCOMPONENTS	TARGETS	ACTIVITIES	OUTPUTS	OUTCOME-1	OUTCOMES-2	GOALS / IMPACT	METHODOLOGY FOR MEASURING RESULTS	
							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 c) Agree to first construct the tank with his/her own funds and then received subsidy at 40% on issuance of FCR	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 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.	e)
C4: Provision of Land Leveling Units	a) Provision of 11,610 laser land leveling units to	a) 11,610 laser units provided to farmers / service	a) 11,610 farmers / service providers received PLL units; b) Farmers / service	a) Land levelled on Farmers' / service providers'	a) Water application efficiency increased at	e) Increased area under irrigated crops;	a) The land levelling is expected to save irrigation	f)

PROJECT SUBCOMPONENTS	TARGETS	ACTIVITIES	OUTPUTS	OUTCOME-1	OUTCOMES-2	GOALS / IMPACT	METHODOLOGY FOR MEASURING RESULTS	
	farmers and service providers on a cost sharing basis: 50% by farmer / service provider and 50% by the project.	providers; b) Farmers trained in using the units.	providers received training in using the units.	farms; b) Land levelled on fellow farmers on rent; c) Total 3.483million acres levelled by 11,610 units.	field level; b) Even germination of seed. c) Field application losses reduced by 10 percentage points d) Water productivity increased by 24%	f) Enhanced crop yields g) Increased farm income	water and result in better and even germination of seeds which can enhance crop yields. The crop yields thus affected will be reflected in agriculture sample surveys. b) 2-4% sample units will be visited by ME&IE Consultants teams after one years of delivery c) The unit will be verified d) Area treated during the year will be collected e) Farmers' feedback collected on quality of the unit, quality of the after-sale service, etc.	

ANNEXURE-D: 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

ANNEXURE-E: ECOLOGICAL ZONE WISE ACHIEVEMENTS OF M&E CONSULTANT OF VARIOUS INTERVENTIONS IN PUNJAB ZONE

Ecological Zone Wise Achievement of Watercourses by ME&IE Consultants Till 30-06-2024					
Ecological zone	Districts	W.C Completed By OFWM till 30-06-2024	Sample Size 5% ME&IE Consultants	Achievement of ME&IE Consultants	Remaining Part
Partial Irrigated Barani Zone	Bhakkar	183	9	11	-2
	Mianwali	146	7	4	3
Sub Total		329	16	15	1
Irrigated (Rice Zone)	Gujranwala	101	5	7	-2
	Hafizabad	85	4	10	-6
	Gujrat	35	2	6	-4
	Narowal	16	1	1	0
	Sialkot	84	4	5	-1
	Mandi Bahu Din	79	4	4	0
	Lahore	23	1	2	-1
	Kasur	83	4	6	-2
	Sheikhupura	99	5	8	-3
	Nankana Sahib	50	3	3	0
Sub Total		655	33	52	-19
Irrigated (Mixed Zone)	Sahiwal	145	7	8	-1
	Okara	136	7	15	-8
	Pakpatan	121	6	6	0
	Faisalabad	130	7	9	-2
	Jhang	99	5	5	0
	Chiniot	34	2	3	-1
	Toba Tek Singh	124	6	6	0
	khushab	80	4	8	-4
	Sargodha	146	7	8	-1
Sub Total		1015	51	68	-17
Irrigated (Cotton Zone)	Multan	153	8	9	-1
	DG Khan	118	6	9	-3
	Bahawalpur	154	8	9	-1
	Bahawalnagar	220	11	22	-11
	Rahim Yar Khan	331	17	18	-1
	Lodhran	154	8	15	-7
	khanewal	123	6	7	-1
	Rajanpur	119	6	6	0
	Muzaffargarh	133	7	6	1
	Layyah	126	6	8	-2
	Vehari	132	7	6	1
Sub Total		1763	88	115	-27
Grand Total		3762	189	250	-61
Updated Figure provided by Punjab OFWM Department (Completed WC till 30-06-2024)		4063	203	250	-47

Ecological Zone Wise Achievement of WSTs by ME&IE Consultants Till 30-06-2024					
Ecological zone	Districts	W.S.T Completed By OFWM till 30-06-2023	Sample Size 5% ME&IE Consultants	Achievement of ME&IE Consultants	Remaining Balance
Barani	Rawalpindi	71	4	4	0
	Attock	79	4	6	-2
	Jhelum	63	3	2	1
	Chakwal	155	8	7	1
Sub Total		368	18	19	-1
Partial Irrigated Barani Zone	Bhakkar	19	1	5	-4
	Mianwali	3	0	1	-1
Sub Total		22	1	6	-5
Irrigated (Rice Zone)	Gujranwala	1	0	1	-1
	Hafizabad	13	1	3	-2
	Gujrat	27	1	2	-1
	Narowal	0	0		0
	Sialkot	4	0	1	-1
	Mandi Bahu Din	2	0	2	-2
	Lahore	2	0	1	-1
	Kasur	7	0	2	-2
	Sheikhupura	2	0	2	-2
	Nankana Sahib	3	0	2	-2
Sub Total		61	3	16	-13
Irrigated (Mixed Zone)	Sahiwal	5	0	1	-1
	Okara	19	1	1	0
	Pakpatan	15	1	1	0
	Faisalabad	35	2	2	0
	Jhang	31	2	2	0
	Chiniot	8	0	1	-1
	Toba Tek Singh	55	3	3	0
	khushab	28	1	2	-1
	Sargodha	35	2	2	0
Sub Total		231	12	15	-3
Irrigated (Cotton Zone)	Multan	17	1	5	-4
	DG Khan	33	2	3	-1
	Bahawalpur	42	2	1	1
	Bahawalnagar	51	3	3	0
	Rahim Yar Khan	67	3	4	-1
	Lodhran	14	1	1	0
	khanewal	22	1	2	-1
	Rajanpur	10	1	1	-1
	Muzaffargarh	21	1	2	-1
	Layyah	18	1	1	0
	Vehari	14	1	1	0
Sub Total		309	15	24	-9
Grand Total		991	50	80	-30

Ecological Zone Wise Achievement of LLL Units by ME&IE Consultants Till 30-06-2024					
Ecological zone	Districts	Total No of Laser Land Levelling units Delivered By OFWM till 30-06-2023	Sample Size 5% ME&IE Consultants	Achievement of ME&IE Consultants	Remaining Balance
Partial Irrigated Barani Zone	Bhakkar	191	10	10	0
	Mianwali	146	7	7	0
Sub Total		337	17	17	0
Irrigated (Rice Zone)	Gujranwala	235	12	12	0
	Hafizabad	188	9	10	-1
	Gujrat	115	6	6	0
	Narowal	139	7	7	0
	Sialkot	196	10	5	5
	Mandi Bahu Din	163	8	8	0
	Lahore	97	5	6	-1
	Kasur	240	12	12	0
	Sheikhupura	228	11	7	4
	Nankana Sahib	140	7	7	0
Sub Total		1741	87	80	7
Irrigated (Mixed Zone)	Sahiwal	208	10	8	2
	Okara	203	10	7	3
	Pakpatan	180	9	11	-2
	Faisalabad	275	14	14	0
	Jhang	253	13	15	-2
	Chiniot	159	8	15	-7
	Toba Tek Singh	206	10	9	1
	khushab	118	6	8	-2
	Sargodha	219	11	6	5
Sub Total		1821	91	93	-2
Irrigated (Cotton Zone)	Multan	139	7	8	-1
	khanewal	187	9	9	0
	Vehari	199	10	8	2
	Lodhran	149	7	8	-1
	Bahawalpur	257	13	12	1
	Bahawalnagar	282	14	15	-1
	Rahim Yar Khan	264	13	14	-1
	DG Khan	123	6	8	-2
	Rajanpur	123	6	6	0
	Muzaffargarh	235	12	12	0
	Layyah	166	8	16	-8
Sub Total		2124	106	116	-10
Grand Total		6023	301	306	-5

ANNEXURE F: PUNJAB - WATERCOURSE DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress				Overall
			1st Milestone	2nd Milestone	Work Order Issued	Work Order Pending	
Bahawalpur	Bahawalnagar	220	0	0	0	0	220
Bahawalpur	Bahawalpur	154	0	0	0	0	154
Bahawalpur	Rahim Yar Khan	331	0	0	0	0	331
Bahawalpur Total		705	0	0	0	0	705
Dera Ghazi Khan	Dera Ghazi Khan	118	0	0	0	0	118
Dera Ghazi Khan	Layyah	126	0	0	0	0	126
Dera Ghazi Khan	Muzaffargarh	133	0	0	0	0	133
Dera Ghazi Khan	Rajanpur	119	0	0	0	0	119
Dera Ghazi Khan Total		496	0	0	0	0	496
Faisalabad	Chiniot	34	0	0	0	0	34
Faisalabad	Faisalabad	130	0	0	0	0	130
Faisalabad	Jhang	99	0	0	0	0	99
Faisalabad	Toba Tek Singh	124	0	0	0	0	124
Faisalabad Total		387	0	0	0	0	387
Gujranwala	Gujranwala	101	0	0	0	0	101
Gujranwala	Narowal	16	0	0	0	0	16
Gujranwala	Sialkot	84	0	0	0	0	84
Gujranwala Total		201	0	0	0	0	201
Gujrat	Gujrat	35	0	0	0	0	35
Gujrat	Hafizabad	85	0	0	0	0	85
Gujrat	Mandi Bahauddin	79	0	0	0	0	79
Gujrat Total		199	0	0	0	0	199
Lahore	Kasur	83	0	0	0	0	83
Lahore	Lahore	23	0	0	0	0	23
Lahore	Nankana Sahib	50	0	0	0	0	50
Lahore	Sheikhupura	99	0	0	0	0	99
Lahore Total		255	0	0	0	0	255
Multan	Khanewal	123	0	0	0	0	123
Multan	Lodhran	154	0	0	0	0	154
Multan	Multan	153	0	0	0	0	153
Multan	Vehari	132	0	0	0	0	132
Multan Total		562	0	0	0	0	562
Sahiwal	Okara	136	0	0	0	0	136
Sahiwal	Pakpattan	121	0	0	0	0	121
Sahiwal	Sahiwal	145	0	0	0	0	145
Sahiwal Total		402	0	0	0	0	402
Sargodha	Bhakkar	183	0	0	0	0	183
Sargodha	Khushab	80	0	0	0	0	80
Sargodha	Mianwali	146	0	0	0	0	146
Sargodha	Sargodha	146	0	0	0	0	146
Sargodha Total		555	0	0	0	0	555
Grand Total		3762	0	0	0	0	3762

ANNEXURE G: PUNJAB - WSP DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress		Overall
			Work Order Issued	Work Order Pending	
Bahawalpur	Bahawalnagar	51	0	0	51
Bahawalpur	Bahawalpur	42	0	0	42
Bahawalpur	Rahim Yar Khan	67	0	0	67
Bahawalpur Total		160	0	0	160
Dera Ghazi Khan	Dera Ghazi Khan	33	0	0	33
Dera Ghazi Khan	Layyah	18	0	0	18
Dera Ghazi Khan	Muzaffargarh	21	0	0	21
Dera Ghazi Khan	Rajanpur	10	0	0	10
Dera Ghazi Khan Total		82	0	0	82
Faisalabad	Chiniot	8	0	0	8
Faisalabad	Faisalabad	35	0	0	35
Faisalabad	Jhang	31	0	0	31
Faisalabad	Toba Tek Singh	55	0	0	55
Faisalabad Total		129	0	0	129
Gujranwala	Gujranwala	2	0	0	2
Gujranwala	Sialkot	4	0	0	4
Gujranwala Total		6	0	0	6
Gujrat	Gujrat	26	0	0	26
Gujrat	Hafizabad	13	0	0	13
Gujrat	Mandi Bahauddin	2	0	0	2
Gujrat Total		41	0	0	41
Lahore	Kasur	7	0	0	7
Lahore	Lahore	2	0	0	2
Lahore	Nankana Sahib	3	0	0	3
Lahore	Sheikhupura	2	0	0	2
Lahore Total		14	0	0	14
Multan	Khanewal	22	0	0	22
Multan	Lodhran	14	0	0	14
Multan	Multan	17	0	0	17
Multan	Vehari	14	0	0	14
Multan Total		67	0	0	67
Rawalpindi	Attock	79	0	0	79
Rawalpindi	Chakwal	155	0	0	155
Rawalpindi	Jhelum	63	0	0	63
Rawalpindi	Rawalpindi	71	0	0	71
Rawalpindi Total		368	0	0	368
Sahiwal	Okara	19	0	0	19
Sahiwal	Pakpattan	15	0	0	15
Sahiwal	Sahiwal	5	0	0	5
Sahiwal Total		39	0	0	39
Sargodha	Bhakkar	19	0	0	19
Sargodha	Khushab	28	0	0	28
Sargodha	Mianwali	3	0	0	3
Sargodha	Sargodha	35	0	0	35
Sargodha Total		85	0	0	85
Overall		991	0	0	991

ANNEXURE H: PUNJAB - PLL DATA SUBMISSION – SUMMARY

Division	District	Delivered	Under Progress	Overall
Bahawalpur	Bahawalnagar	283	0	283
Bahawalpur	Bahawalpur	246	0	246
Bahawalpur	Rahim Yar Khan	259	0	259
Bahawalpur Total		788	0	788
Dera Ghazi Khan	Dera Ghazi Khan	127	0	127
Dera Ghazi Khan	Layyah	165	0	165
Dera Ghazi Khan	Muzaffargarh	225	0	225
Dera Ghazi Khan	Rajanpur	120	0	120
Dera Ghazi Khan Total		637	0	637
Faisalabad	Chiniot	160	0	160
Faisalabad	Faisalabad	257	0	257
Faisalabad	Jhang	236	0	236
Faisalabad	Toba Tek Singh	191	0	191
Faisalabad Total		844	0	844
Gujranwala	Gujranwala	232	0	232
Gujranwala	Sialkot	190	0	190
Gujranwala	Narowal	138	0	138
Gujranwala Total		560	0	560
Gujrat	Gujrat	114	0	114
Gujrat	Mandi Bahauddin	160	0	160
Gujrat Total		274	0	274
Lahore	Kasur	232	0	232
Lahore	Lahore	94	0	94
Lahore	Nankana Sahib	137	0	137
Lahore	Sheikhupura	225	0	225
Lahore Total		688	0	688
Multan	Khanewal	184	0	184
Multan	Lodhran	145	0	145
Multan	Multan	126	0	126
Multan	Vehari	193	0	193
Multan Total		648	0	648
Sahiwal	Okara	203	0	203
Sahiwal	Pakpattan	178	0	178
Sahiwal	Sahiwal	207	0	207
Sahiwal Total		588	0	588
Sargodha	Bhakkar	171	0	171
Sargodha	Khushab	111	0	111
Sargodha	Mianwali	140	0	140
Sargodha	Sargodha	207	0	207
Sargodha Total		629	0	629
Rawalpindi	Attock	188	0	188
Rawalpindi Total		188	0	188
Grand Total		5844	0	5844

ANNEXURE I: KP - WATERCOURSE DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress			Pending	Overall
			1st Milestone	2nd Milestone	Work Order Issued	TS Pending	
Bajaur	Bajaur	73	0	0	0	0	73
Bajaur Total		73	0	0	0	0	73
Bannu	Bannu	107	0	0	0	0	107
Bannu	Lakki Marwat	122	0	0	0	0	122
Bannu Total		229	0	0	0	0	229
D.I. Khan	D.I. Khan	503	3	0	0	1	507
D.I. Khan	Tank	77	0	0	0	0	77
D.I. Khan Total		580	3	0	0	1	584
Hazara	Abbottabad	34	0	0	0	0	34
Hazara	Battagram	49	0	0	0	0	49
Hazara	Haripur	74	0	0	0	0	74
Hazara	Kolai Pallas	2	0	0	0	0	2
Hazara	Lower Kohistan	20	0	0	0	0	20
Hazara	Mansehra	138	0	5	0	0	143
Hazara	Torghar	38	0	0	0	0	38
Hazara	Upper Kohistan	17	0	0	0	0	17
Hazara Total		372	0	5	0	0	377
Khyber	Khyber	28	0	0	12	0	40
Khyber Total		28	0	0	12	0	40
Kohat	Hangu	67	0	0	0	0	67
Kohat	Karak	84	0	0	0	0	84
Kohat	Kohat	92	0	0	0	0	92
Kohat Total		243	0	0	0	0	243
Kurram	Kurram	13	0	0	0	0	13
Kurram Total		13	0	0	0	0	13
Malakand	Buner	114	0	0	0	0	114
Malakand	Chitral	118	4	1	0	5	128
Malakand	Lower Dir	145	1	0	4	0	150
Malakand	Malakand	106	0	0	0	0	106
Malakand	Shangla	58	0	0	0	0	58
Malakand	Swat	300	1	1	17	0	319
Malakand	Upper Dir	138	0	0	0	0	138
Malakand Total		979	6	2	21	5	1013
Mardan	Mardan	152	0	0	0	9	161
Mardan	Swabi	160	0	0	0	0	160
Mardan Total		312	0	0	0	9	321
Mohmand	Mohmand	90	0	0	0	0	90
Mohmand Total		90	0	0	0	0	90
North Waziristan	North Waziristan	8	0	3	0	0	11
North Waziristan Total		8	0	3	0	0	11
Orakzai	Orakzai	1	0	0	0	0	1
Orakzai Total		1	0	0	0	0	1
Peshawar	Charsadda	152	1	0	1	0	154
Peshawar	Nowshera	136	0	0	0	0	136
Peshawar	Peshawar	78	0	0	0	0	78
Peshawar Total		366	1	0	1	0	368
S.Waziristan	S.Waziristan	36	0	0	0	0	36
S.Waziristan Total		36	0	0	0	0	36
Overall		3330	10	10	34	15	3399

ANNEXURE J: KP - WST DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress		Pending	Overall
			2nd Milestone	Work Order Issued	TS Pending	
Bajaur	Bajaur	17	0	0	0	17
Bajaur Total		17	0	0	0	17
Bannu	Bannu	12	0	0	0	12
Bannu	Lakki Marwat	35	0	0	0	35
Bannu Total		47	0	0	0	47
D.I. Khan	D.I. Khan	89	0	0	1	90
D.I. Khan	Tank	35	0	0	0	35
D.I. Khan Total		124	0	0	1	125
Hazara	Abbottabad	21	0	0	0	21
Hazara	Battagram	29	0	0	0	29
Hazara	Haripur	40	0	0	0	40
Hazara	Kolai Pallas	4	0	0	0	4
Hazara	Lower Kohistan	3	0	0	0	3
Hazara	Mansehra	45	3	0	0	48
Hazara	Torghar	14	0	0	0	14
Hazara	Upper Kohistan	11	0	0	0	11
Hazara Total		167	3	0	0	170
Khyber	Khyber	17	0	0	0	17
Khyber Total		17	0	0	0	17
Kohat	Hangu	12	0	0	0	12
Kohat	Karak	73	0	0	0	73
Kohat	Kohat	5	0	0	0	5
Kohat Total		90	0	0	0	90
Kurram	Kurram	2	0	0	0	2
Kurram Total		2	0	0	0	2
Malakand	Buner	44	0	0	0	44
Malakand	Chitral	22	0	0	0	22
Malakand	Lower Dir	41	0	0	0	41
Malakand	Malakand	24	0	0	0	24
Malakand	Shangla	40	0	0	0	40
Malakand	Swat	171	0	0	0	171
Malakand	Upper Dir	54	0	0	0	54
Malakand Total		396	0	0	0	396
Mardan	Mardan	34	0	0	1	35
Mardan	Swabi	39	0	0	0	39
Mardan Total		73	0	0	1	74
Mohmand	Mohmand	113	0	0	0	113
Mohmand Total		113	0	0	0	113
North Waziristan	North Waziristan	15	0	0	0	15
North Waziristan Total		15	0	0	0	15
Orakzai	Orakzai	2	0	0	0	2
Orakzai Total		2	0	0	0	2
Peshawar	Charsadda	13	0	0	0	13
Peshawar	Nowshera	88	0	1	0	89
Peshawar	Peshawar	57	0	0	0	57
Peshawar Total		158	0	1	0	159
S.Waziristan	S.Waziristan	32	0	0	0	32
S.Waziristan Total		32	0	0	0	32
Overall		1253	3	1	2	1259

ANNEXURE K: KP - PLL DATA SUBMISSION – SUMMARY

Division	District	Delivered	Under Progress	Overall
D.I Khan	D.I Khan	50	0	50
Overall		50	0	50

ANNEXURE L: BALOCHISTAN - WATERCOURSE DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress			Pending	Overall
			1st Milestone	2nd Milestone	TS Issued	TS Pending	
Kalat	Awaran	150	0	0	0	1	151
Kalat	Kalat	281	0	0	0	1	282
Kalat	Khuzdar	165	0	0	0	0	165
Kalat	Lasbela	154	0	0	35	0	189
Kalat	Mastung	191	0	0	6	1	198
Kalat	Surab	0	0	0	19	23	42
Kalat Total		941	0	0	60	26	1027
Loralai	Barkhan	64	0	0	0	0	64
Loralai	Duki	0	0	0	43	0	43
Loralai	Loralai	335	0	0	0	5	340
Loralai	Musakhail	187	0	0	0	32	219
Loralai Total		586	0	0	43	37	666
Makran	Gwadar	23	0	0	0	0	23
Makran	Kech	59	0	0	9	64	132
Makran	Panjgur	121	0	0	33	0	154
Makran Total		203	0	0	42	64	309
Nasirabad	Jaffarabad	141	0	0	0	0	141
Nasirabad	Jhal Magsi	27	0	0	0	0	27
Nasirabad	Kachi	4	0	0	97	1	102
Nasirabad	Nasirabad	55	0	0	86	28	169
Nasirabad	Sohbatpur	79	0	0	0	0	79
Nasirabad Total		306	0	0	183	29	518
Quetta	Killa Abdullah	110	0	0	0	0	110
Quetta	Pishin	186	0	0	0	1	187
Quetta	Quetta	83	0	0	1	0	84
Quetta Total		379	0	0	1	1	381
Rakhshan	Chaghi	77	0	0	0	0	77
Rakhshan	Kharan	26	0	0	2	40	68
Rakhshan	Nushki	4	0	0	61	36	101
Rakhshan	Washuk	18	0	0	0	2	20
Rakhshan Total		125	0	0	63	78	266
Sibi	Dera Bugti	99	0	0	0	0	99
Sibi	Harnai	42	0	0	0	0	42
Sibi	Kohlu	58	0	0	0	0	58
Sibi	Sibi	60	0	0	0	0	60
Sibi	Ziarat	71	0	0	1	0	72
Sibi Total		330	0	0	1	0	331
Zhob	Killa Saifullah	235	0	0	0	0	235
Zhob	Sherani	51	0	0	0	18	69
Zhob	Zhob	80	0	0	1	0	81
Zhob Total		366	0	0	1	18	385
Overall		3236	0	0	394	253	3883

ANNEXURE M: BALOCHISTAN - WST DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress			Pending	Overall
			1st Milestone	2nd Milestone	TS Issued	TS Pending	
Kalat	Awaran	84	0	0	1	2	87
Kalat	Kalat	177	0	0	2	0	179
Kalat	Khuzdar	139	0	0	0	0	139
Kalat	Lasbela	105	0	0	39	6	150
Kalat	Mastung	99	0	0	8	0	107
Kalat	Surab	0	0	0	29	0	29
Kalat Total		604	0	0	79	8	691
Loralai	Barkhan	54	0	0	0	0	54
Loralai	Duki	0	0	0	29	0	29
Loralai	Loralai	113	0	0	0	0	113
Loralai	Musakhel	26	0	0	0	11	37
Loralai Total		193	0	0	29	11	233
Makran	Gwadar	7	0	0	0	0	7
Makran	Kech	35	0	0	18	46	99
Makran	Panjgur	46	0	1	121	1	169
Makran Total		88	0	1	139	47	275
Nasirabad	Jaffarabad	17	0	0	0	0	17
Nasirabad	Jhal Magsi	30	0	0	0	0	30
Nasirabad	Kachi	36	0	0	46	0	82
Nasirabad	Nasirabad	0	0	0	17	0	17
Nasirabad	Sohbatpur	14	0	0	0	0	14
Nasirabad Total		97	0	0	63	0	160
Quetta	Killa Abdullah	55	0	0	0	1	56
Quetta	Pishin	107	0	0	10	2	119
Quetta	Quetta	75	0	1	0	0	76
Quetta Total		237	0	1	10	3	251
Rakhshan	Chaghi	33	0	0	0	14	47
Rakhshan	Kharan	15	0	0	13	8	36
Rakhshan	Nushki	0	0	0	53	9	62
Rakhshan	Washuk	4	0	0	8	2	14
Rakhshan Total		52	0	0	74	33	159
Sibi	Dera Bugti	38	0	0	1	0	39
Sibi	Harnai	21	0	0	0	0	21
Sibi	Kohlu	35	0	0	0	0	35
Sibi	Sibi	23	0	0	0	0	23
Sibi	Ziarat	21	0	0	0	0	21
Sibi Total		138	0	0	1	0	139
Zhob	Killa Saifullah	117	0	0	0	0	117
Zhob	Sherani	25	0	0	0	0	25
Zhob	Zhob	85	0	0	0	0	85
Zhob Total		227	0	0	0	0	227
Overall		1636	0	2	395	102	2135

ANNEXURE N: BALOCHISTAN - PLL DATA SUBMISSION – SUMMARY

Division	District	Delivered	Under Progress	Overall
Kalat	Lasbela	4	0	4
Makran	Panjgur	5	0	5
Makran	Turbat	6	0	6
Nasirabad	Jaffarabad	12	0	12
Nasirabad	Jhal Magsi	1	0	1
Nasirabad	Sohbatpur	3	0	3
Quetta	Killa Abdullah	1	0	1
Sibi	Sibi	2	0	2
Overall		34	0	34

ANNEXURE O: GB - WATERCOURSES DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress		Overall
			TS Issued	TS Pending	
Gilgit	Astore	44	0	0	44
Gilgit	Diamer	125	0	0	125
Gilgit	Ghizer	102	0	0	102
Gilgit	Gilgit	109	0	0	109
Gilgit	Hunza	35	0	0	35
Gilgit	Nagar	30	0	0	30
Gilgit Total		445	0	0	445
Skardu	Ghanche	113	0	0	113
Skardu	Kharmang	42	0	0	42
Skardu	Shigar	68	0	0	68
Skardu	Skardu	141	0	0	141
Skardu Total		364	0	0	364
Overall		809	0	0	809

ANNEXURE P: GB - WST DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress		Overall
			TS Issued	TS Pending	
Gilgit	Astore	19	0	0	19
Gilgit	Diamer	50	0	0	50
Gilgit	Ghizer	45	0	0	45
Gilgit	Gilgit	60	0	0	60
Gilgit	Hunza	12	0	0	12
Gilgit	Nagar	14	0	0	14
Gilgit Total		200	0	0	200
Skardu	Kharmang	24	0	0	24
Skardu	Shigar	49	0	0	49
Skardu	Skardu	55	0	0	55
Skardu Total		128	0	0	128
Overall		328	0	0	328

ANNEXURE Q: AJK- WATERCOURSES DATA SUBMISSIONS – SUMMARY

Division	District	Completed	Under Progress		Pending		Overall
			1st Milestone	Work Order Issued	TS Pending	Work Order Pending	
Muzaffarad	MZD	103	0	13	7	0	123
	Jhelum	32	0	10	0	1	43
	Neelum	72	1	7	0	0	80
MZD Total		207	1	30	7	1	246
Poonch	Poonch	48	1	8	0	0	57
	Bagh	31	0	7	0	0	38
	Haveli	10	1	2	0	0	13
	Sudhnoti	24	1	16	0	2	43
Poonch Total		113	3	33	0	2	151
Mirpur	Mirpur	84	0	2	0	1	87
	Bhimber	125	0	32	0	0	157
	Kotli	42	0	8	0	5	55
Mirpur Total		251	0	42	0	6	299
Overall		571	4	105	7	9	696

ANNEXURE R: AJK - WST/WHs DATA SUBMISSIONS – SUMMARY

Division	District	Completed	Under Progress			Pending		Overall
			1st Milestone	2nd Milestone	Work Order Issued	TS Pending	Work Order Pending	
Muzaffarabad	Muzaffarabad	144	1	0	16	0	0	161
	Jhelum	25	0	0	0	2	0	27
	Neelum	0	0	0	1	1	0	2
Muzaffarabad Total		169	1	0	17	3	0	190
Poonch	Poonch	64	1	1	7	0	0	73
	Bagh	57	1	0	21	0	0	79
	Haveli	29	0	0	5	2	0	36
	Sudhnoti	25	1	0	28	0	0	54
Poonch Total		175	3	1	61	2	0	242
Mirpur	Mirpur	14	0	0	1	0	0	15
	Bhimber	12	0	0	8	0	0	20
	Kotli	36	0	0	17	0	12	65
Mirpur Total		62	0	0	26	0	12	100
Overall		406	4	1	104	5	12	532

ANNEXURE S: ICT - WATERCOURSE DATA SUBMISSION – SUMMARY

Division	District	Completed	Under Progress				Overall
			1st Milestone	2nd Milestone	Work Order Issued	Work Order Pending	
ICT	ICT	41	0	0	0	0	41
Overall		41	0	0	0	0	41

ANNEXURE T: DISTRICT-WISE PROGRESS OF DASHBOARD IN BALOCHISTAN

District-wise Progress of Dashboard, Balochistan (Watercourses)

Division	District	2019-20		2020-21		2021-22		TOTAL	
		Total Data uploaded by ME&IEC	Validated by OFWM	Total Data uploaded by ME&IEC	Validated by OFWM	Total Data uploaded by ME&IEC	Validated by OFWM	Total Data uploaded by ME&IEC	Validated by OFWM
Kalat	Awaran	140	76	22	22	0	0	162	98
Kalat	Kalat	97	0	28	28	158	123	283	151
Kalat	Khuzdar	139	0	17	0	9	6	165	6
Kalat	Lasbela	110	0	35	0	44	35	189	35
Kalat	Mastung	102	93	30	1	66	60	198	154
Kalat	Surab	20	20	11	11	11	11	42	42
Total		608	189	143	62	288	235	1039	486
(%)		31%		43%		82%		47%	
Loralai	Barkhan	61	0	0	0	3	0	64	0
Loralai	Duki	27	27	15	15	1	1	43	43
Loralai	Loralai	158	157	47	43	132	130	337	330
Loralai	Musakhail	100	99	86	44	1	0	187	143
Total		346	283	148	102	137	131	631	516
(%)		82%		69%		96%		82%	
Makran	Gwadar	12	0	11	0	0	0	23	0
Makran	Kech	68	68	20	20	44	44	132	132
Makran	Panjgur	124	73	25	25	5	5	154	103
Total		204	141	56	45	49	49	309	235
(%)		69%		80%		100%		76%	
Nasirabad	Jaffarabad	53	53	32	32	56	56	141	141
Nasirabad	Jhal Magsi	16	0	6		5	0	27	0
Nasirabad	Kachi	81	81	18	18	3	3	102	102
Nasirabad	Nasirabad	52	0	35	35	82	82	169	117
Nasirabad	Sohbatpur	14	14	20	20	45	41	79	75
Total		216	148	111	105	191	182	518	435
(%)		69%		95%		95%		84%	
Quetta	Killa Abdullah	106	0	2	0	2	0	110	0
Quetta	Pishin	99	97	39	2	52	52	190	151
Quetta	Quetta	41	25	10		33	26	84	51
Total		246	122	51	2	87	78	384	202
(%)		50%		4%		90%		53%	
Rakhshan	Chaghi	49	49	28	28	0	0	77	77
Rakhshan	Kharan	23	23	3		55	55	81	78
Rakhshan	Nushki	38	38	25	25	40	39	103	102
Rakhshan	Washuk	18	0	2	2	0	0	20	2
Total		128	110	58	55	95	94	281	259
(%)		86%		95%		99%		92%	
Sibi	Dera Bugti	34	0	0	0	65	65	99	65
Sibi	Harnai	23	0	19	15	0	0	42	15
Sibi	Kohlu	41	41	17	17	0	0	58	58
Sibi	Sibi	33	33	6	6	25	25	64	64
Sibi	Ziarat	54	54	17	15	2	2	73	71
Total		185	128	59	53	92	92	336	273
(%)		69%		90%		100%		81%	
Zhob	Killa Saifullah	158	124	38	38	39	39	235	201
Zhob	Sherani	19	18	8	8	39	38	66	64
Zhob	Zhob	55	55	23	20	3	1	81	76
Total		232	197	69	66	81	78	382	341
(%)		85%		96%		96%		89%	
GRAND TOTAL		2165	1318	695	490	1020	939	3880	2747
(%)		61%		71%		92%		71%	

District-wise Progress of Dashboard, Balochistan (Water Storage Tanks)

Division	District	2019-20		2020-21		2021-22		TOTAL	
		Total Data uploaded by ME&IEC	Validated by OFWM	Total Data uploaded by ME&IEC	Validated by OFWM	Total Data uploaded by ME&IEC	Validated by OFWM	Total Data uploaded by ME&IEC	Validated by OFWM
Kalat	Awaran	12	12	27	27	48	0	87	39
Kalat	Kalat	20	2	32	32	127	65	179	99
Kalat	Khuzdar	20	0	30	0	89	68	139	68
Kalat	Lasbela	20	0	24	0	106	45	150	45
Kalat	Mastung	20	18	32	2	55	12	107	32
Kalat	Surab	3	3	9	9	17	17	29	29
Total		95	35	154	70	442	207	691	312
(%)		37%		45%		47%		45%	
Loralai	Barkhan	15	0	0	0	39	6	54	6
Loralai	Duki	7	7	9	9	13	13	29	29
Loralai	Loralai	22	22	32	3	59	59	113	84
Loralai	Musakhail	11	11	16	16	0	0	27	27
Total		55	40	57	28	111	78	223	146
(%)		73%		49%		70%		65%	
Makran	Gwadar	3	0	4	0	0	0	7	0
Makran	Kech	29	18	24	0	46	46	99	64
Makran	Panjgur	18	18	29	25	122	105	169	148
Total		50	36	57	25	168	151	275	212
(%)		72%		44%		90%		77%	
Nasirabad	Jaffarabad	0	0	8	8	9	9	17	17
Nasirabad	Jhal Magsi	7	0	0	0	23	0	30	0
Nasirabad	Kachi	18	18	24	24	40	40	82	82
Nasirabad	Nasirabad	0	0	8	8	9	9	17	17
Nasirabad	Sohbatpur	4	4	8	8	2	1	14	13
Total		29	22	48	48	83	59	160	129
(%)		76%		100%		71%		81%	
Quetta	Killa Abdullah	22	0	34	0	0	0	56	0
Quetta	Pishin	22	22	36	33	61	61	119	116
Quetta	Quetta	9	9	17		50	32	76	41
Total		53	31	87	33	111	93	251	127
(%)		58%		38%		84%		51%	
Rakhshan	Chaghi	10	10	23	23	14	14	47	47
Rakhshan	Kharan	3	3	12		14	14	29	17
Rakhshan	Nushki	9	9	23	23	30	30	62	62
Rakhshan	Washuk	4		10	10	0	0	14	10
Total		16	12	45	33	44	44	152	136
(%)		75%		73%		100%		89%	
Sibi	Dera Bugti	11	11	0	0	28	28	39	39
Sibi	Harnai	3	3	6	6	12	0	21	9
Sibi	Kohlu	9	9	18	18	0	0	27	27
Sibi	Sibi	8	8	5	5	10	5	23	18
Sibi	Ziarat	4	4	6	6	11	11	21	21
Total		35	35	35	35	61	44	131	114
(%)		100%		100%		72%		87%	
Zhob	Killa Saifullah	30	20	32	32	56	56	118	108
Zhob	Sherani	4	4	6	6	15	15	25	25
Zhob	Zhob	15	10	24	24	46		85	34
Total		49	34	62	62	117	71	228	167
(%)		69%		100%		61%		73%	
GRAND TOTAL		382	245	545	334	1137	747	2111	1343
(%)		64%		61%		66%		64%	