



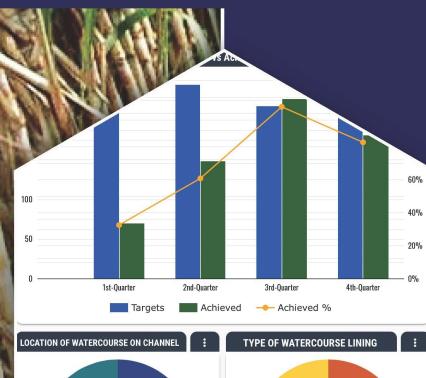
FEDERAL PROJECT MANAGEMENT UNIT
FEDERAL WATER MANAGEMENT CELL
MINISTRY OF NATIONAL
FOOD SECURITY & RESEARCH
ISLAMABAD - PAKISTAN

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

MONITORING, EVALUATION AND IMPACT EVALUATION CONSULTANTS

QUARTERLY MONITORING & EVALUATION REPORT

OCTOBER TO DECEMBER 2021





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

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

For

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

**QUARTERLY MONITORING AND EVALUATION REPORT
OCTOBER-DECEMBER 2021**

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ACRONYMS

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

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

EXECUTIVE SUMMARY

The report in hand, "Quarterly Monitoring and Evaluation Report for the period of 01 October 2021 to 31 December 2021" is comprising of five sections.

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

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

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

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

The monitoring strategy planned to be followed by ME&IE Consultants is briefly described in 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 (October 01, 2021 to December 31, 2021) as listed below.

This section also summarizes the compliance status of Quarterly Tentative Work Plan.

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

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

- Data collection from OFWM Department/NWMC for Baseline survey/regular monitoring
- Regular Monitoring of Interventions in the Field
- Data Collection of the Interventions in the Field
- Online Data Entry in Android Based Application.
- Baseline survey field visits
- Data entry, Data cleaning, Data processing & data Analysis
- Meetings of ME&IE Consultants with Stakeholders Regarding Project Progress / Issues
- Monitoring / Data Collection on Social and Gender Component
- Refinement of NPIWC-II web site
- Data collection of interventions in MIS/GIS database
- Refinement of dashboard of Project Interventions
- Data collection of interventions in MIS/GIS database
- Implementation of MIS Dashboard
- Case Study on the Intervention

Chapter-5: Non availability of Technical Sanctions of the watercourses required for baseline survey. 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 activites of the assignment.

Table: -ES.1: Compliance Status of 3rd Quarterly Tentative Work Plan

No.	Activities Planned for the Reporting Quarter		Status
1	Pre-field Activities:		
1.1	Training of Field Staff	Complied	
2	Field Activities:		
2.1	Data collection from OFWM Department/NWMC for Baseline survey/regular monitoring	Complied/continued for current year	
2.2	Training Session of field staff and Key staff on Survey Manual of MTs and Android Base System	Complied	
2.3	Determinants of Sample size at District/Tehsil levels with the assistance from ADA/DDA (OFWM)	Complied/continued for current year	
2.4	Baseline survey field visit	Phase-I Complied	
2.5	Data entry, Data cleaning, Data processing & data Analysis	Complied for BLS Phase-I	
2.6	Regular Monitoring	Complied//continued for current quarter	
3	ICT Assignment:		
3.1	Development of web site of NPIWC-II	Complied	
3.2	Development of Android based Mobile Application	Complied	
3.3	Testing of Monitoring tools on Android based system	Complied	
3.4	Data collection of interventions in MIS/GIS database	Complied	
3.5	Designing of Dashboard of Project Interventions	Complied	
3.6	Implementation of Dashboard	AJK Dashboard Implemented, Others Zones' Implementation of GIS Integrated MIS Dashboard is Under Progress	
4	Coordination		
4.1	Meeting of DTLs with respective DTL of NWMC	Meetings conducted on regular basis	
5	Deliverables:		
5.1	Monthly Monitoring Report (MMR)	10 th MMR (OCT 2021) 11 th MMR (NOV 2021) 12 th MMR (DEC 2021)	Submitted Submitted To be submitted on Stipulated time
5.2	Quarterly Monitoring & Evaluation Report (QM&ER)	QM&ER (JUL-SEPT 2021) QM&ER (OCT-DEC 2021)	Submitted To be submitted on Stipulated time
5.3	Baseline Survey Report Ph-1 (Final Draft)	Submitted	
5.4	Special Reports: Working Paper on Technology and Methodology for Implementation of Android Based Field Progress Data Collection and GIS Based Progress Monitoring Analytical Dashboard	Submitted	
5.5	Project Administration Manual (PAM)	Submitted	

CHAPTER-1: INTRODUCTION

1.1 PROJECT PROFILE

Project Name	National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)
Project Areas	Punjab, KP, Balochistan, Gilgit Baltistan, Azad Jammu & Kashmir, and Islamabad Capital Territory (ICT)
Sponsoring Agency	Ministry of National Food Security & Research
Executing Agencies (EAs)	<ol style="list-style-type: none"> 1. Federal Project Management Unit (FPMU), 2. DGA OFWM Punjab 3. DGA OFWM KP 4. DGA OFWM Balochistan 5. Director Irrigation and Small Dams, AJK 6. Director WM, GB 7. Director Agriculture Extension Services (AES) ICT
Project Period	5 Year (2019-2024)
Total Project Cost	154,542.355 million (Umbrella PC-1, including Sindh)
ME&IE Consultancy Period	4 year
ME&IE Consultant:	JV of G3 Engineering Consultants (Pvt.) Ltd., EASE PAK Engineering services (Pvt.) Ltd., Centre for Social Research and Development (CSRD) and ADA Consultants Inc. Canada
ME&IE Consultant Mobilized	November 20, 2020

1.2 PROJECT DESCRIPTION

1.2.1 Project Development Objectives

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

1.2.2 Project Objectives – General & Quantitative

1) General Objectives:

The Project aims to replicate the success achieved during the NPIWC Phase-I and further improve the findings of the Project Impact Evaluation Study (PIES).

The broad objectives of the project are as under:

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

2) Quantitative Objectives:

The quantitative objectives of the Project are as under:

Project outputs

- 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.
- 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).
- Construction of 14,932 water storage tanks with 60% subsidy.
- Provision of 11,610 Laser Land Levelers at 50% cost sharing, with the expectation to save about 50% irrigation water for wheat and about 68% of irrigation water for paddy.

Project impacts

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

Project indirect benefits to industry/economic activities

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

Awareness support to farmers

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

1.2.3 Project Beneficiaries

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

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

1.2.4 Project Components

The NPIWC-II comprises four components.

C1: ORGANIZATION OF WATER USERS ASSOCIATIONS:

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

- i) Provide right of way for constructing watercourse,
- ii) Arrange skilled and unskilled labour required for reconstruction / maintenance of earthen water channel, installation of water control structures, and lining of critical reaches,
- iii) Procure construction materials for carrying out civil works,
- iv) Settle matters of disputes amongst the water users in respect of channel alignment, fixation of Naccas, distribution of work, etc.,

- v) Make alternate arrangements for conveyance of water during execution of improvement works,
- vi) Carry out civil works in accordance with standards and specifications under the supervision of OFWM field staff,
- vii) Regularly undertake O&M of improved watercourses after its construction.

C2: WATERCOURSE IMPROVEMENTS:

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

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

C3: CONSTRUCTION OF WATER STORAGE TANKS:

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

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

C4: PROVISION OF LASER LAND LEVELING UNITS:

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

1.2.5 Project Targets

Project aims at achieving the targets (Figure-1.1) for 5 years starting from year 2019-20 to 2023-24. The targets for each province/Zone (excluding Sindh) are given in below Figure-1.2.

Project Targets:

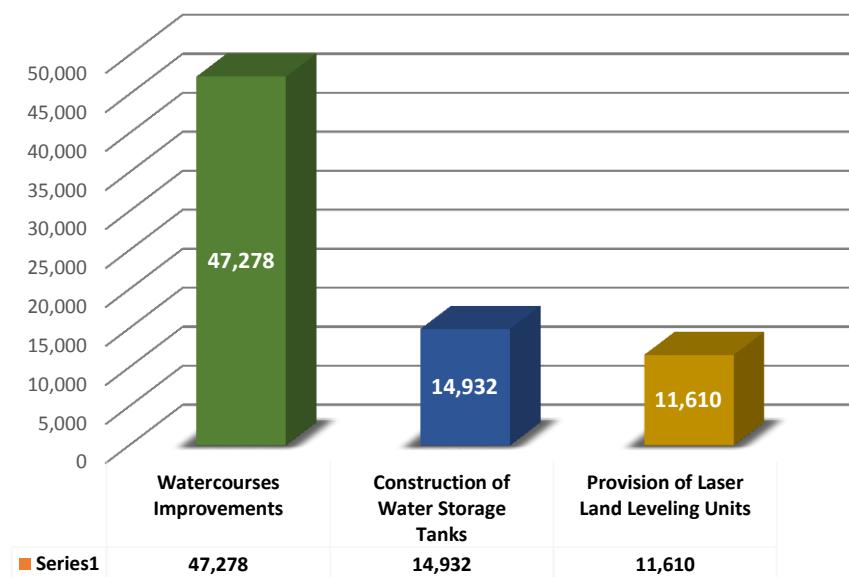


Figure-1.1: Pakistan Targets

Zonal Targets:

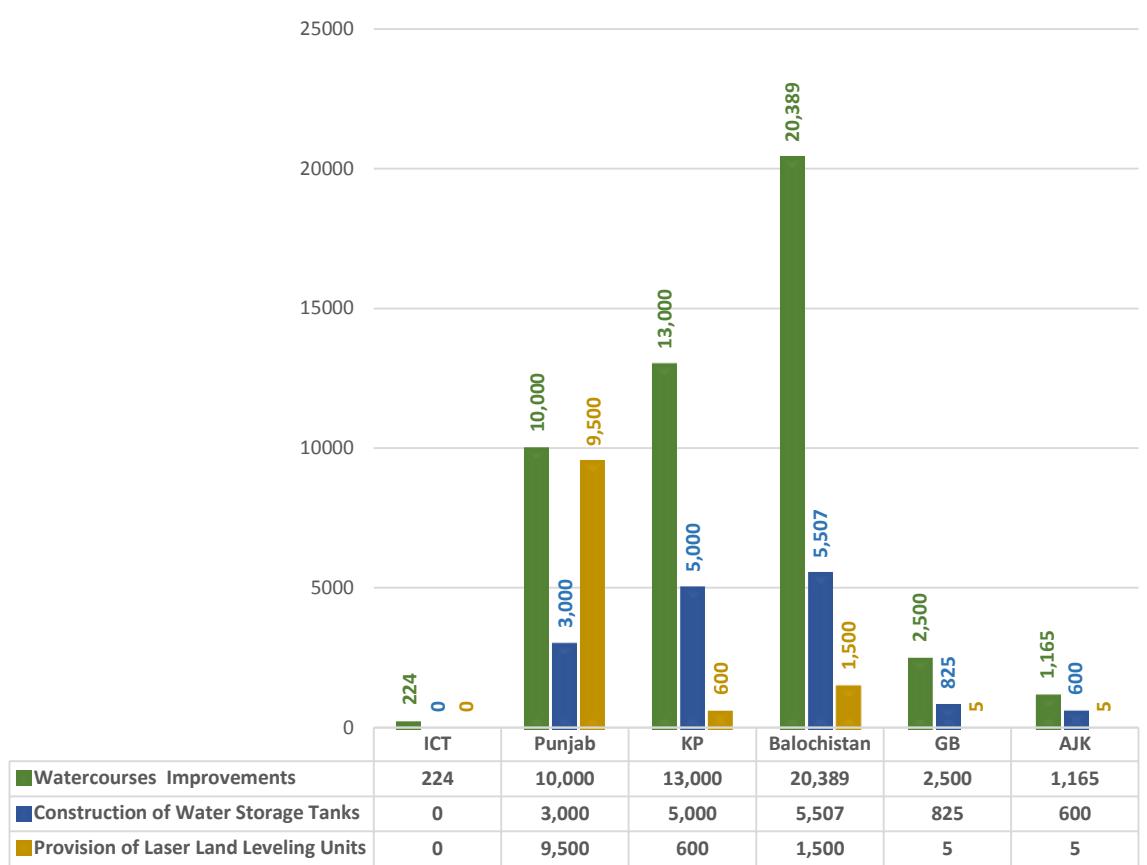


Figure-1.2: Zonal Targets

CHAPTER 2: SCOPE AND SERVICES OF ME&IE CONSULTANTS

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

2.1 OBJECTIVES

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

2.2 SCOPE OF THE SERVICES

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

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

water storage tanks and laser land Levelers,

- viii) Economic impact of project interventions,
- ix) Carry out the impact evaluation of the project intervention on the economy and stakeholders,
- x) Develop a website containing information on facilities and services, applications, procedures, watercourses, water storage tanks and laser Levelers database, etc. (while the project staff will maintain the website),
- 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 sample basis. Data will be collected by field teams on pre-designed data collection tools through an android application on TABs. Baseline and impact surveys will be carried out in phases as target watercourses are not preselected. Baseline will be carried out before the intervention and the impact one year (two crop seasons) after the completion of the intervention. The midterm study will review the project progress at middle of the project implementation The endline study will assess the impact of the project interventions.
2	Reporting	All core team members	<p>Following periodic reports will be prepared and submitted:</p> <ul style="list-style-type: none"> Draft Inception Report 45 days after the agreement, Final Inception Report one week after the issuance of comments by the client on the draft, Monthly Monitoring Report on 10th of following month, Quarterly Monitoring Report on 10th of the first month of the following quarter, Annual Monitoring and Evaluation Report during first month of the following year, Baseline Survey Reports (in three phases), First Phase Baseline Survey report will be submitted within the four months after the start of the assignment i.e., Submission of final inception report/Beginning of field activities. Impact Survey Reports (in phases) – two months after the data collection completion for the impact phase, Midline report in the middle of the assignment, Endline Report at the end of endline Survey, Draft Assignment completion Report at completion of the physical works, Final Assignment Completion Report at completion of works and financial transactions. It will also include the full economic benefit of the project (NPIWC-II) on agriculture sector as well as on the GDP of Pakistan, Special Reports, as and when asked by the client.
3	Water saving assessment	Irrigation Agronomist, Field Team/ Engineers	<p>Water Saving on Watercourses:</p> <ul style="list-style-type: none"> Water flow will be measured on sample watercourses selected for the baseline and impact surveys The flow will be measured at four points of the selected watercourses: close to water outlet, head reach, middle reach and tail reach. The measurements will be done through current meters.

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

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

2.4 FRAMEWORK AND RESULTS-BASED MONITORING (RBM) INDICATORS

The framework and Results-Based Monitoring (RBM) Indicators are identified in Table-2.2 of Inception Report. The indicators will be further enhanced and refined in consultation with the client as well as stakeholders.

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

CHAPTER 3: WORK PLAN OF THE CONSULTANTS FOR THIRD QUARTER

3.1 COMPLIANCE STATUS OF 3RD QUARTERLY TENTATIVE WORK PLAN

The compliance status is summarized below.

3.2 WORK PLAN-ACTIVITIES OF THIRD QUARTER

The ME&IE activities initiating during the fourth Quarter 2021 (October 1, 2021 to December 31, 2021) and their compliance status is summarized below. The Tentative Work Plan for the 1st Quarter of year 2022 (January 01, 2022 to March 31, 2022) is given as [Annex-A](#).

3.2.1 Pre-Field Activities

S#	Activities	Status
i	Training of Field Staff of all the Zonal Offices	Complied, Refer chapter 4 for detail:

3.2.2 Field Activities

S#	Activities	Status
i	Data collection from OFWM Department/NWMC for Baseline survey/regular monitoring	Complied, Refer chapter 4 for detail:
ii	Training Session of field staff and Key staff on Survey Manual of MTs and Android Base System	Complied, Refer chapter 4 for detail:
iii	Training of Measurement of water flow-Pygmy current meter	Complied, Refer chapter 4 for detail:
iv	Determinants of Sample size at District/Tehsil levels with the assistance from ADA/DDA (OFWM)	Complied, Refer chapter 4 for detail:
v	Baseline survey field visit	Complied, Refer chapter 4 for detail:
Vi	Data entry, Data cleaning, Data processing & data Analysis	Completed Refer chapter 4 for detail:
Vii	Regular Monitoring	Complied, Refer chapter 4 for detail:

3.2.3 ICT Assignment

S#	Assignment	Status
i	Development of web site of NPIWC-II	Complied Refer chapter 4 for detail:
ii	Development of Android based Mobile Application	Complied, Refer chapter 4 for detail:
iii	Testing of Monitoring tools on Android based system	Complied, Refer chapter 4 for detail:
iv	Data collection of interventions in MIS/GIS database	Complied, Refer chapter 4 for detail:
v	Designing of dashboard of Project Interventions	Complied, Implementation under process, Refer chapter 4 for detail:

3.2.4 Coordination

S#	Activities	Status
i	Meeting of DTLs with respective DTL of NWMC	Meetings conducted on regular basis

3.2.5 Deliverables

S#	Reports	Status
i	Monthly Monitoring Reports (MMRs) Oct & Nov 2021	Complied
ii	Monthly Monitoring Report (MMR) Dec 2021	To be submitted within stipulated time
iii	Quarterly Monitoring & Evaluation Report (QM&ER) Jul-Sept. 2021	Complied
iv	Quarterly Monitoring & Evaluation Report (QM&ER) Oct-Dec 2021	To be submitted within stipulated time
V	Baseline Survey Report (Ph-1)	Submitted

CHAPTER 4: ACTIVITIES DURING THE REPORTING QUARTER

4.1 INTRODUCTION

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

4.2 OBJECTIVE OF QM&ER

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

4.3 REPORTING QUARTER

This current Quarterly Monitoring & Evaluation Report (QM&ER) covers the period from 01 July 2021 to 30 September 2021.

The in hand Quarterly Monitoring & Evaluation Report (QM&ER) has been prepared by the participation of all core team of ME&IE Consultants NPIWC-II.

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.

During the reporting month Consultants carried out different field as well as in-house activities related to ME&IE. However higher management of consultants made some appointments/ replacements in the key positions of consultants.

APPOINTMENTS / REPLACEMENTS OF KEY POSITIONS

During the reporting month, higher management of ME&IE Consultants has made following replacements in key positions with the approval of Client.

- i. Dr. Usman Mustafa has been appointed as Team Leader/M&E Specialist for NPIWC-II Project w.e.f. October 8, 2021, while Dr. Muhammad Abdul Quddus has been appointed as Agricultural

Economist at National Office for NPIWC-II Project w.e.f. October 8, 2021. This change has been made with the approval of client vide NPC office Letter No. F, 1-8/2020-FPMU-(CV-M&E) dated October 7th, 2021.

- ii. Dr. Umar Farooq has been appointed as Deputy Team Leader National Officer after resign of Dr. Sawrar Zahid. Dr. Umar Farooq joined ME&IE consultants' team at National officer w.e.f. October 4, 2021, after approval from Client vide NPC office letter No. F.1-8/2020-FPMU-(CV-M&E) dated September 28, 2021.

4.4 REGULAR MONITORING OF INTERVENTIONS IN THE FIELD

The routine monitoring is containing a brief analysis of the results; calculating achievement rates and establishing trends, relevant findings that may help or constraint the future data collection activities in the established periods and, if appropriate, propose specific solutions assessing the advantages and disadvantages of each.

The regular monitoring assignments under NPIWC-II are comprised of input-output and process as defined in the Annual Work Plan / Budget and tracking of the outcomes indicators. Regular routine monitoring will look at the extent to which the proposed project activities are being implemented as planned.

Monitoring activities carried out by the ME&IE consultants during the reporting period are summarized below:

4.4.1 Regular Monitoring of Interventions in the Field - ICT Zone

ICT Zonal office remained engaged in different project activities including coordination with all Zonal Offices of ME&IE Consultants.

ICT Zone Field Team planned it Field Monitoring visit of Gilgit Baltistan project areas to collect as much data for Baseline as well monitoring point of view. The schedule was planned from 10th October 2021. It was envisaged that due to slow construction process of watercourses in hilly areas, a good baseline data could be collected. This visit was planned as a joint visit of Islamabad and KPK teams but due to bad weather conditions and blockage of roads, this visit was postponed.

As per data / information shared by Gilgit Baltistan Water Management Department, they have completed total 195 watercourses and 136 Water Storage Tanks till August 2021 under NPIWC-II program.

However, ICT field team coordinated with the Directorate of Water Management Islamabad for the collection of available data of completed watercourses. The available data was collected from files and entered in prescribed format by the IT team members. The data was later cleaned and provided to ICT Specialist for uploading to Live Dashboard of ICT.

ICT Zonal office ME&IE Experts also remained engaged in review and refinement in first baseline survey.

Team Leader Dr. Usman Mustafa conducted scheduled his monitoring visit of Gilgit Baltistan project areas, District Ghizer and Gilgit, from 20 October 2021 to 21 October 2021. Team Leader conducted his 2 days' field visit of GB jointly with Mr. Tahir Anwar National Program Coordinator (NPC) and his staff.

Following personnel participated in the visit.

1. Mr. Tahir Anwar, NPC
2. Mr. Ali Raza Naqvi, Irrigation Agronomist FPMU
3. Dr. Usman Mustafa Team Leader ME&IE Consultants NPIWC-II
4. Mr. Iftikhar Arian, DTL-NWMC
5. Adil Hussain Deputy Director OFWM & Irrigation Department District Ghizer
6. Naeem Abbas Assistant Engineer OFWM & Irrigation Department District Ghizer
7. Local Farmers

Team Leader visited project interventions in District Ghizer and Gilgit including watercourses and water storage tanks constructed under the project NPIWC-II.

Discussions were held with farmers' representatives and personnel of On Farm Water Management and Irrigation Departments of GB. Team Leader conducted discussions with department personnel and interviewed different farmers while visiting watercourses and water storage tanks. Farmers were asked to share their point of views regarding the program NPIWC-II and benefit they achieved through this program. Farmers shared their point of

views in terms of benefits received through this program and also expressed their further expectations.

Dr. Umar Farooq Deputy Team Leader ME&IE ICT Zone regularly tried to engage ME&IE consultants with On Farm Water Management Department for a close and regular coordination. However, due to unavoidable circumstances this meeting was carried out on 23rd November 2021.

During the month of November 2021 it was planned to cover Nine (9) schemes of ICT and collect maximum data for Baseline at ICT level. It was telephonically discussed with Water Management team on 10th November but again it was communicated from them that the field officer will not be available from 13 to 21 November 2021 and was suggested to shift the date from 23rd November onward for the field visits.

The ME&IE team visited the water management office on 23rd November and it was decided to visit one scheme of Mr. Raja Zaheer Ahmad to cover a case study.

Again it was told by DD that they are busy in selection of new schemes on ground as they have been given target of 13 watercourses for current quarter from NPC. He agreed to send Mr. Mubeen Ahmad Water Management Officer on 25th November with ME&IE Team for case study.

4.4.2 Regular Monitoring of Interventions in the Field Punjab Zone

Monitoring /Visit of various interventions, in the Field, is one of the important regular features of field teams. For the Baseline survey of the watercourse, measurement of water flow in the watercourse is the pre-requisite. In this regard DTL and the field team in-charge visited department of Irrigation and Drainage, University of Agriculture, Faisalabad to get the orientation and guidance for water flow measurement in a watercourse.

4.4.3 Regular Monitoring of Interventions in the Field KP - Zone

KP Zonal office remained engaged in different activities during the reporting period. Consultants conducted a number of meetings with client and field time was provided training of water flow measurement by pigmy meter.

Activities of ME&IE consultants KP Zonal remained confined to the collection of data from the Director General OFWM KP office for the Dashboard by the Manager ICT along with the field team members. Several meetings with Project Director Dr. Rab Nawaz were held regarding data collection process and also the draft schedule of trainings of KP OFWM district staff was shared with him to launch KP online Dashboard.

Data of all completed schemes of Watercourses and Water Storage Tanks for the year “2019-20 & 2020-21” were collected by ME&IE consultants from the files provided by all districts directors OFWM for “Online Dashboard”. During data collection of NPIWC-II, 8 team members of field were kept engaged in collection of data from the files provided by the Water Management Department KP and transferred to the computers in close coordination with ICT Expert Mr. Rizwan Saleem, Incharge of ICT Team.

Schemes’ files of all the districts except (D.I. Khan, Tank, Laki Marwat and South Waziristan) of KP were provided by Directorate of OFWM Peshawar to ME&IE consultants for data collection. For the collection of the data for the four missing districts a team of four members was deputed to D.I. Khan. The team stayed in D. I. Khan for six days for this task and collected data of 690 Schemes.

4.4.4 Regular Monitoring of Interventions in the Field - Balochistan Zone

During the reporting quarter Balochistan team has done several activities. The activities done by Balochistan Team briefly mentioned in this report as listed below:

- i. Updated Field Progress of Regular Monitoring / Spot Check accomplished by ME&IEC, Balochistan by December 2021.
- ii. Success Story.
- iii. Conducted Regular Monitoring / Spot Checking of F.Y. 2019-20 and F.Y. 2020-21.
- iv. Water Flow Measurement
- v. Attended a meeting with worthy Secretary, Agriculture Department, Govt. of Balochistan.
- vi. Meetings with OFWM officials and other stakeholders at Provincial Level.
- vii. Meetings with Deputy Directors / other Staff of OFWM at district level.

- viii. Visited Watercourses and Water Storage Tanks with NPC, FPMU, NPIWC-II.
- ix. Planning for Baseline Survey Phase-II of works (F.Y. 2021-22).
- x. Submission of Quarterly Field Plan for 1st Quarter (Jan. to Mar. 2022)

4.4.4.1 Regular Monitoring / Spot Check, F.Y. 2020-21

The ME&IEC Balochistan started the field activities of Regular Monitoring / Spot Checking in the month of June 2021. In first phase, Field Teams monitored the schemes of F.Y. 2020-21. The ME&IEC visited 09 districts of Balochistan to monitor the sites of F.Y. 2020-21. The total targets of Watercourses were 141. As per sample size (5%), ME&EIC had to monitor 7 sites, however, field teams increased the sample size and monitored 11 sites instead of 7 to cover maximum watercourses and to get more authentic monitoring findings. The target of Water Storage Tanks was 603 and as per sampling size (5%) ME&IEC had to monitor 30 sites, currently ME&IEC has monitored 23 sites and rest of sites will be monitored in first quarter of Year 2022.

The updated detail of monitored Watercourses and Water Storage Tanks under F.Y. 2020-21 is as under:

Sr. #	Districts	WC	WST	Total
1	Killa Abdullah	1	1	2
2	Loralai	1	2	3
3	Killa Saifullah	2	1	3
4	Pishin	-	4	4
5	Quetta	-	6	6
6	Naseerabad	2	4	6
7	Sohbatpur	3	-	3
8	Mastung	1	2	3
9	Kalat	1	3	4
Total Monitored Sites		11	23	34
Total Targets		141	603	744
Sampling (5%)		7	30	37
Difference		4	- 7	- 3

4.4.4.2 Regular Monitoring / Spot Check, F.Y. 2019-20

In second phase ME&IEC monitored the sites of F.Y. 2019-20. The total target of Watercourses and Water Storage Tanks were 1891 and 411 respectively. As per sample size (5%), ME&IEC

had to monitor 95 Watercourses and 21 Water Storage Tanks. The ME&IEC monitored 37 Watercourses 18 Water Storage Tanks till to date. The rest of sites will be monitored in up coming months.

The detail of monitored sites of F.Y. 2019-20 is mentioned below:

Sr. #	Districts	WC	WST	Total
1	Jaffarabad	3	-	3
2	Naseerabad	7	-	7
3	Zhob	2	1	3
4	Sherani	2	2	4
5	Musa Khail	1	1	2
6	Duki	2	1	3
7	Noshki	2	1	3
8	Ziarat	2	1	3
9	Mastung	3	1	4
10	Kalat	3	1	4
11	Khuzdar	1	1	2
12	Pishin	2	1	3
13	Killa Abdullah	2	1	3
14	Quetta	3	1	4
15	Kachi	1	2	3
16	Sibi	1	3	4
Total Monitored Sites		37	18	55
Total Targets		1,891	411	2,302
Sampling (5%)		95	21	115
Difference		- 58	- 3	- 60

4.4.4.3 List of visited Districts

Balochistan province has 33 Districts. Quetta is the biggest district of Balochistan by population and Chagai is the largest district of Balochistan by area. Ziarat is smallest district by area and Harnai is smallest district by population of Balochistan. The Names of all districts of Balochistan are Awaran, Barkhan, Chagai, Dera Bugti, Duki, Gwadar, Harnai, Jafarabad, Jhal Magsi, Kachhi / Bolan, Kalat, Kech, Kharan, Khuzdar, Killa Abdullah, Kohlu, Lasbela, Loralai, Mastung, Musakhel, Naseerabad, Nushki,

Panjgur, Pishin, Qilla Saifullah, Quetta, Shaheed Sikandarabad, Sherani, Sibi, Sohbatpur, Washuk, Zhob and Ziarat.

The ME&IE Consultants, Balochistan has monitored the Watercourses and Water Storage Tanks of 19 districts by covering 54% of Balochistan till to date.

The list of visited districts is as under:

Sr. #	Name of Districts Visited
1	Duki
2	Jaffarabad
3	Kachi
4	Kalat
5	Khuzdar
6	Killa Abdullah
7	Killa Saifullah
8	Loralai
9	Mastung
10	Musa Khail
11	Naseerabad
12	Noshki
13	Pishin
14	Quetta
15	Sherani
16	Sohbatpur
17	Sibbi
18	Zhob
19	Ziarat

4.5 DATA COLLECTION OF THE INTERVENTIONS IN THE FIELD

ME&IE Consultants of all the Zonal offices remained engaged in different field activities as well as in-house project activities during the reporting month. Detail of field monitoring / data collections is given below.

4.5.1 Regular Monitoring of Interventions in the Field - ICT Zone

ICT Zone Field Team planned its Field Monitoring visit of Gilgit Baltistan project areas to collect as much data for Baseline as well monitoring point of view. The schedule was planned from 10th October 2021. But due to bad weather conditions and blockage of roads, this visit was postponed. However some data was shared by Gilgit Baltistan Water Management Department. As per data

received from GB WMD, they have completed total 195 watercourses and 136 Water Storage Tanks till August 2021 under NPIW-II program. ICT ME&IE experts coordinated with the Directorate of Water Management Islamabad for the collection of available data of completed watercourses.

During the month of December 2021 field activities remained almost suspended in the ICT Zone due to various gaps identified in the first draft of Baseline report. Moreover, the Interviewing schedules were also significantly revised. The provincial DTLs were engaged in revising/improving the interviewing schedules. A number of gaps were identified. Dr. Umar Farooq is intended to arrange/conduct an online meeting/ workshop to finalize the interviewing schedule for future use as these shall be used on new constructions of water courses and the structures.

4.5.2 Regular Monitoring of Interventions in the Field –Punjab Zone

DTL and one of the concerned field team in-charge visited department of Irrigation and Drainage, University of Agriculture, Faisalabad to get the orientation and guidance for water flow measurement in a watercourse. The relevant authority demonstrated the procedure of water flow measurement and also provided some relevant literature on it.

Later on, the field teams practiced the measurement of water flow at the spot in the field as per procedure learnt. The detailed of this exercise is given below.

Methodology used for Water Flow Measurement:

Equipment Used: Pygmy Current Meter

Working principle:

- Current meter Measures Velocity (V)
- Direct / By counting revolutions per unit time
- Area of Segments (A)
- $Q = A \times V$

Segmental Area:

- Measure top width of water / channel
- Measure bottom width of channel
- Divide width in segments (each segment area = 10% of total area)
- Record width of each segment
- Mark distance from initial point for each segment

- Take average depth of water in each segment
- Measure velocities at 0.2 & 0.8 if depth >60 cm
- Measure velocities in center of each segment
- Find average velocity by counting pings/table $V = 0.123 N + 0.007N = \text{Revolutions}/\text{Second}$
- Calculate Q of each segment by $Q = A \times V$
- Add Q of all segments for total discharge

Specifications:

Model 1205

Flow Velocity – feet per second (meter per second)

- Minimum .25fps (.075mps)
- Maximum 3 fps (.914 mps)

Weight – Pounds (kilograms) .25 lb (.11kg)
Suspension Means - Wading Rod

Field Observations:

With the help of above cited formula, water flow was measured at different spots within the range of 100m. It was a good of exercise for the learning field monitoring team. This exercise was carried out at on Water Course No 18575–CR. Observations made during this exercise are as under:

Sr. No	Design Discharge (Cusec)	Actual Discharge Measured (Cusec)
1	3	2.71
2	3	2.68
3	3	2.68

Average Discharge = 2.69 Cusics

Following field team members participated in the exercise of water flow measurement at water course no 18575–CR Raiwind Lahore.

Name	Designation
Muhammad Rizwan Suleman	Field Team In charge /ME&IE Expert
Muhammad Zubair	Field Team In charge /ME&IE Expert
Syed Ali Haider	Field Team Engineer /ME&IE Expert



Field Team taking Water Flow Measurement at
Watercourse No. 18575-CR Raiwind Lahore

The brief profile of watercourse is given as under:

Category of Watercourse	Additional
W.C No.	18575 – CR
Name of Chairman	Haji Rehmat
Cell No	0300 – 9440436
Village/chak/Moza	Rakh Jud Uddin
Union Council	Paji
Minor	Judu
National Assembly	NA- 136
Provincial Assembly	PP – 172
Location	Tail
New Lining	1345 Meter
Total Land (Haji Rehmat)	37.5 Acre
Crops Grown During Rabi and Kharif	<p>Kharif 2021</p> Rice – 27.5 Acre Kharif Fodder/Maize and Super Nepra Grass - 10 Acre
	<p>Rabi 2021 - 22</p> Wheat – 27.5 Acre Rabi Fodder - 10 Acre

Farmers Comments

According to the chairman of the Water User Association farmers getting benefits of improvement of the watercourse as under.

- Farmer was happy because before the improvement of watercourse huge amount of water wasted in the field. As a result of improvement of watercourse (additional Lining) the farmer is getting adequate water supply.
- Now the farmer is Cultivating 100% area under Kharif and Rabi crops. Prior to it he was unable to do so. Being at the tail is too happy with such improvement.

As a result of close coordination of field team members with field staff of the OFWM department, the basic data of target of various interventions for the year 2021 – 22 are summarized as under:

Zones	Reg ular	Additi onal	Sub Total	WST	LLL
Subzone-1	147	675	822	162	11 00
Subzone-2	151	305	456	71	30 5
Subzone-3	82	240	322	45	30 5
Rawalpindi Division	-	-	-	222	-

The Basic data /targets of each sub-zone were collected by telephonic conversation with OFWM Department which is being processed at zonal office Punjab for the coming phases of baseline survey phase – II. The detail of interventions on each subzone is given in tables below.

Target of Various Interventions during 2021-22 In Subzone – 1

Division	District	WC Targets		Sub Total	WST	LLL
		Regular	Additional			
Faisalabad	Faisalabad	0	75	75	30	125
	Jhang	8	75	83	18	130
	Chiniot	25	55	80	8	70
	T.T.Singh	0	75	75	50	90
Total		33	280	313	106	415
Sahiwal	Sahiwal	17	70	87	8	110
	Pakpattan	22	65	87	12	110
	Okara	25	60	85	10	120
Total		64	195	259	30	340

Lahore	Lahore	5	45	50	5	55
	Sheikhupura	20	50	70	5	110
	Nankana Sahib	15	45	60	5	70
	Kasur	10	60	70	11	110
	Total	50	200	250	26	345
Total Sub Zone 1		147	675	822	162	1100

Target of Various Interventions during 2021-22
Subzone – 2

Division	District	Watercourse (No.)		Sub Total	WST	LLL
		Regular	Additional			
Gujranwala	Gujranwala	35	60	95	6	110
	Hafizabad	25	60	85	10	90
	Narowal	25	60	85	9	75
	Sialkot	35	60	95	6	90
	M. B. Din	35	60	95	3	80
	Gujrat	25	60	85	18	65
Total		180	360	540	52	510
Sargodha	Sargodha	40	80	120	27	85
	Khushab	40	65	105	27	70
	Bhakkar	40	80	120	10	85
	Mianwali	31	80	111	7	65

Target of Various Interventions during 2021-22
Subzone – 3

Division	District	Regular	Additional	Sub Total	WST	LLL
Bahawal pur	Bahawalpur	23	55	78	49	150
	R. Y Khan	27	80	107	79	150
	Bahawalnagar	15	55	70	65	150
Total		65	190	255	193	450
D. G. Khan	D. G. Khan	25	60	85	32	90
	Muzaffargarh	20	60	80	8	90
	Layyah	10	50	60	8	90
	Rajanpur	20	60	80	7	60
Total		75	230	305	55	330
Multan	Multan	22	60	82	13	65
	Khanewal	22	60	82	11	90
	Vehari	20	60	80	12	90
	Lodhran	18	60	78	9	60
Total		82	240	322	45	305

District Wise Target Water Storage Tank targets in Rawalpindi Division during 2021-21

Sr. #	Division	District	Water Storage Tank/Ponds (No.)
1	Rawalpindi	Rawalpindi	57
2		Attock	53
3		Chakwal	86
4		Jhelum	26
Total: -			222

On 24 December 2021, Deputy Team Leader ME & IE Consultants Lahore Zone Mr. Muhammad Yousaf Bhatti visited a watercourse improvement intervention along with the following officials of OFWM.

1. Dr. Kifayat Zaman D.G Federal Water Management Cell Ministry of food security Research, Islamabad
2. Dr. Maqsood Ahmed Director OFWM Training Institute, Lahore
3. Mr. Sami Ullah Khan Niazi Assistant Director (Agri) OFWM, Lahore City
4. Mr. Muhammad Sajjad Field Engineer, NWM Consultant, Lahore.
5. Mr. Shahzad Aamir Supervisor, ADA Lahore Cantt office, Lahore



D.G Federal Water Management Cell along with others visiting the site of the watercourse



DG Federal Water Management Cell Inspecting Work of Water Course Improvement

The profile of the watercourse improvement visited is given in table 4.2.2 as under:

Table 4.2.2: Brief Profile of the Watercourses Visited on 24-12-2021

Watercourse	2560/L
Location / Village	Ghowind
Tehsil	Lahore Cantt
District	Lahore
Name of Distributary / Minor	Jamman Minor
Quality of underground water	Saline
Naccas to be installed	30
Culverts to be installed	22
Culverts to be Installed	
Watercourse Type	Additional
No of Beneficiaries	19
Area served	450 Acres
Total Length of Watercourse	5220 Meters
Lining Length	1097 Meters
Status	ICR – II



D.G Federal Water Management Cell, Enquiring about the quality of work from NWMC Field Engineer

Mr. Kifayat Ullah Federal D.G Water Management cell asked various questions about execution of the water course improvement to the relevant person. He also visited/checked the improvement/execution of the watercourse at various spots. He has shown his satisfaction with the overall performance of all concerned.

Then a detailed discussion was also held among all the visitors (beneficiaries) about the impact of the watercourse improvement. It was also noted with concern that water is reaching towards the end of the watercourse. Its flow has increased significantly

and the yield of the main crops is likely to be increased in the tail area. There are only two main crops Wheat and Rice whereas commercial crops like fodder, vegetables are grown on nominal acreage. The main reason described by the farmers for not growing the commercial crops was the shortage of labor. The village is situated in a suburban area of Lahore.

4.5.3 Regular Monitoring of Interventions in the Field –KP Zone

Regular Monitoring activities of KP Zone comparative remained very slow during the reporting quarter, however experts remained engaged in other activities related to ME&IE. On October 6, 2021, KP Zonal office conducted training of field staff on water flow measurement of a watercourse. DTL KP Zone organized this training in collaboration with AGES consultants.

Following personnel participated in this training.

1. Mr. Matloob Hussain, Field Team Members
2. Dr. Humayun Khan, DTL KP Zone
3. Engineer Zubair shah AGES Consultants Field Team Members
4. Engineer Zubair shah, AGES Consultants
5. Engineer Rehmat shah, Field Team Members

Engineer Zubair shah explained the method of water flow measurement of different flows i.e., low, medium, and high-level. He explained the application of pigmy meter for measuring the water flow. By taking the hypothetical measurements the water flow was calculated with the help of formulas. Participants practiced calculation of water flow; LPS by applying mathematical formulas.

With the company of two resource persons participants visited a watercourse nearby the university town and carried out physical demonstration of water flow measurement by Pigmy Current Meter. This exercise was performed by the participants under the supervision of the Engineers Zubair Shah and Engineer Rehmat Shah from AGES Consultants.



DTL KP Zone introducing Engineer Zubair Shah for providing training on Water Flow Measurement to Field Team.



Engineer Zubair Shah from AGESC providing Training to Field Team of KP Zone



During Training Field Team Engineers performing water flow measurement by pigmy meter on a watercourse

During the reporting quarter all the three field teams of KP Zone were fully engaged in digging out of Physical and Financial data of the WCs and water

storage tanks from the files provided by the office of the Directorate of OFWM KP for the year 2019-2020 & 2020-2021 to the M&E consultants. The data collected from these files was handed over to ICT section to upload in the dashboard of the project online data management system.

Field teams also collected data from OFWM offices. The data for the four districts out 33, were not available in the DG WM KP, for that purpose a team of four persons were deputed to D. I. Khan District to collect the data personally from the files for the Dashboard. The team stayed in D. I. Khan for Six days for this task and collected data of 690 Schemes. Following team members collected data from D. I. Khan:

1. Mr. Fawad Ahmad ICT Manager
2. Mr Inamullah FTI
3. Mr. Mehmoodul Hasan FTI
4. Mr. Farhan Tayyab FTE
5. Mr. Zahid Driver

Overall data of 1704 completed water courses and 560 water storage tanks was collected and transferred to computers. Detail of the progress regarding the data collection of 32 districts of KP for dashboard is given as **Annex-M**

4.5.4 Regular Monitoring /Field Visits Details - Balochistan Zone

Detail of Field Activities carried out by Balochistan field teams during the reporting quarter is given below.

The Balochistan Field Team were comprised on 03 teams as listed below:

Team – 1

1. Mr. Tariq Khoso, M&E Expert
2. Mr. Saleem Abro, M&E Expert

Team – 2

1. Mr. Naseeb Jan, M&E Expert
2. Mr. Qaisar Tareen, M&E Officer

Team -3

1. Mr. Manzoor Kasi, M&E Expert
2. Mr. Hamza Qureshi, M&E Officer
3. Ms. Mahgul Baloch, M&E Officer

4.5.4.1 Field Visits detail of Regular Monitoring / Spot Checking - Balochistan Zone

1. Field Visit Date – 28th Oct, 2021

Scheme:	Watercourse
Name of Farmer:	Abdul Qudus
Name of village:	Abdul Samad Lehri
Union council:	Jhuder Shumali
Chairman WUA:	Abdul Qudus
District:	Naseerabad
Tehsil	Dera Murad Jamali
Coordinates	N: 28.495753 E: 68.2143128
Source of irrigation:	Canal
Total length of watercourse:	410.6 Meters
Estimated length of lining:	350 Meters
Command area of watercourse:	80 Acres
No of beneficiaries:	6
Starting date:	Not available
Year of construction:	2019-20
Cost of Construction of WC:	2,825,815/=
Quality of Work	Satisfactory. However, in some places back filling was not proper.
IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	5 Acre cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	No
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Farmer said that Water Saving Increased and Conveyance loss

	<p>decreased 50%</p> <ul style="list-style-type: none"> Increased cropping of vegetables. Medi station and Soil and water testing center should be provided. Facing difficulties due to electricity shortage. There are almost 16-20 hours load Shedding in this area
General Observations	<ul style="list-style-type: none"> Overall farmer was happy and thankful on Government initiatives
Bottlenecks	<ul style="list-style-type: none"> The completed file of scheme was not available with staff of OFWM.



Mearing length of WC Abdul Qudos.

2. Field Visit Date – 28th October, 2021

Scheme:	Watercourse
Name of Farmer:	Sanaullah

Name of village:	Abdul Majeed Lehri
Union council:	Jhuder Shumali
Chairman WUA:	Sanaullah
District:	Naseerabad
Tehsil	Dera Murad Jamali
Coordinates	N: 29.4829823 E: 67.6360474
Source of irrigation:	Canal
Total length of watercourse:	438.5 Meters
Estimated length of lining:	368.0 Meters
Command area of watercourse:	350 Acres
No of beneficiaries:	6
Starting date:	N/A
Construction Year:	2019-20
Cost of Construction of WC:	2,825,815/=
Quality of Work	Not Satisfactory, Some cracks found in WC

IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	6 Acres cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	No
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Farmer said that Water Saving Increased and Conveyance loss decreased 50% Increased cropping of vegetables. Facing difficulties due to heavy load shading of 16-20 hours in a day.
General Observations	<ul style="list-style-type: none"> Overall farmer was happy and quite satisfied

Bottlenecks	<ul style="list-style-type: none"> The completed file of scheme was not available with OFWM staff.  <p>Dera murad jamali, Balochistan, Pakistan Unnamed Road, Nasirabad, Balochistan, Pakistan Lat 28.49625° Long 68.213367° 28/10/21 02:57 PM</p> 
	 <p><i>View of Farm, WC. In last pic crack are showing.</i></p>

3. Field Visit Date – 28th October, 2021

Scheme:	Watercourse
Name of Farmer:	Shafeeq Ahmed
Name of village:	Dirghee
Union council:	Dirghee
Chairman WUA:	Shafeeq Ahmed
District:	Sohbat Pur
Tehsil	Sohbat Pur
Coordinates	N: 29.4829227 E: 67.6360169
Source of irrigation:	Canal
Total length of	404.0 Meters

watercourse:	
Estimated length of lining:	377.9 Meters
Command area of watercourse:	20 Acres
No of beneficiaries:	6
Starting date:	Not available
Construction date:	2019,20
Cost of Construction of WC:	2,825,815
Quality of Work	Satisfactory,
IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	2 Acre cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	No
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Water Saving Increased and Conveyance loss decreased 40% Increased cropping 10%
General Observations	<ul style="list-style-type: none"> Farmer were demoing that 10 years old WC may also be considered for new schemes.





4. Field Visit Date – 28th October, 2021

Scheme:	Watercourse
Name of Farmer:	Ghulam Haider
Name of village:	Ghulam Haider
Union council:	Ghuri
Chairman WUA:	Ghulam Haider
District:	Sohbat Pur
Tehsil	Faridabad
Coordinates	N: 28.4776396 E: 68.4561469
Source of irrigation:	Canal
Total length of watercourse:	540.0 Meters
Estimated length of lining:	357.3 Meters
Command area of watercourse:	350 Acres
No of beneficiaries:	6
Starting date:	N/A
Construction Year:	2019-20
Cost of Construction of WC:	2,825,815/=
Quality of Work	Not satisfactory
IMPACT:	
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	6 Acres cultivated land increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries'	No



5. Field Visit Date – 25th October, 2021

Scheme	Water Storage Tank
Farmer Name	Saleh Muhammad
Name of village:	Qasiabad
Union council:	Kechi Baig
Chairman WUA:	Saleh Muhammad
District:	Quetta
Tehsil	Chiltan
Coordinates	N: 30.07338 E: 66.95636
Source of irrigation:	Tube Well

Type of Construction of water storage tank:	Brick Masonry
Shape of Water storage tank	Square
Size of water storage tank:	41x40.3 Ft.
Depth of WST:	4.8 Ft.
Command area of water storage tank:	30 Acres
No of beneficiaries:	1
Financial Year of Scheme	2020-2021
Quality of work	Not Satisfactory
IMPACT:	
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Not applicable, As source of water was Tube well, He was solo owner
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	Yes
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Found happy with government initiatives.
General Observations	<ul style="list-style-type: none"> Backfilling was not done of 3 sides of WST. Bricks used in the construction were of sub-standard. WST was not being cleaned properly due to which mud, fungi, shoppers, stones etc., were found.



Group photo with OFWM staff (above) and view of WST (below)

Scheme	Water Storage Tank
Farmer Name	Waseem Khan
Name of village:	Mustafabad
Union council:	Shadinzai
Chairman WUA:	Waseem Khan
District:	Quetta
Tehsil	Chiltan
Coordinates	N: 30.147504 E: 66.952871
Source of irrigation:	Tube Well
Type of Construction of water storage tank:	Brick Masonry
Shape of Water storage tank	Square
Size of water storage tank:	60x60 Ft.
Depth of WST:	4.7 Ft.
Command area of water storage tank:	20 Acres
No of beneficiaries:	1
Financial Year of Scheme	2020-2021
Quality of work	Not Satisfactory
IMPACT:	
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Not applicable, As source of water was Tube well, He was solo

	owner
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is pick up.	Yes
Overall feedback of Farmer / Beneficiary	Found satisfied due to benefits of the WST, but had complaint regarding quality of WST.
General Observations	<ul style="list-style-type: none"> A crack was found in one corner of WST, causing of seepage.
 	
	
<p><i>View of Crack in the wall of WST (above), Group photo with OFWM Staff at Site (below)</i></p>	

7. Field Visit Date – 24th November, 2021

Scheme:	Watercourse
Name of Farmer:	Muhammad Alim
Name of village:	Koshak
Union council:	Muani
Chairman WUA:	Muhammad Alim
District:	Mastung
Tehsil	Mastung
Coordinates	N 29.90216, E 66.82332
Source of irrigation:	Tube Well
The total length of the watercourse:	3051 rft.
Estimated length of lining:	2067 rft.
Command area of the watercourse:	67 Acres
No of beneficiaries:	01
Quality of Work	Good
Reduction in Water Logging and salinity	No water logging or salinity in that area
Cropping intensity increased	N/A
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries'	Not observed

production is picking up.	
Overall feedback of Farmer / Beneficiary	Very much satisfied
General Observations	<ul style="list-style-type: none"> • Farm was Well Maintained and planned. • Terrace structure farming was adopted by the farmer • The grape plants that were used were of improved variety. • The farm and variety of the plants were improved after the Provision of this Watercourse. • Varieties of grapes observed in this farm were: 1. Red Globe, 2. Thompson, 3. Black Crimson, 4. Shude Khani, 5. Aita.
	 
<p><i>Spot Checking and view of Terrace Structure Farming.</i></p>	

8. Field Visit Date – 27th November, 2021

Scheme:	Watercourse
Name of Farmer:	Muhammad Younus
Name of village:	Sira Bazal

Union council:	Kan Mehtarzai
Chairman WUA:	Muhammad Younus
District:	Killa Saifullah
Tehsil	Kan Mehtarzai
Coordinates	N 30.71417, E 67.49337
Source of irrigation:	Tube Well
Total length of watercourse:	2679.59 rft.
Estimated length of lining:	2427.94
Command area of watercourse:	12 Acres
No of beneficiaries:	1
Quality of Work	Good
Reduction in Water Logging and salinity	No water logging or salinity in that area
Cropping intensity increased	Increased about 5 Acres.
Crops yield increased	Increased about 7%.
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through the generation of employment.	Yes, the farmer hired 2 additional tenants after the provision of this WC
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is picking up.	Not observed
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> • Farmers requested that if more schemes like WC or PVC may be provided, this will

	<p>increase the culturable land, number of orchards and crops.</p> <ul style="list-style-type: none"> Conveyance time and water losses have been decreased by a significant amount.
General Observations	<ul style="list-style-type: none"> Farmers had problems due to non-availability of electricity.
	  <p><i>Measuring the watercourse and Group Photo with Farmer</i></p>

9. Field Visit Date – 27th November, 2021

Scheme:	Watercourse
Name of Farmer:	Mulla Sadiq
Name of village:	Kachhi Bagh
Union council:	Kan Mehtarzai
Chairman WUA:	Mulla Sadiq
District:	Killa Saifullah
Tehsil	Kan Mehtarzai
Coordinates	N 30.74587, E 67.52211
Source of irrigation:	Karez (underground

	source)
Total length of watercourse:	6805.58 rft.
Estimated length of lining:	2805 rft.
Command area of watercourse:	15 Acres.
No of beneficiaries:	1
Quality of Work	Good
Reduction in Water Logging and salinity	No water logging or salinity in that area
Cropping intensity increased	Increased about 3 acres.
Crops yield increased	Increased about 5 to 7%
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	The farmer hired 5 additional tenants after provision of this WC
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Farmer was requesting Additional lining for the WC in order to improve and increase the cropping pattern and CCA.
General Observations	<ul style="list-style-type: none"> This WC was community based and the no. of beneficiaries were 20, with each having a command area of 15-20 acres. The length of Katcha WC exceeds from 7000 rft. Additional lining for this Community based WC can increase the Production.



10. Field Visit Date – 26th Nov, 2021

Scheme:	Watercourse
Name of Farmer:	Murad Bux
Name of village:	Taj Mohammad Lehri
Union council:	Khoroos Wah
Chairman WUA:	Murad Bux
District:	Naseerabad
Tehsil	Tambo
Coordinates	N,28,43127467.977417 4 E,59912009825086.5.0
Source of irrigation:	Canal
Total length of watercourse:	152 Meters
Estimated length of lining:	409 Meters
Command area of watercourse:	50 Acres

No of beneficiaries:	8
Year of construction:	2019-20
Cost of Construction of WC:	863,878
Quality of Work	Bad
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	8 Acres Increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is picking up.	No
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Water saving increased and conveyance loss decreased in their land Increased cropping of vegetables. Medi station and Soil and water testing center should be provided. Facing difficulties due to electricity shortage. Almost 16-20 hours load Shedding in this area.
General Observations	<ul style="list-style-type: none"> Capacity building campaigns for Framers to be organized.

	<ul style="list-style-type: none"> Former should be asked to maintain WC properly as per agreement with the department. Cracks found in Watercourse Backfilling was done properly.
	
	
<p><i>View of cracks in Watercourse and measuring length of WC</i></p>	

11. Field Visit Date – 26th November 2021

Scheme:	Watercourse
Name of Farmer:	Naveed Ahmed
Name of village:	Taj Mohammad
Union council:	Kharos Wah
Chairman WUA:	Naveed Ahmed
District:	Naseerabad
Tehsil	Tamboo

Coordinates	N 28.4302506, E 67.9793146,
Source of irrigation:	Canal
Total length of watercourse:	350.0 Meters
Estimated length of lining:	410.0 Meters
Command area of watercourse:	70 Acres
No of beneficiaries:	7
Starting date:	N/A
Construction date:	2019-20
Cost of Construction of WC:	2,825,815
Quality of Work	Unsatisfactory
Reduction in Water Logging and salinity	No waterlogging or salinity in this area.
Cropping intensity increased	12 Acres increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is picking up.	No
Overall feedback of Farmer / Beneficiary	Satisfied with the benefits of WC
General Observations	<ul style="list-style-type: none"> Nakkas were not properly installed, due to this reason, farmers

	<ul style="list-style-type: none"> were using mud bags. The quality of plaster was not good Backfilling was not done properly. The farmer should be asked by the department to maintain the WC properly.
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View of mud bag used in Nakka.

12. Field Visit Date – 27th October, 2021

Scheme:	Watercourse
Name of Farmer:	Sheeraz Ali
Name of village:	Mohammad Ali
Union council:	Ghuri
Chairman WUA:	Sheraz Ali

District:	Sohbat Pur
Tehsil	Faridabad
Coordinates	N 28.4312874 E 67.9774174
Source of irrigation:	Canal
Total length of watercourse:	540.0 Meters
Estimated length of lining:	357.3 Meters
Command area of watercourse:	80 Acres
No of beneficiaries:	8
Starting date:	N/A
Construction Year:	2019-20
Cost of Construction of WC:	2,825,815
Quality of Work	Bad
Reduction in Water Logging and salinity	No waterlogging or salinity in this area.
Cropping intensity increased	10 Acres Increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is picking up.	No
Overall feedback of Farmer / Beneficiary	Happy with this intervention

General Observations	<ul style="list-style-type: none"> Watercourse was not properly maintained by the farmer due to which backfilling was missing in various points. Quality of the plaster was not good.
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Measuring the WC and view of backfilling not done properly and bad quality of plaster

13. Field Visit Date – 27th November, 2021

Scheme:	Watercourse
Name of Farmer:	Abdul Bari
Name of village:	Haji Dildar Khan
Union council:	Dirghi

Chairman WUA:	Abdul Bari
District:	Sohbat Pur
Tehsil	Sohbat Pur
Coordinates	N 28.5357993, E 68.4845778,
Source of irrigation:	Canal
Total length of watercourse:	370.5 Meters
Estimated length of lining:	603.0 Meters
Command area of watercourse:	90 Acres
No of beneficiaries:	11
Construction Year:	2019,20
Cost of Construction of WC:	2,825,815
Quality of Work	Satisfactory
Reduction in Water Logging and salinity	No waterlogging or salinity in this area.
Cropping intensity increased	14 Acres increased
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Cement industry, bricks Killen, Precast Structures Industry and other related industries' production is picking up.	No
Overall feedback of Farmer / Beneficiary	Happy and satisfied

General Observations	<ul style="list-style-type: none"> Backfilling was done properly Farmers should be asked to keep maintaining the WC properly.
	 <p><i>View of Monitoring Visit of Abdul Bari WC UC Dirghi Distt. Sohbatpur</i></p>

In the month of December, National Project Coordinator, FPMU, NPIWC-II visited the Balochistan from 11th to 16th December 2021 with his team. The NPC, PFMU, NPIWC-II and Director General, OFWM, Balochistan visited several Watercourses, PVC Pipes and Water Storage Tanks in different districts. The ME&IE Consultants also joined the NPC Team in all field visits.

The team visited 01 Watercourse (PVC Pipe) and 03 Water Storage Tanks in District Pishin. 01 Water Storage Tank was visited in Khanozai. 01 Watercourse (PVC Pipe) visited in District Mastung and 01 Water Storage Tanks visited in District Kalat.

01 Water Storage Tank and 01 Watercourse (PVC Pipe) visited in District Ziarat.

The detail of site visits is as under:

Field Visits detail – District Pishin and Kanozai

Visited by Mr. Tahir Anwar, NPC, PFMU, NPIWC-II, Mr. Ali Raza Jamali, DG, OFWMC, Balochistan. Mr. Abdul Wahab, Director, Water Management, Agriculture Department, Balochistan Mr. Saif-ul-Islam, DPC, NPIWC-II. Mr. Asif Kakar, Deputy Coordinator. Dr. Tahmina Iqbal, Deputy Director. Mr. Abdul

Wali, DD, Technical, OFWM, Balochistan. Dr. Ali Raza, Team Leader, NWMC, Islamabad. Mr. Khalid Mehmood, Deputy Team Leader, NWMC, Balochistan. Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Mr. Naseeb Jan, M&E Expert, ME&IE Consultants and Concerned Deputy Director and OFWM Staff.

14. Field Visit Date: 12th Dec. 2021

Scheme:	Water Storage Tank
Name of Farmer:	Ahmed Khan
Name of village:	Ahmed Khan
Union council:	Bostan
Chairman WUA:	Ahmed khan
District:	Pishin
Tehsil	Bostan
Source of irrigation:	Tub well
Size of WST:	40X40
Command area of watercourse:	30 Acres
Cultivated Area	20 Acres
No of beneficiaries:	08
Financial Year	2020-21
Cropping intensity increased	Yes
Crops yield increased	Yes
Poverty reduction through generation of employment.	Yes
General Observation	<ul style="list-style-type: none"> Cultivation of vegetables increased. Farming activities are being affected owing to heavy load shading of 16-20 hours in a day. farmer was satisfied by this tank as before this intervention he had no source to store the water due to this reason his cultivation was suffering badly. Mr. Tahir Anwar, NPC/Federal DG, National Programme met with farmer and

	<p>community personals and said that FPMU, NPIWC-II will extend its full support to provide best possible facilities to the farmer.</p> 
	 <p>The NPC, FPMU-NPIWC-II and DG, OFWM, Balochistan discussing with farmer (Above), Group photo with NPC, FPMU-NPIWC-II and DG, OFWM, Balochistan (Below).</p>

15. Field Visit Date – 12th December 2021

Scheme:	Water Storage Tank
Name of Farmer:	Khan Muhammad
Name of village:	Nighanda
Union council:	Balozai
Chairman WUA:	Khan muhammad
District:	Pishin
Tehsil	Karezat
Source of irrigation:	Tube well
Size of WST	60x60
Total Command Area	20 Acres
Cultivated Area	12 Acres
Financial Year	2020-21
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water	Yes

disputes/thefts	
Poverty reduction through generation of employment.	Yes
General Observations	<ul style="list-style-type: none"> Cultivated area increased by this intervention. farmer was happy and satisfied with the scheme.

16. Field Visit Date: 12th December 2021

Scheme:	Watercourse "PVC Pipe"
Name of Farmer:	Muhammad Khan
Name of village:	Nighanda
Union council:	Balozai
Chairman WUA:	Khan Muhammad
District:	Pishin
Tehsil	Karezat
Source of irrigation:	Tube well
Total length of PVC Pipe:	2000 RFT
Cultivated Area	15 Acres
No of beneficiaries:	05
Financial Year	2019-20
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
General Observations	<ul style="list-style-type: none"> Cultivated area increased by this intervention. Water Losses reduced 80%



Field visit of WC (PVC Pipe) Muhammad khan district Pishin

18. Field Visit Date – 12th December 2021

Scheme:	Water Storage Tank
Name of Farmer:	Abdul Wajid
Name of village:	Khanozai
Union council:	Balozai
Chairman WUA:	Abdul Wajid
District:	Pishin
Tehsil	Karezat
Source of irrigation:	Tube well
Size of WST	60x60
Total Command Area:	20 Acres
Cultivated Area:	12 Acres
Financial Year	2020-21
Cropping intensity increased	Yes
Crops yield increased	Yes
Poverty reduction through generation of employment.	Yes
General Observations	<ul style="list-style-type: none"> Farmer was not available at site. The NPC, FPMU and DPC, NPIWC-II gave some advice/suggestion to improve the scheme.



View of WST and Command Area of Abdul Wajid, District Pishin.



View of Command Area of Farhan Zaib WC, District Pishin.

Field Visits detail – District Mastung and Kalat

Visited by Mr. Tahir Anwar, NPC, PFMU, NPIWC-II, Mr. Ali Raza Jamali, DG, OFWMC, Balochitan. Mr. Abdul Wahab, Director, Water Management, Agriculture Department, Balochistan Mr. Saif-ul-Islam, DPC, NPIWC-II. Mr. Asif Kakar, Deputy Coordinator. Dr. Tahmina Iqbal, Deputy Director. Mr. Abdul Wali, DD, Technical, OFWM, Balochistan. Dr. Ali Raza, Team Leader, NWMC, Islamabad. Mr.

Khalid Mehmood, Deputy Team Leader, NWMC, Balochistan. Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Mr. Tariq Khoso, M&E Expert, ME&IE Consultants and Concerned Deputy Director and OFWM Staff.

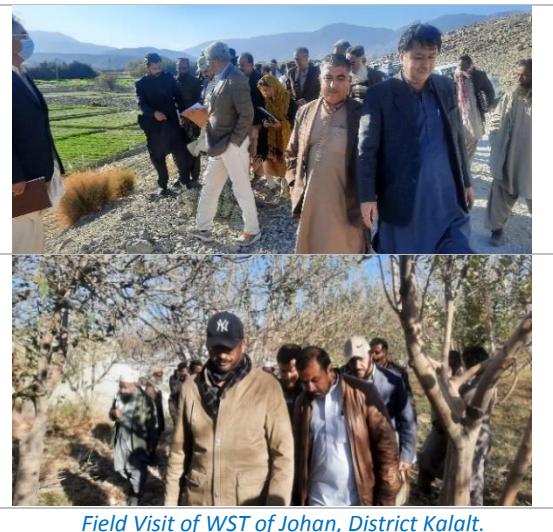
19. Field Visit Date – 13th Dec, 2021

Scheme:	Water Storage Tank
Name of Farmer:	Din Muhammad
Name of village:	Johan
Union council:	Johan
Chairman WUA:	Din Muhammad
District:	Kalat
Tehsil	Mungochar
Source of irrigation:	Tub well
Size of WST:	50x50
Command Area:	50 Acres
No of beneficiaries:	08
Financial Year	2019-20
Reduction in Water Logging and salinity	No Waterlogging or salinity in this area.
Cropping intensity increased	Yes
Crops yield increased	Yes
Poverty reduction through generation of employment.	Yes
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Water saving increased and Conveyance loss decreased Increased cropping of vegetables. Facing difficulties due to electricity shortage. Almost 16-20 hours load Shedding.

General Observations

- Johan is in remote area of District Kalat. There is no pakka road, it is about 40 KM away from National Highway.
- The NPC, FPMU and his team appreciate to DG, OFWM, Balochistan and DD, OFWM, Kalat on site selection keeping in view farmer's need which ease to cultivate and produce the better yield of crops.
- The farmers and community peoples were very much happy and satisfied with intervention of NPIWC-II, now they are able to cultivate, wheat, barley, almond and apricot sufficiently.
- Mr. Tahir Anwar, NPC/Federal DG, National Programme met with farmer and community personals and said that FPMU, NPIWC-II will extend its full support to provide best possible facilities to the farmer.





Field Visit of WST of Johan, District Kalalt.



Field visit of WC (PVC Pipe) Yasir Arfat, District Mastung

Field Visits detail – District Ziarat and Khanozai

Visited by Mr. Tahir Anwar, NPC, PFMU, NPIWC-II, Mr. Ali Raza Jamali, DG, OFWMC, Balochitan. Mr. Abdul Wahab, Director, Water Management, Agriculture Department, Balochistan Mr. Saif-ul-Islam, DPC, NPIWC-II. Mr. Asif Kakar, Deputy Coordinator. Dr. Tahmina Iqbal, Deputy Director. Mr. Abdul Wali, DD, Technical, OFWM, Balochistan. Dr. Ali Raza, Team Leader, NWMC, Islamabad. Mr. Khalid Mehmood, Deputy Team Leader, NWMC, Balochistan. Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Mr. Saleem Abro, M&E Officer, ME&IE Consultants and Concerned Deputy Director and OFWM Staff.

21. Field Visit Date – 14th Dec, 2021

Scheme:	Water Storage Tank
Name of Farmer:	Haji Ameer Jan
Name of village:	Killi Maghzan, Werchom
Union council:	Zargi Spezindi
Chairman WUA:	Haji Ameer Jan
District:	Ziarat
Tehsil	Ziarat
Source of irrigation:	Tube well
Size of WST	60x60
Command area:	20 Acres
No of beneficiaries:	04

Financial Year	2019-20
Cropping intensity increased	Yes
Crops yield increased	Yes
Poverty reduction through generation of employment.	Yes
General Observations	<ul style="list-style-type: none"> The cultivated area increased through this intervention of NPIWC-II The NPC, FPMU and DPC, NPIWC-II gave some advice / suggestions to improve the scheme.
	

Water Storage Tank Haji Ameer Jan District Ziarat.

Command area of watercourse:	30 Acres
No of beneficiaries:	05
Financial Year	2019-20
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
General Observations	<ul style="list-style-type: none"> The cultivated area increased through this intervention of NPIWC-II The farmer was happy and demanding a WST through NPIWC-II. The NPC, FPMU and DPC, NPIWC-II gave some advice / suggestion to improve the scheme.



Field visit of WC (PVC Pipe) Saifullah, district Ziarat

Scheme:	Watercourse (PVC Pipe)
Name of Farmer:	Saifullah
Name of village:	Kan Bangla
Union council:	Kach
Chairman WUA:	Saifullah
District:	Ziarat
Tehsil	Ziarat
Source of irrigation:	Tube well
Total length of PVC Pipe:	1000 rft

Table of Water Flow Measurement

Sr. #	District	Points	Location	Readings	Width (Inches)	Depth (Inches)	Total area	Velocity	Flow	Total Flow	Cusecs	Remarks
1	Dist: Naseerabad	Start (10 Meter away from Mogha)	Upper	14	30	4	120	0.36734	44.0808	189.7932	6.70174	-
			Mid	22	30	5	150	0.55942	83.9130			
			Lower	13	30	6	180	0.34333	61.7994			
	UC: Quba Sher Khan Sharqi	Mid (50% Lengh of WC)	Upper	5	30	5	150	0.15125	22.6875	128.0978	4.52323	-
			Mid	11	30	6.5	195	0.29531	57.5855			
			Lower	7	30	8	240	0.19927	47.8248			
	Village: Ejaz ahmed Bugti	End (75% Length of WC)	Upper	6	30	4	120	0.17526	21.0312	113.4414	4.0057	-
			Mid	12	30	5	150	0.31932	47.8980			
			Lower	9	30	6	180	0.24729	44.5122			
2	Dist: Sohbatpur	Start (10 Meter away from Mogha)	Upper	4	42	5	210	0.12724	26.7204	157.5021	5.56151	-
			Mid	9	42	8	336	0.24729	83.0894			
			Lower	3	42	11	462	0.10323	47.6923			
	UC: Faridabad	Mid (50% Lengh of WC)	Upper	7	42	5.5	231	0.19927	46.0314	157.3996	5.5579	-
			Mid	5	42	9	378	0.15125	57.1725			
			Lower	3	42	12.5	525	0.10323	54.1958			
	Village: Ghulam Haider	End (75% Length of WC)	Upper	5	42	6.5	273	0.15125	41.2913	265.0956	9.36072	Heavy slop in last point
			Mid	10	42	11	462	0.2713	125.3406			
			Lower	5	42	15.5	651	0.15125	98.4638			
3	Dist: Mastung	Start (10 Meter away from Mogha)	Upper				0	0.0312	0.0000	81.1266	2.86464	Water Level was not enough for 3 readings
			Mid	39	21	1	21	0.96759	20.3194			
			Lower	59	21	2	42	1.44779	60.8072			
	UC: Dasht	Mid (50% Lengh of WC)	Upper				0	0.0312	0.0000	44.3192	1.56494	Water Level was not enough for 3 readings
			Mid	20	21	1	21	0.5114	10.7394			
			Lower	32	21	2	42	0.79952	33.5798			
	Village: Mammani	End (75% Length of WC)	Upper				0	0.0312	0.0000	39.2771	1.3869	Water Level was not enough for 3 readings
			Mid	20	21	1	21	0.5114	10.7394			
			Lower	27	21	2	42	0.67947	28.5377			
4	Killa Saifullah	Start (10 Meter away from Mogha)	Upper				0	0.0312	0.0000	33.6661	1.18878	Water Level was not enough for 3 readings
			Mid	26	18	1	18	0.65546	11.7983			
			Lower	24	18	2	36	0.60744	21.8678			
	UC: Kan Mehtarzai	Mid (50% Lengh of WC)	Upper				0	0.0312	0.0000	31.0730	1.09721	Water Level was not enough for 3 readings
			Mid	24	18	1	18	0.60744	10.9339			
			Lower	22	18	2	36	0.55942	20.1391			
	Machhli Bagh	End (75% Length of WC)	Upper				0	0.0312	0.0000	24.8569	0.87772	Water Level was not enough for 3 readings
			Mid	17	17	1	17	0.43937	7.4693			
			Lower	20	17	2	34	0.5114	17.3876			

4.2.1.1 Planning for Baseline Survey (Phase-II)

F.Y. 2021-22

The ME&IE Consultants conducted Baseline Survey (Phase-I) in the month of June 2021. The main objective of this survey was to establish baseline levels of cropping intensities, crop yields, farm incomes and employment. Farmers' opinion was also taken about the level of water logging & salinity and time to irrigate one acre with canal / tube well water. This baseline values will help in the net impact of the intervention from impact survey data.

This baseline survey greatly supports project in efficient and effective planning, monitoring and evaluation of a project. Therefore ME&IE Consultants kept a close liaison with the client throughout the course of this assignment. The ME&IE Consultants approached the study by firstly apprehending in detail the project expectations from the baseline survey and making further smart

the following indicators that the survey intended to cover:

- Water conservation
- Agriculture productivity
- Change in cropping pattern,
- Increase in cropping intensity,
- Poverty alleviation,
- Livestock inventory,
- Waterlogging & Salinity
- Plantation
- Data of tube wells in Barani areas

The Balochistan field teams focused the targets of F.Y. 2020-21 in Baseline Survey (Phase-I). As per list given by OFWM, total targets of Watercourses were 141 and Water Storage Tanks were 603. The Balochistan Field Teams selected 09 districts out of 33 (27%). The Balochistan had two zones i.e., north and south, during first baseline survey 04 districts i.e Killa Abdullah, Loralai, Killa Saifullah and Pishin selected from North Zone and 04

districts selected from south zone i.e. Naseerabad, Sohbatput, Mastung and Kalat. The Quetta district included additionally considering as Head Quarter.

Now, the ME&IE Consultants, Balochistan has received the targets of F.Y. 2021-22. The targets given by the OFWM is consisting 296 Watercourse and 1026 Water Storage Tanks in 33 districts of Balochistan. At the current stage works tendering procedure is in progress, however, in some

districts tendering process has been completed and works has started. The ME&IE Consultants are planning to initiate the Baseline Survey (Phase-II) from 2nd week of December 2021. The ME&IE Consultants are in coordination with OFWM Department and NWMC regarding beneficiary data collection.

District-wise Targets of F.Y. 2021-22:

S#	Name of Districts	WATERCOURSES				WATER STORAGE TANKS				
		Barani	Canal	RCC Pipe	Total	60'	50'	40'	30'	Total
1	Kalat	7	0	0	7	18	24	17	0	59
2	Mastung	6	0	4	10	17	21	16	0	54
3	Khuzdar	6	0	0	6	18	22	17	1	58
4	Pishin	6	0	0	6	18	22	17	1	58
5	Loralai	7	0	0	7	18	23	17	1	59
6	Killa Saifullah	6	0	0	6	17	22	17	0	56
7	Killa Abdullah	7	0	0	7	19	24	17	0	60
8	Barkhan	3	0	0	3	12	15	12	0	39
9	Zhob	5	0	0	5	14	17	13	2	46
10	Kachhi	3	0	0	3	12	15	12	1	40
11	Lasbela	5	3	0	8	14	17	13	2	46
12	Kech	5	0	0	5	13	16	12	1	42
13	Panjgur	5	0	0	5	13	15	13	4	45
14	Awaran	5	0	0	5	14	11	13	1	39
15	Chagai	3	0	6	9	10	11	8	1	30
16	Nushki	3	0	6	9	10	11	8	1	30
17	Musa Khail	2	0	0	2	9	10	6	1	26
18	Quetta	3	0	0	3	9	11	8	2	30
19	Kohlu	3	0	0	3	9	11	8	1	29
20	Jhal Magsi	3	2	0	5	6	7	5	1	19
21	Kharan	1	0	1	2	3	5	5	1	14
22	Washuk	1	0	1	2	3	5	5	1	14
23	Surab	1	0	0	1	4	5	5	0	14
24	Duki	1	0	0	1	3	5	5	0	13
25	Sherani	1	0	0	1	3	5	5	2	15
26	Ziarat	0	0	0	0	3	4	2	2	11
27	Sibi	1	0	0	1	3	4	3	0	10
28	Harnai	1	0	0	1	3	4	3	2	12
29	Gwadar	1	0	0	1	3	4	3	0	10
30	Naseerabad	0	52	0	52	4	5	0	0	9
31	Jaffarabad	0	56	0	56	4	5	0	0	9
32	Sohbat Pur	0	54	0	54	0	2	0	0	2
33	Dera Bugti	4	4	2	10	9	11	8	0	28
Total		105	171	20	296	315	389	293	29	1,026

4.6 ONLINE DATA ENTRY IN ANDROID BASED APPLICATION

Data collection carried out through Android Based Application developed by ICT Specialist of ME&IE Consultants NPIWC-II.

Data entry is done directly by the field monitoring teams of all the zonal offices and is uploaded in the MIS system. The data is being observed and monitored by the ICT Expert of ME&IE Consultants.

4.7 MEETINGS OF ME&IE CONSULTANTS WITH STAKEHOLDERS REGARDING PROJECT PROGRESS / ISSUES

4.7.1 Meetings of ME&IE Consultants – ICT Zone

4.4.1.1 Team Leader ME&IE Consultants NPIWC-II Visit of GB Project Areas 20 October 2021 to 21 October 2021

Team Leader Dr. Usman Mustafa conducted 2 days' joint field visit of Gilgit Baltistan project areas along with Mr. Tahir Anwar National Program Coordinator (NPC), Mr. Ali Raza Naqvi (Irrigation Agronomist) Federal Water Management Cell, and Mr. Iftikhar Ali Arain DTL-NWMC.

Team Leader visited Watercourses and Water storage tanks constructed under the project NPIWC-II.

Discussions were held with farmers' representatives and personnel of On Farm Water Management and Irrigation Departments of GB. Team Leader conducted discussions with department personnel and interviewed different farmers while visiting watercourses and water storage tanks. Farmers were asked to share their point of views regarding the program NPIWC-II and benefit they achieved through this program. Farmers shared their point of views in terms of benefits received through this program and also expressed their further expectations.

Detail of Visit is as under:

1- Visit of District Ghizer: 20 October 2021

Team Leader along with NPC, Irrigation Agronomist, and DTL-NWMC visited watercourse of Mr. Muneeb Land owner.

Overall following personnel joined this visit.

1. Mr. Tahir Anwar, NPC
2. Mr. Ali Raza Naqvi, Irrigation Agronomist FPMU
3. Dr. Usman Mustafa Team Leader ME&IE Consultants NPIWC-II
4. Mr. Iftikhar Arain, DTL-NWMC
5. Adil Hussain Deputy Director OFWM & Irrigation Department District Ghizer
6. Naeem Abbas Assistant Engineer OFWM & Irrigation Department District Ghizer
7. Farmers

Adil Hussain Deputy Director OFWM, District Ghizer, Naeem Abbas Assistant Engineer District Ghizer and Farmers welcomed the NPC, Team Leader and participants of the visit.

Farmers thanked NPC and participating visiting the watercourse and listen the farmers' issues regarding the water availability for their lands.



NPC, TL, Irrig. Economist, DTL-NWMC, DD Ghizer & Asst Engr. Ghizer in discussion with Farmers



NPC, TL, Irrig. Economist, DTL-NWMC, DD Ghizer & Farmers at the during visit of Watercourse

NPC and the participants visited watercourses and listened the point of views of the farmers. On questioning farmer's point of view on availability of water before and after improvement of water course, farmer told that;

"Before improvement of watercourse we usually faced shortage of water for our agricultural land / crops. Most of the times we borrow water from each other to fulfill the water requirement for our crops. Before improvement there was also wastage of

water due to water logging and also took time to reach the lands. After improvement of watercourse we now have plenty of water and are irrigating our lands in a better way. Farmer said that they are very happy on this intervention of OFWM & Irrigation Department; they are thankful to the department on facilitating the farmers by improving the watercourses. Farmers requested NPC to give approval for the improvement of remaining portion of their watercourse so that that get sufficient water upto the tail of watercourse".



Farmer Giving Detail of Watercourse to NPC & Team Leader (Screen shot of Video Clip)

*Farmers Says; ab
hamain dosroon se
paniudar lene ki Zororat
nahi parti*



NPC & TL ME&IE Consultants with Farmers along with Irrigation Agronomist and DTL-NWMCip)



Team Leader ME&IEC Visiting under Construction Watercourse



Farmers with NPC & Team Leader visiting under Construction Watercourse

2- Visit of Gilgit: 21 October 2021

NPC, Team Leader, Irrigation Agronomist, and DTL-NWMC visited newly constructed watercourse along with farmers. NPC appreciated construction quality of watercourse and keen interest of farmers in improvement of watercourses under the project.



Figure 4. 1: Newly Constructed Watercourse



NPC Visiting Newly Constructed Watercourse



NPC, Team Leader and Irrigation Economist visiting Water Storage Tank also being used for Fisheries Development

NPC and Team Leader listened farmers issues and their satisfaction level on the intervention of improvement of watercourse under the NPIWC-II program.

Farmers expressed their satisfaction and told that they are now getting more water and for their crops. Farmers requested to carry out further improvements of watercourses to facilitate them. Farmers are not planning to improve cropping pattern and planting orchids.

On inquiring about some digging in the areas of water channels, the farmer replied that now he is intended to plant new orchard instead of field crops.

A watercourse was damaged due to land sliding. Farmer placed a plastic sheet on its damaged bed to receive water for his land which shows interest of farmers in availing water from the watercourse.



NPC, Team Leader and other participants with Farmers

Team Leader asked representative of farmers regarding their arrangements for maintenance of watercourse. He replied that each farmer is responsible to take care of watercourse falling within his land. He further added that if a farmer does not take care of watercourse falling in his land, we shall charge him a fine.



Farmers Says, if a Farmer doesn't take care of his watercourse we shall fine him

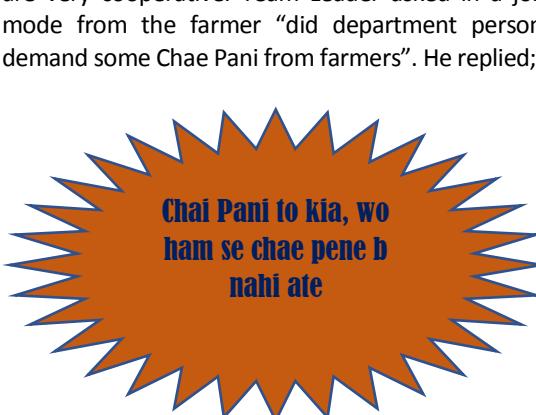
**Agar koi kisan apne hisse ke watercourse
ki safai aour dekh bhal nehi kare ga, ham
us ko jurman kare ga**



Team Leader in Discussion with Farmers (A Screen Shot of Video Clip with farmers)



Farmers says Department Personnel did Demand eve a cup of Tea from Farmers (Screen shot of a video Clip)



TL ME&IE Consultant Listening Farmers' Issues



NPC and TL ME&IE Consultants Listing to Farmers

3- Meeting with Director Water Management & Irrigation Department Mr. Sher Jehan

NPC, Team Leader, Irrig. Economist, and DTL-NWMC along with representative of the farmers met Director Water Management and Irrigation Department in his office and discussed the progress on NPIWC-II. NPC asked Mr. Sher Jehan Director WM & Irrigation to share his concern regarding the intervention of the NPIWC-II program.



NPC, Irrig. Economist, Team Leader ME&IEC and DTL-NWMC in Meeting with DD OFWM & Irrig. Department GB



NPC & TL ME&IEC Meeting with Secretary OFWM – NPC Presented Project Progress Report to Secretary

5- Interview to Media

Representative of media (PTV, and Newspaper) also met the NPC and Team Leader. Team Leader explained to media NPIWC-II project is a Project of Prime Minister of Pakistan for improvement of Agriculture in Pakistan. NPC told to media that this project will be very beneficial for the country and will bring a big revolution in the agriculture sector. He told that in five years 2500 water channels will be constructed with a cost of 5 billion Pak. Rs. Detail of Media Coverage is given as **Annex-K**.



NPC, Irrig. Economist, Team Leader ME&IEC, DTL-NWMC, and Farmers in Meeting with Director OFWM & Irrig. Department GB

4- Meeting with Secretary Water Management & Irrigation Department Mr. Ahsan Ali

NPC and Team Leader ME&IEC also met Secretary Water Management and Irrigation Department Gilgit Baltistan in his office and gave briefing to secretary on NPIWC-II program and future planning on the project.

NPC presented project progress report to Secretary. Secretary showed his satisfaction on the project interventions.

Date	9 th November 2021
Venue	Office of National Projects Coordinator G-7 Markaz, Islamabad
Participants	
1.	Mr. Muhammad Tahir Anwar, NPC (In Chair);
2.	Muhammad Naeem Akhtar DPC (WCKP);
3.	Mr. Saiful Islam, DPC, NPIWC-II;
4.	Ch. Saifullah Ijaz BOM ME&IE Consultants;
5.	Hafiz Abdul Rauf BOM ME&IE Consultants;
6.	Dr. Usman Mustafa, TL, ME&IE Consultant;
7.	Dr. Mansab Ali, Irrigation Agronomist, ME&IE Consultant;
8.	Mr. Afzal Hayat Khan, Social & Gender Specialist, ME&IE Consultant; and
9.	Mr. Rizwan Saleem, Incharge ICT Specialist, ME&IE Consultants.
Meeting Agenda:	
3rd Meeting of Project Board of Management (PBOM) of ME&IE Consultants under Projects Titled “NPIWC-II and WC-KP”	
The meeting was held to discuss the circulated	

agenda items under the National Project Coordinator Engr. Muhammad Tahir Anwar on 9th November, 2021.

It was a very good interaction of client and consultant, and, various technical, administrative and financial matters were discussed in detail and decisions were made for smooth functioning of the projects activities.

Date	23 rd November 2021
Venue	Water Management Department

Participants

1. Engr. Ghufran Dy Director Water Management
2. Mr. Mubeen, Water Management Officer
3. Dr. Umar Farooq, Dy Team Lead ME&IE Consultants
4. Muhammad Bilal, Field Team Incharge ME&IE Consultants

Meeting Agenda:

Meeting was conducted to discuss

- Sharing the Monitoring work plan
- Increase Coordination
- Continuous data sharing mechanism

It was first coordination meeting with Dy Director. ME&IE consultants' team introduced himself to Dy Director. Different topics were discussed related to the project including total target, achieved number, way forward to remaining targets, data sharing at TS stage, joint visit at different sites for case study preparation.

Dy Director extended his support for the smooth ME&IE activities of the consultants. However he requested the ME&IE consultants to contact his team members a little early before the visit, so they can manage their time accordingly and support the monitoring team for field activities. It was also discussed to manage things a little in-formal for a pace of work, it was agreed that next time ME&IE team will share their target through WhatsApp or call so time may not be wasted on coordination through letters. It was agreed by the Dy Director that very next day Mr. Mubeen will accompany the ME&IE team towards one of the Phulgaran site

Lahore
Participants
1. Mr. Hafiz Qaiser Yasin, Director Agriculture OFWM (H.Q) 2. Mr. Tahir Mehmood, Assistant Director Agriculture (Technical) 3. Dr. Muhammad Abdul Quddus, Agri Economist (ME&IE Specialist) 4. Mr. Muhammad Yousaf Bhatti, Deputy Team Leader (Punjab Zone) 5. Mr. Syed Shahzaib Gillani, Supporting Staff
*D. G Agriculture (OFWM) could not attend the meeting as he was engaged in other assignments.
Meeting Agenda:
1. Reviewed the progress of the project. 2. Extended request for the data required from OFWM field (DA, DDA, ADA) offices for implementation of MIS dashboard. The formats / templates for data required were handed over to the respective officers of OFWM.



Meeting held with DA & ADA in Directorate General (OFWM) Lahore

Date	November 30,2021
Venue	Office of Director Agriculture OFWM Training Institute OFWM Multan Road Thokhar Niaz Baig Lahore
Participants	
1. Aurangzeb Badar, Assistant Director Agriculture OFWM Lahore Cantt 2. 2. Samiullah Khan Niazi, Assistant Director Agriculture OFWM Lahore City 3. Shahid Khalil Rana, Field Engineer Technician	

4.7.2 Meetings of ME&IE Consultants – Punjab Zone

Date	November 03,2021
Venue	Office of the Directorate General of Agriculture (OFWM), Davis Road

ME&IE Consultants
4. Syed Ali Haider, Field Engineer Technician
ME&IE Consultants
5. Misbah u Rehman, Field Engineer Technician
ME&IE Consultants
Meeting Agenda:
1. Review of project progress in Lahore District
2. Collection of basic data of watercourses (2021-22) for baseline survey / monitoring purposes.



ME&IE Consultants after the meeting held with ADA Lahore city and Lahore Cantt.

4.1.1 Meetings of ME&IE Consultants – Punjab Zone

Date	December 23,2021
Venue	Directorate General of Agriculture (OFWM), Davis Road Lahore
Participants	
1) Mr. Kifayat Zaman Director General Federal Water Management Cell Ministry of National Food Security and Research Government of Pakistan, Islamabad.	
2) Malik Muhammad Akram Director General (AGRI) OFWM, Punjab Lahore.	
3) Mr. Hafiz Qaiser Yasin Director Agriculture	

OFWM (H.Q) Lahore.
4) Mr. Tahir Mehmood Assistant Director Agriculture (Technical) OFWM Lahore
5) Mr. Tariq Khan Deputy Team Leader NWMC, Lahore.
6) Muhammad Yousaf Bhatti Deputy Team Leader, ME & IE Consultants Punjab Zone Lahore
Meeting Agenda:
1. Review of OFWM, Activities in Punjab zone.
2. Briefing on NWM Consultants activities and ME & IE Consultants Punjab zone
3. Punjab Water Policy.



View of the Meeting held in D.G (AGRI) OFWM Lahore

Date	December 24,2021
Venue	Office of the Chief Strategic Planning and Reforms Unit (SPRU), Irrigation Secretariat Old Anarkali, Lahore
Participants	
1. Mr. Muhammad Aamir Khan Chief – SPRU, Irrigation Department, Lahore	
2. Dr. Muhammad Javed Director Social and Environment Management SPRU, Irrigation Department Lahore.	
3. Mr. Kifayat Zaman Director General Federal Management Cell Islamabad	
4. Dr. Maqsood Ahmed Director OFWM, Training Institute Lahore	
5. Muhammad Yousaf Bhatti Deputy Team Leader, ME & IE Consultants Punjab Zone, Lahore	
Meeting Agenda:	
1. Punjab Water Policy	
2. Availability of Surface and ground water.	
3. Pricing and usage of water.	



View Of Meeting held in office of Chief SPRU, Irrigation Department, Lahore

5. Economical use of expenses during field visits and reporting the expenses. Abdul Samee Manager Admin & Accounts
6. Mock exercise by the field teams on collection of data from various respondent in the field



Dr. Abdul Quddus (Agri) Economist describing objective/goal of the project with field teams



Mr. Abdul Samee Manager Admin & Accounts discussing Economical use of field expenses reporting to FTIs



Mr. Muhammad Yousaf Bhatti Deputy Team Leader, explaining the reviewed MTs to the Field Teams

4.1.2 In House Review Training Zonal Office Punjab

In House Review Training

During the period under review, the field activities remained limited. Intensive efforts were made towards in-house review training to the field teams on ongoing activities and activities to be carried over in the near future. The in-house review training pertained to the following aspects.

1. General objectives/goals of the projects and field operations by Dr. Muhammad Abdul Quddus Agri. Economist (National office).
2. Briefing / Explanation of reviewed Monitoring Tools. ----- by Muhammad Yousaf Bhatti Deputy Team Leader, Punjab Zone (Also reviewed Monitoring Tools were submitted to National Office, for further necessary)
3. Field plan/guideline including observations /collection of data on success story/ Case study, Tour notes ----- Muhammad Yousaf Bhatti Team Leader, Punjab Lahore
4. Case study on social and gender, particularly woman participation Guideline/data collection instructions as prepared by Ms. Muniza Tarar (Social & Gender Specialist. National Office) delivered to field teams

4.4.2 Meetings of ME&IE Consultants – KP Zone

Date	October 1, 2021
Venue	AGES Consultants' office 57-E, Canal Road Peshawar
Participants	
1.	Mr. Muhammad Nasir, Chief AGES Consultants
2.	Dr. Humayun, DTL KP Zone ME&IE consultants
3.	Mr. Mehmoodul Hasan, FTI ME&IE consultants Team

4. Mr. Inamullah FTI ME&IE consultants Team

Meeting Agenda/Points discussed:

Training of Field Team on Pigmy Meter for Water Flow Measurement

In continuation of the workshop held in August 30-31, and September 1, 2021, in National Office Islamabad, the DTL KP zone approached, Sardar Muhammad Zafar, Superintendent Engineer (S.E) Irrigation Department KP, for the deputation of an expert to act as resource person for water measurement training of the field teams of ME/IE consultants. As the Irrigation Department KP has engaged AGES Consultants for the same purpose, so S.E. requested Chief Consultant AGES to provide the same services to our survey teams. On the reference of SE, the DTL KP zone arranged a meeting with the Chief Consultant AGES and expressed interest in acquiring services of an engineer for training on water measurement of the Field Teams by Pigmy Current Meter. The matter was discussed in detail in a very cordial atmosphere and Mr. Muhammad Nasir, Chief of AGES Consultants promised to provide the engineer for said purpose. It was agreed that two Civil Engineers will be deputed on October 6, 2021 from the AGES consultants and they will impart training to the field teams.



Figure 4.2:Meeting of the DTL KP and FTIs with the Chief Consultants AGES

Date	October 12, 2021
Venue	Directorate of Water Management KP
1.	Participants Dr. Rabnawaz Khan, District Director OFWM Department, Provincial Coordinator NPIWC-II
2.	Mr. Fawad Ahmad, IT Manager ME/IE Consultants NPIWC-II
3.	Engineer Muhammad Jameel, OFWM Department KP
Meeting Agenda:	
Meeting of Mr. Fawad Ahmad IT Manager KP zonal office with Dr. Rabnawaz Khan, District Director/ Provincial Coordinator NPIWC-II to discuss Data Format	

The DTL KP Zonal office deputed Mr. Fawad Manager IT ME/IE Consultants NPIWC-II to Water Manager Department to discuss the data format we required for our field survey. The Officials of the Water Management Department agreed to facilitate the Field Survey Team in this regard.

Time	November 01, 2021
Venue	On Farm Water Management Office, Peshawar

Participants

1. Mr. Javid Iqbal, DG OFWM KP Peshawar
2. Dr. Humayun Khan, Deputy Team Leader (G3 Consultants)
3. Fawad Ahmad, ICT/Technology Specialist (G3 Consultants)

Meeting Agenda

Agenda of the meeting was data sharing of NPIWC-II of KP with ME&IE consultants. Meeting started with the general discussion regarding the ME&IE consultants' activities and progress made so far in this regard.

Following discussions held at the meeting.

The DTL KP Zone thanked the DG OFWM KP Mr. Javid Iqbal for his cooperation they extended and requested him for providing files of the schemes of WCs completed during the year 2021. The DG directed Dr. Rab Nawaz Khan, programme coordinator, to facilitate the process of providing relevant files to the M&E consultants.

Dr. Rab Nawaz provided files of completed WCs schemes of 15 districts mostly of central zone to the ME&IE consultants and requested to the District Directors of the remaining districts to provide the same in due course of time.

Meeting ended with a vote of thanks to DG OFWM KP Mr. Javid Iqbal.



Meeting of the DTL KP Zone with Mr. Javid Iqbal DG OFWM KP

Date	November 02, 2021
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Venue	On Farm Water Management Office, Peshawar
Participants	
1.	Dr. Rab Nawaz, Project Director OFWM Peshawar
2.	Dr. Humayun Khan, Deputy Team Leader (G3 Consultants)
3.	Fawad Ahmad, ICT/Technology Specialist (G3 Consultants)
Meeting Agenda	
Meeting started with the greeting note by Fawad Ahmad. Dr. Rab Nawaz welcomed M&E consultant.	
Following discussions held at the meeting.	
<ol style="list-style-type: none"> 1. Dr. Rab Nawaz shared the work plan of 2019-2020 & 2020-2021 (Physical and Financial) with M&E consultants. 2. As the work plan of 2021-2022 is not approved and is with steering committee for approval, so it will be shared after approval. 3. All the data files maintained from start of the project till date of each district will be provided to ME&IE consultants for data entry process. 4. Peshawar and near districts files will be provided to ME&IE consultants at Peshawar OFWM office while data of other far distanced districts will be covered by visiting one district and nearest districts will bring data to that district for ME&IE consultants for entry in the system. 5. Dr. Rab Nawaz told that they will ask Districts to include the financial payments' dates column and WUA registration number information in future. 	
Dr. Rab Nawaz told that his office will continue supporting the M&E consultants in providing the required data. Als.	
The meeting ended with a vote of thanks to Dr. Rab Nawaz.	



Meeting of the DTL KP Zone with Dr. Rab Nawaz, Project Coordinator OFWM KP

Date	November 26, 2021
Venue	Project Management Unit Office, 35 C/111 Gul Mahar Lane University Town Peshawar
Participants	
1.	Mr. Muhammad Afzal, Director PMU, Peshawar
2.	Mr. Javid Iqbal, DG OFWM KP Peshawar
3.	Mr. Yaseen Marwat, G Soil Conservation, Peshawar
4.	Nazir Abbas Banash, Director Agriculture Engineering, Peshawar
5.	Dr. Rab Nawaz, Project Director OFWM Peshawar
6.	Dr. Humayun Khan, Deputy Team Leader (G3 Consultants)
7.	Dr. Mansab Ali Khokhar, Irrigation Agronomist, Water Conservation Project Barai Areas
8.	Engr. Ilyas, DTL NESPAK, TPV consultants- NPIWC-II,
9.	Engr. Nasir, AGES Consultants, Peshawar, DG Agriculture Extension, Peshawar
10.	Mr. Fawad Ahmad, ICT/Technology Specialist (G3 Consultants)
Meeting Agenda	
10 th Joint Review meeting (JRM) of the projects under Prime Minister Agriculture Emergency Programme.	
Agenda of the meeting was to review the ongoing project in Agriculture sector in KP. The Project Management Unit called a general review meeting (JRM) in the PMU Office Peshawar that was schedule at 3.00 pm. Secretary Agriculture,	

Livestock, and Cooperative Department of KP was supposed to chair the meeting, but due to his other official engagements, he could not attend it. Mr. Afzal, Director PMU chaired the meeting.

Following discussions held at the meeting.

1. General discussions were made by the participants of the meeting about the ongoing projects activities taking place in agriculture sector in KP.
2. The DTL KP Zone briefly explained the ME&IE activities of Consultant on NPIWC-II in KP Zone.
3. Dr. Mansab Ali KhoKhar, Irrigation Agronomist, Water Conservation in Project Barani areas in KP distributed a pamphlet of a success story of intervention under the project.

Mr. Muhammad Afzal, Director PMU ended the meeting with a vote of thank.

Meeting Date	05 December 2021
Venue	On Farm Water Management Office, Peshawar
Participants	
1. Dr. Rab Nawaz Project Director OFWM Peshawar	
2. Dr. Humayun Khan, Deputy Team Leader (G3 Consultants)	
3. Fawad Ahmad, ICT/Technology Specialist (G3 Consultants)	
Meeting Agenda	
Agenda of the meeting was data sharing by department and progress till date	
Following discussions were held in the meeting	
1. This meeting was in continuation of our previous meetings held for the same purpose. The meeting was started with the greeting note by Fawad Ahmad. Mr. Dr. Rab Nawaz welcomed M&E consultant.	
2. Dr. Rab Nawaz was asked about the project activities progress and how they will share the data files of each district with M&E consultants.	
Following discussions held at the meeting.	
1. Dr. Rab Nawaz shared the Workplan of 2019-2020 & 2020-2021 (Physical and Financial) with M&E consultants.	
2. As the work plan of 2021-2022 is not approved and is with steering committee for approval, so it will be shared later on once approved.	
3. All the data files maintained from start of the project till date of each district will be provided	

to M&E consultants for data entry process.

4. Peshawar and near districts files will be provided to M&E consultants at Peshawar OFWM office.
5. Other far distanced districts will be covered by visiting one district and near districts will bring data to that district for M&E consultants for data entry.
6. Dr. Rab Nawaz told that they will ask Districts to include the financial payments dates column and WUA registration number information in future.

Dr. Rab Nawaz told that his office will support M&E consultants in providing data every time M&E consultants ask for data. Also, department will cooperate with M&E consultants regarding data sharing at every stage.



DTL KP Zone in meeting with Dr. Rab Nawaz, Project Coordinator OFWM KP

Date of Meeting	December 16, 2021
Venue	On Farm Water Management Office, Peshawar
Participants	
1. Dr. Rab Nawaz, Project Director OFWM Peshawar	
2. Dr. Humayun Khan, Deputy Team Leader (G3 Consultants)	
3. Fawad Ahmad, ICT/Technology Specialist (G3 Consultants)	
Agenda of the Meeting	
Agenda of meeting was data sharing by department and progress till date. This meeting was just a reminder of our previous meetings held for the same purpose. The meeting was started with the greeting note by Fawad Ahmad. Mr. Dr. Rab Nawaz welcomed M&E consultant.	
Dr. Rab Nawaz was asked about the project activities progress and how they will share the data files of each district with M&E consultants.	
Following discussions held at the meeting.	
• Dr. Rab Nawaz shared the Workplan of	

<p>2019-2020 & 2020-2021 (Physical and Financial) with M&E consultants.</p> <ul style="list-style-type: none"> • All the data files maintained from start of the project till date of each district will be provided to M&E consultants for data entry process. • Peshawar and near districts files will be provided to M&E consultants at Peshawar OFWM office. • Other far distanced districts will be covered by visiting one district and near districts will bring data to that district for M&E consultants for data entry. • Dr. Rab Nawaz told that they will ask Districts to include the financial payments' date column and WUA registration number information in future. <p>Dr. Rab Nawaz told that they have and will support M&E consultants in providing data every time M&E consultants ask for data. Also, department will cooperate with M&E consultants regarding data sharing at every stage.</p>
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Meeting Date	December 21, 2021
Venue	10 th Joint Review meeting (JRM) of the projects under Prime Minister Agriculture Emergency Programme

Participants	
1. Dr. Muhammad Israr, Secretary Agriculture, KP 2. Mr. Muhammad Afzal, Director PMU, Peshawar 3. Mr. Javid Iqbal, DG OFWM KP Peshawar 4. Mr. Yaseen Marwat, DG Soil Conservation, Peshawar 5. Nazir Abbas Bangash, Director Agriculture Engineering, Peshawar 6. Dr. Rab Nawaz, Project Director OFWM Peshawar 7. Dr. Humayun Khan, Deputy Team Leader (G3 Consultants) 8. Engg Ilyas, DTL NESPAK, TPV consultants- NPIWC-II 9. Engg Nasir, AGES Consultants, Peshawar 10. Fawad Ahmad, ICT/Technology Specialist (G3 Consultants)	

Agenda of the Meeting

Agenda of the meeting was to review the ongoing project in Agriculture sector in KP.

The Project Management Unit called a general review meeting (JRM) in the PMU Office Peshawar that was scheduled at 3.00 pm. Secretary Agriculture, Livestock, and Cooperative Department of KP chaired the meeting.

Following discussions held at the meeting.

- General discussions were made by the participants of the meeting about the ongoing projects activities taking place in agriculture sector in KP.
- All other participants also shared progress of their respective projects.

Dr. Muhammad Israr ended the meeting with a vote of thanks. The participants were served with a cup of tea at the end of the meeting.

Note: Minutes of the meeting have not been issued. When these are issued, will be shared by the participant



DTL KP Dr. Humayun Khan in 10th JRM of the projects under Prime Minister Agriculture Emergency Programme

Meeting Date	27 to 28 December 2021
Venue	ME/IE Consultants Zonal Office, Peshawar
Participants	Dr. Humayun Khan DTL zonal office Peshawar Mr. Naeem Akhter DPC National office Islamabad Mr. Afzal Hayat Gender Specialist BAWCP KP Fawad Ahmad ICT/Technology Specialist (G3 Consultants)

Agenda of the Meeting

It was a surprise visit of Mr. Naeem Akhter DNPC. However, there was no specific agenda of the meeting. This was just a surprise visit of the DPC. The DTL warmly welcomed the DPC.

Following discussions held at the meeting. In this meeting. In general progress on the project activities were discussed by the participants.



DTL KP Zone in meeting with DNPC in ME&IE Consultants
Zonal office KP

4.4.3 Meetings of ME&IE Consultants – Balochistan Zone

Date	5 th October 2021
Venue	Office of Director General, OFWM at Sariab Road, Quetta.
Participants	
1.	Mr. Ali Raza Jamali, Director General, Agriculture, OFWM, Balochistan, Quetta.
2.	Mr. Manzoor Kasi, FTI / M&E Expert, ME&IE Consultants.
Meeting Agenda/Points discussed:	
1.	The DG requested give necessary direction to concern staff regarding submission of complete data/beneficiary inventor of F.Y 2019-20 and FY 2020-21 as per provided formats which is required for Balochistan Dashboard.
2.	The issue of uncompleted files and issuance of TS were also discussed.
3.	The status of new schemes of F.Y. 2021-22 were also discussed.
4.	The FTI/M&E Expert briefed to DG about planning of monitoring visits regarding Baseline Phase-2.



Meeting with Ali Raza Jamali, Director General, Agriculture, OFWM, Balochistan, Quetta

Date	5 th October 2021
Venue	Office of Director General, OFWM at Sariab Road, Quetta.
Participants	
i.	Mr. Faqir Muhammad, Deputy Director, Agriculture, OFWM, Mastung.
ii.	Mr. Behram Mulghani, Agriculture Officer, OFWM, Quetta
iii.	Mr. Manzoor Kasi, FTI / M&E Expert, ME&IE Consultants.
Meeting Agenda/Points discussed:	
i.	The FTI/M&E Expert of ME&IE Consultants met with Mr. Behram Mulghani, Agriculture Officer, OFWM regarding collection the data/beneficiary inventory of F.Y 2019-20 and FY 2020-21.
ii.	The FTI/M&E Expert also met with Deputy Director, OFWM, Mastung to discuss the field progress.



Meeting of Mr. Manzoor Kasi, FTI / M&E Expert with Mr. Faqir Muhammad, DD, Mastung and Mr. Behram Mulghani, Agriculture Officer, Quetta

Date	5 th October 2021
Venue	Office of Director General, OFWM at Sariab Road, Quetta.
Participants	
i.	Mr. Muhammad Yahya Hasni, Deputy Director, Agriculture, OFWM, Kharan.
ii.	Mr. Manzoor Kasi, FTI / M&E Expert, ME&IE Consultants.
Meeting Agenda/Points discussed:	
i.	The FTI/M&E Expert of ME&IE Consultants met with Mr. Yahya Muhammad Hasni, DD, Kharan OFWM regarding collection the data/beneficiary inventory of F.Y 2019-20 and FY 2020-21.
ii.	The FTI/M&E Expert also met with Deputy Director, OFWM, Mastung to discuss the field progress.



Meeting of Mr. Manzoor Kasi, FTI / M&E Expert with Mr. Muhammad Yahya Hasni, DD, Kharan

Date	24 th November, 2021
Venue	Office of the DDA OFWM, Mastung.
Participants	
1.	DDA OFWM Mr. Faqir Muhammad
2.	Agriculture Officer Mr. Shamsuddin Baka
3.	Sub-Engineer Mr. Sher Ahmed
4.	NWMC Engineer Mr. Muhammad Ashraf
5.	Manzoor Ahmed Kasi, FTI/M&E Expert
6.	Mah Gul Noor, M&E Officer
7.	Hamza H. Qureshi, M&E Officer
Meeting Agenda/Points discussed:	
1.	Status of the Beneficiaries list for F.Y 2021-22.
2.	Status of work regarding the F.Y 2021-22.
3.	Filing of the schemes of F.Y 2019-2020.
4.	Farmers' Feedbacks regarding the schemes of NPIWC-II.
5.	Discussed the feedbacks of farmers related to provision of additional schemes.
6.	The share of farmer i.e., 25% is a burden on the farmers, as the farmers are already facing problems regarding electricity in the district.

Date	22 nd November, 2021
Venue	Office of the Director General, OFWM, Rani Bagh, Sariab Road, Quetta
Participants	
1.	Mr. Ali Raza Jamali, Director General, OFWM, Agriculture Department, GoB, Quetta.
2.	Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Quetta.
Meeting Agenda/Points discussed:	
1.	The DG, OFWM requested to provide the missing data of F.Y. 2019-20 and 2020-21 as earlier possible.
2.	The DTL, Balochistan briefed to DG, OFWM about OFWM Website it's importance and benefits.
3.	The DTL, Balochistan informed by DG, OFWM that works of F.Y. 2021-21 are in tendering process and in some districts works has been initiated.
4.	The OFWM officials assigned the task by DG, OFWM to provide the updated status of F.Y. 2020-21 to DTL, Balochistan.

Date	24 th November 2021
Venue	Office of the DDA OFWM, Mastung.
Participants	
1.	Mr. Faqir Muhammad, DDA OFWM
2.	Mr. Shamsuddin Baka, Agriculture Officer
3.	Mr. Sher Ahmed, Sub-Engineer
4.	Mr. Muhammad Ashraf, NWMC Engineer
5.	Mr. Manzoor Ahmed Kasi, FTI/M&E Expert
6.	Miss. Mah Gul Noor, M&E Officer
7.	Mr. Hamza H. Qureshi, M&E Officer
Meeting Agenda/Points discussed:	
1.	Status of the Beneficiaries list for F.Y 2021-22.
2.	Status of work regarding the F.Y 2021-22.
3.	Filing of the schemes of F.Y 2019-2020.
4.	Farmers' Feedbacks regarding the schemes of NPIWC-II.
5.	Discussed the feedbacks of farmers related to the provision of additional schemes.
6.	The share of farmers i.e., 25% is a burden on the farmers, as the farmers are already facing problems regarding electricity in the district.



Meeting of ME&IEC Team with Mr. Faqir Muhammad, Deputy Director, OFWM, Mr. Shams, Agriculture Officer, and Mr. Muhammad Ashraf, Site Engineer, NWMC at Deputy Director, OFWM Office at Matung.

Date	14 th December, 2021
Venue	Office of the worthy Secretary, Agriculture Department, Govt. of Balochistan, Civil Secretariate, Quetta.
Participants	
i.	Mr. Umaid Ali Khokhar, Secretary, Agriculture Department, Govt. of Balochistan, Quetta.
ii.	Mr. Tahir Anwar, NPC/Federal DG, National Programme.
iii.	Mr. Saif-ul-Islam, DPD, NPIWC-II
iv.	Mr. Asif Kakar, Deputy Coordinator, Enhancing Command Area in Barani Areas
v.	Dr. Tahmina Iqbal, Deputy Director
vi.	Mr. Ali Raza Jamali, DG, OFWMC, Balochitan
vii.	Mr. Abdul Wahab, Director, Water Management, Agriculture Department, Balochistan
viii.	Mr. Ihtisham, Section Officer, Agriculture Department, Govt. of Balochistan. Quetta.
ix.	Dr. Ali Raza, Team Leader, NWMC, Islamabad
x.	Mr. Khalid Mehmood, Deputy Team Leader, NWMC, Balochistan
xi.	Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Balochistan
xii.	Mr. Tariq Khoso, M&E Expert, ME&IE Consultants, Balochistan.
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> The Secretary, Agriculture Deptt, GoB, Balochistan briefed by NPC, FPMU-NPIWC-II about NPIWC-II activities and highlight the major interventions of the project. All participants shared project updates with Secretary and gave suggestions for further improvement Both Consultants of NPIWC-II shared updated progress of the project and role of consultants. 	

- The ME&IE Consultants appreciated the support and cooperation of DG, Balochistan and DDs of OFWM, Balochistan during field visits.
- The Secretary, Agriculture ensured to NPC, FPMU, NPIWC-II and Consultants about ample departmental support at all times.

Date	15th December, 2021
Venue	Office of the ME&IE Consultants, Chiltan Road, Cant, Quetta.
Participants	
i.	Mr. Tahir Anwar, NPC, FPMU, NPIWC-II
ii.	Mr. Saif-ul-Islam, DPD, NPIWC-II
iii.	Mr. Asif Kakar, Deputy Coordinator, Enhancing Command Area in Barani Areas
iv.	Dr. Tahmina Iqbal, Deputy Director
v.	Mr. Abdul Wali, Deputy Director, Technical, OFWM, Balochistan, Quetta
vi.	Mr. Yasir, Agriculture Officer, OFWM, Balochistan, Quetta.
vii.	Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Balochistan
All Field and Support Staff of ME&IE Consultants, Balochistan	
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> The NPC, FPMU, NPIWC-II visited the ME&IE Office and Guest House, Quetta. The DTL, Quetta shared updated progress with NPC, FPMU. The NPC, PFMU met with all ME&IEC staff and talked with them on their role and responsibilities. The NPC, PFMU and Deputy Project Coordinator, NPIWC-II checked different documents and record. They were provided different records/data by M&E Office on their desire. The meeting ended with vote of thanks from the NPC, PFMU. 	



Mr. Tahir Anwar NPC along with his team, Mr. Behram Mulghani, Agriculture Officer, OFWM, Quetta and ME&IE Consultants in meeting during of visit of NPC

Date	21 st December, 2021
Venue	Office of the Director General, OFWM, Rani Bagh, Sariab Road, Quetta

Participants

- i. Mr. Ali Raza Jamali, Director General, OFWM, Agriculture Department, GoB, Quetta.
- ii. Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Quetta.

Meeting Agenda/Points discussed:

- The DG, OFWM requested to provide the missing data of F.Y. 2019-20 and 2020-21 as earlier possible.
- The DTL, Balochistan requested to DG, OFWM to provide available beneficiary data of F.Y. 2020-21 so that Baseline Survey Phase-2 activities could be started as earliest possible.

Date	22 nd December, 2021
Venue	Office of the Director General, OFWM, Rani Bagh, Sariab Road, Quetta

Participants

- i. Mr. Ali Raza Jamali, Director General, OFWM, Agriculture Department, GoB, Quetta.
- ii. Mr. Rizwan Ahmed, Deputy Team Leader, ME&IE Consultants, Quetta.
- iii. Mr. Behram Mulghani, Agriculture Officer, OFWM, Quetta.

Meeting Agenda/Points discussed:

- The DG, OFWM advised to Mr. Behram, Agriculture Officer, OFWM to provide required data to ME&IE Consultants.
- Mr. Behram Mulghani, Agriculture Officer

provided Laser Land Leveler data to ME&IE Consultants.

Date	23 rd December, 2021
Venue	Office of the Director General, OFWM, Rani Bagh, Sariab Road, Quetta

Participants

- i. Mr. Behram Mulghani, Agriculture Officer, OFWM, Quetta.
- ii. Mr. Saleem Abro, M&E Officer, ME&IE Consultants, Quetta.

Meeting Agenda/Points discussed:

- M&E Officer, ME&IE Consultants met with Mr. Behram, Agriculture Officer, OFWM regarding data of F.Y. 2019-20, 2020-21 and 2021-22.
- Mr. Behram provided Laser Land Leveler data to M&E Consultants.



View of meeting with Mr. Behram Mulghani, Agriculture Officer, OFWM, Quetta.

4.8 INTERNAL MEETINGS OF ME&IE CONSULTANTS

4.8.1 Joint Meeting / Workshop in National Office Islamabad

Date	27th October 2021
Venue	National Office, ME&IE Consultants, Islamabad.
Participants	
i.	Dr. Usman Mustafa, Team Leader ME&IE Consultants NPIWC-II
ii.	Dr. Umar Farooq, DTL, Islamabad
iii.	Dr. Humayoun Khan, DTL, KPK
iv.	Muhammad Yousaf Bhatti, DTL, KPK
v.	Rizwan Ahmed, DTL, Balochistan
vi.	Prof. Dr. Muhammad Abdul Quddus Malik, Agriculture Economist ME&IE Consultant NPIWC-II
vii.	Dr. Mansab Ali, Irrigation Economist ME&IE

Consultants Water
viii. Muhammad Amjad Shakeel, Project & Documents Controller
Meeting Agenda/Points discussed:
After taking over charge of Team Leader Dr. Usman Mustafa conducted a Zoom Meeting with all the DTLs and other staff members of ME&IE Consultants, to discuss the project progress and issues being faced by the consultants.
<ol style="list-style-type: none"> i. The Team Leader, Dr. Usman Mustafa, welcomed all the participants and requested Dr. Humayoun Khan, DTL KP Zone for reciting few verses from the Holy Quran. After recitation of Holy Quran. Team Leader formally inaugurated the meeting and following discussions were held and decisions were made in the meeting. ii. Dr. Usman Mustafa introduced himself as new Team Leader of ME&IE Consultants. iii. Dr. Umar Farooq, DTL, Islamabad also introduced himself as new DTL and shared his past work experience iv. Financial issues were discussed v. Dr. Muhammad Abdul Quddus suggested that a mock exercise should be done on monitoring tools before starting 2nd phase of baseline survey. vi. Team Leader suggested that first of all the DTLs should review the MTs and give their suggestion for amendments / improvement and addition / deletion of any indicator and forward to Dr. Umar Farooq DTL National Office Islamabad. vii. Team Leader instructed that we have to take baseline of each water related developmental activity in the project areas. viii. Team Leader instructed that each zonal office must prepare at least one case study of intervention of their relevant zone every month and include in Monthly Monitoring Report. ix. Team Leader advised all the DTLs to make short video clips of discussions with farmers, prepare case studies of success stories of the project interventions by making flyers / broachers of case studies x. All the Zonal office must consider highlighting the economic aspects, gender aspects as well as social aspects of the project. xi. Team Leader said that a Project Manual is under preparation to facilitate all the zonal offices.

Participants
All Field Teams Members
Meeting Agenda:
To review and update on Monitoring tools and baseline Questionnaire.

Two Days training was organized by the field teams under the supervision of Mr. Muhammad Yousaf Bhatti (DTL Punjab) from 25-10-2021 to 26-10-2021. All field staff was given a mock exercise before going to field for better understanding of field environment. All this was carried out to minimize errors while uploading data through android base application ODK (Open Data Kit) and the interview with farmers. One person was a farmer and the other became an interviewer for questioning. This yielded a very positive result before field visit.



Review Training of Field at Punjab Zonal Office Lahore

4.8.2 Internal Meetings of Zonal Office Punjab

Date	22 October 2021
Venue	Punjab Zonal Office Lahore



Mock Exercise between Two Field Members

4.9 ICT ASSIGNMENT

4.9.1 Development of Website of NPIWC-II

The development of Website for NPIWC Phase-II was started by the month of February 2021. The following activities have been completed: -

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

Three number presentations delivered in Client office at various times. As per requirement / instructions of Client, revision/up-dation was made each time and the development of the Website has been completed in June 2021. The revision/up-dation of the Project website has been presented to NPC office and got approval on all changes. Currently all changes have been incorporated accordingly as per requirements of the Client.

The final Beta version was demonstrated to NPC in his office by August 2021 while the final version presented to NPC on 15 September 2021.

In compliance of the decision made during the 3rd PBOM meeting dated 9th November 2021, the project website was migrated to live server from demo and is currently publicly available on the following link:

<https://npiw2.org/>

The compliance of this milestone has been done.

4.9.2 Data collection of interventions in MIS/GIS database

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

- Now the data cleaning & validation is in process and this activity will be completed in the mid of January 2022, after that the data will be published into Dashboard and Dashboard implementation phase will start in KP Zone and implement in the end of January 2022 and the progress of Interventions will be live on the Dashboard.
- In KP Zone data collection from all 32 districts has been completed. Detail is given in Annex-M. The data collection for dashboard is in progress in the Balochistan zone as well, but more of the data provided/gathered here is incomplete. However, the situation is worst in Punjab, due to the non-provision of data from the OFWM department the implementation phase in Punjab Province has not started yet.

4.9.3 Designing of Dashboard of Project Interventions

This activity has been completed by the end of May 2021; earlier source code submitted to Client in CD form.

ME&IE Consultants rented in Cloud based web server on monthly basis in May 2021. Dashboard was uploaded to Cloud based server to make it live by the month of May 2021.

In June it was presented in NPC office, Login was shared with Client.

This milestone has been completely achieved.

4.9.4 Implementation of MIS Dashboard

The Dashboard has been implemented in AJK, and the progress of Interventions is live on the Dashboard application since the 4th of November 2021. Detail of this intervention is given in **Anex-F, G, H & I.** In ICT and KP Zones implementation phase of Dashboard is very near to being completed.

As defined in the submitted working paper of dashboard implementation on 26 Aug 2021, three stages were defined.

Stage-I - Digitize and Migrate the Data

- As ME&IE Consultants was not allowed for direct communication with any of Provincial departmental Head and NWMC, so that the data for dashboard supposed to receive through FPMU. Despite lot of communication for providing data on required format which was shared to FPMU, ME&IE Consultants did not receive positive response. To resolve the issue the Client arranged a joint meeting of ME&IE & Implementation consultants in the NPC office on 15th November 2021. In continuation of this meeting, a follow-up meeting was held in NWMC National Office Islamabad on 16th November 2021. The ICT Technology Specialist of ME&IE Consultants conveyed all requirements, along with the format on which the data was required, to NWMC Consultants. However, the data is still awaited to date from NWMC consultants after this meeting.
- Upon this bottleneck, ME&IE Consultants took initiative with the approval of NPC to digitize the field progress data of AJK, ICT and KP units, which was not defined in ME&IE TORs.
- However, ME&IE Consultants also completed the task in KP zone during the month of December 2021.
- On the completion of digitization of data, ME&IE process the preliminary data cleaning and validation.
- After cleaning and validation, ME&IE will submit the data to the concern PD for their review and comments.

- After receiving comments & suggestions the data will be update accordingly to the MIS database.

Stage II – Meetings with all Stakeholders and Shortlist the Nominations

- On the successful completion of Stage-I, ME&IEC will hold meetings with PD of KP and shortlist the nominations for data collection.

Stage III - Training and Capacity Building

- With the consultation of PD of AJK and under the approval of NPC, ME&IEC held capacity building workshop from 2nd to 4th of Nov 2021. The detail is given in **Annex-F, G, H & I.** An intensive 8-hour full day training workshop was held on first two days in Muzaffarabad. Small dams and irrigation department's nominated staff participated in the workshop. On the third day, there was dashboard presentation. The PD of AJK invited numerous Govt. officials to this event. In the end, Training Completion Certificates were distributed among those participants of the workshop who successfully complete the training. A sample training Certificate is given as **Annex-J**.
- For KP with the consultation of PD of KP and under the approval of NPC, ME&IEC will hold capacity building workshop in the third week of January 2022.

4.10 MONITORING / DATA COLLECTION ON SOCIAL AND GENDER COMPONENT

In this quarter social and gender specialist worked on the process of impact assessment discussions with teams were carried with teams structure of case studies were shared with the teams ..Impact assessments will be focused how programs affected the lives of poor and less marginalized this will cover social uplift, income growth asset building and reduction of vulnerability

Case studies will help in impact evaluation and this will help to improve or redesign an initiative so that benefits can be reaped. It will help client and consultants to measure effectiveness of the program activities and in judging the significant changes. The

data to be collected during case studies will help to improve and outreach communication will also improve. These case studies will help before and after real time situation and replicable model can be made. This analysis will be exploratory and results can clearly be explained.

Women authorization has become vibrant issue on the development program. Rank of irrigational activities in agricultural sector cannot be left out. Keeping in view the objectives of the NPIWC-II monitoring and evaluation consultancy services, it was anticipated to get a strong and vivid picture from field about women participation and empowerment in agricultural based activities through monitoring and evaluations.

To achieve the increased agricultural productivity and decrease poverty, women participation is very important as women play important role in building an enable environment for the wellbeing of their family and society.

CASE STUDIES

The case studies are intended to offer all stakeholders an opportunity to unpack and understand the role of gender differences in driving agriculture and effects of irrigational outcomes, how program impacted, identify, and whether the program also promotes gender equality and women's empowerment. The cases are not meant to be perfect examples of how gender differences are identified and managed, but are meant as a learning tool intended to:

1. Provide insight into specific areas where gender differences exist.
2. Showcase real programs that have intentionally worked to integrate a gender lens into their delivery, whether from the outset or as a course correction.
3. Examine challenges and emerging lessons about integrating gender across programming and policy.

Case studies consists of three phases.

1. The base line phase focuses on an assessment of local conditions and practices and builds relationships The assessment covers four areas:
 - program and policy environment;
 - current conditions and practices;
 - physical conditions; and

- social and cultural conditions

2. During the implementation phase staff and partners work with community members through a participatory approach for mapping the landscape of current practices. How the project activities impacting local lives social financially measuring the effects at midline.
3. Finally, in the post implantations phase, conduct follow-up household visits, attend community meetings, and share technical advice for maintaining and facilitate to ensure the communities remain after the program's completion.

Provincial teams will select sites for case studies, total 25 for each province during the period month Jan 2022 to June 2022. List of some sites selected in Punjab and Balochistan is given below.

Sustainable development goals targets are on the top of government agenda and this flagship program is directly helping to achieve the targets

The agriculture sector is well-placed to contribute to the Sustainable Development Goals (SDGs, also known as the “post-2015”

The broad objectives of the project are:

- Social mobilization through capacity building of WUAs/ FOs
- Minimization of conveyance and field application losses
- Reduction in water logging and salinity
- Equity in water distribution
- Reduction in water disputes/thefts/litigation
- Motivation/participation of farmers
- Poverty reduction through employment generation vu1.
- Increase in crops yield/sufficiency in food

All development programs are linked with SDGs. More than any other sector agriculture is the common thread which holds the 17sdgs together , investing in agriculture sector can address not only hunger and mal nutrition but also other challenges including poverty production and climate and

water . This program is directly contributing to achieve targets of government of Pakistan.

Agriculture activities directly link with the following sustainable development Goals and the target set by the government under each goal can be easily achieved and assisted by NPIWC II activities. List of the related SDGs are given below. Poverty analysis will be undertaken through case studies and focus group discussions to access the achievement of the program activities:

SGD 1 No Poverty

SGD 2 Zero Hunger

SGD 3 Good Health and Well Being

SGD 5 Gender Equality

SGD 6 Clean Water and Sanitation

SGD 7 Affordable and Clean Energy

SGD 8 Decent Work and Economic Growth

SGD 9 Industry, Innovation and Infrastructure

SGD 12 Responsible Consumption and Production

SGD 13 Climate action

SGD 17 Partnership for the Goals

Sites Selected for Case Study in Balochistan Zone

Site-1

Profile of Intervention

District	:	Naseerabad
Village	:	Haji Qamar Din
Union Council	:	Quba Sher Khan
Tehsil	:	Dera Murad Jamali
Scheme	:	Watercourse
Beneficiary Name	:	Munawar Ali
Source of Irrigation	:	Canal
Year	:	2020-21
	:	

Site-2

Profile of Intervention

District	:	Sohbatpur
Village	:	Muhammad Ali
Union Council	:	Ghuri
Tehsil	:	Fareedabad

Scheme	:	Watercourse
Beneficiary Name	:	Shehzad Ali
Source of Irrigation	:	Canal
Year	:	2020-21

Site-3

Profile of Intervention

District	:	Naseerabad
Village	:	Javaid Ahmed
Union Council	:	Chattar
Tehsil	:	Chattar
Scheme	:	Water Storage Tank
Beneficiary Name	:	Israr Ahmed
Source of Irrigation	:	Canal
Year	:	2020-21
	:	

Site-4

Profile of Intervention

District	:	Mastung
Village	:	Mammani
Union Council	:	Dasht
Tehsil	:	Mastung
Scheme	:	Watercourse
Beneficiary Name	:	Abdul Ghani
Source of Irrigation	:	Barani

4.5.1 Sites Selected for Case Studies in Punjab Zone

Site-1

Profile of Interventions

It is a well known universal truth that women have always been a driving factor behind the men for the long race for a progressive society. In this regard, a Pakistani woman with a verve ambition has joined hands with the OFWM department of Pakistan serving as Deputy Director agriculture stationed at Toba Tek Singh to form a progressive and advanced irrigation for the Pakistani farmer community.

Farhana Jamil	DDA T.T Singh
Contact No	0305- 5314270

Site-2

Profile of Intervention

Intervention	WST
District	Hafizabad
Name of Farmer	Nusrat Tahira
Area (Acre)	19 Acres
CNIC	34301-60284202

Contact No	0300-6522400
Tehsil	Hafizabad
Chak No	Kasokee

Intervention	WST
District	M.B. Din
Name of Farmer	Zubaida Bibi
Area (Acre)	9
CNIC	34403-02244268
Contact No	0345-5863647
Tehsil	Phalia
Chak No	Kadar Gharbi

Site-2

Profile of Intervention

Intervention	WUA
WC Name	26590 L
Address	Mozah Shadi Khan Munda, Kot Addu, Muzaffar Garh
WUA Chairman	Bashir Ahmed
Contact Number	0344-7044574
WC Type	Additional
Status of WC	ICR-1
Sanctioned Lining Length	1874 m
Total Length	3400 m
CCA	237 acres

A format for Case study has been devices and is attached as **Annex-E** to this Report.

4.5.2 Balochistan - Gender Role and Benefits:

The female family members are taking a lot of benefits through this intervention. The washing pads of Watercourses are being used for washing clothes. Before this intervention female family members use to do this activity away about 1.5 km from home by spending precious time. Now these female members have lot of convenience and time savings for family. The washing paid are also being used for washing vegetables, fruits, etc. by women at farm, before this activity it was conducted at their home, lot of time wasted to brought them from farm to home.

Farmer Feedback:

Mr. Shafiq, Farmer told to ME&IEC Team that before intervention this activity a lot of our land was uninhabited. Due to the mess of water, the crop was also weakened. It took a lot of time to irrigate the land and also a lot of time was wasted in cultivating the crop. At once Mr. Imdad, Deputy Director, OFWM surveyed our land and advised me to make a paved drain and inform me of its importance and usefulness.

I was not interested because of the huge amount of money then Mr. Imdad, DD assured us that 75% of the expenses were to be paid by the government, and the farmer was obliged to pay only 25%.



The ME&IEC Team Interviewing the Farmer

When I started irrigating the land for the first time after the completion of Pukka Watercourse, I was overjoyed. Water started irrigating the field without any hindrance.

I was amazed at the usefulness of the watercourse because I never thought I would be irrigated so quickly without wasting water in such a short time. Thanks to the Government of Pakistan to initiate such a wonderful project for farmer's legatee.

4.11 SUCCESS STORY OF THE PROJECT INTERVENTIONS

Project's Economic Outlook

4.11.1 Success Story of Watercourse - Punjab Zone:

A watercourse is a community irrigation channel used for sharing water among shareholders through a weekly rotation system called "Warabandi". Community watercourses are connected to farmers' fields through a complex system of channels and ditches. Water losses in watercourses are of significant nature, mainly through spillage, seepage, side leakage, evaporation etc. which results in a shortage of irrigation water at the farm level, particularly in tail reaches that compel the farmers to use groundwater for irrigation purposes.

The improvement of watercourses is a community-driven activity that is being undertaken through a participatory approach with the active involvement of Water Users Associations (WUAs), organized and registered on each watercourse. This community-based development model is helping the poor and small land holders to improve their living standards. Here is a success story of a member of Water Users Association Mr. Ahmad Rabani (Treasure) and a farmer having this land holding at the tail of watercourse.



Mr. Ahmad Rabani (Treasure of WUA)

Brief profile of Watercourse is given as under:

Wc. ID	43000-R
Category	Additional
Year of Improvement	2019-20
*Already Lined	3969 meters

New Lining	1319 meter (50%)
Name of Chairman	Muhammad Ismail
Contact No.	0300-6374757
Name of Treasure/Farmer	Mr. Ahmad Rabani
Minor/Distributary	Rana Minor
Contact No.	0302-7306302
Mouza/Qasba	Maral
Tehsil	Multan
District	Multan

*Improved during the F.Y. 2002-2003 to 2016-2017 under various phases of ADP.



View of 43000-R Water Course Qasba Maral Tehsil & District Multan

The community of **Water Course 43000-R, Mouza/Qasba Maral, tehsil Multan, district Multan** were facing huge water losses problem due to seepage, side leakage and spillage since long and usually experiencing water shortage at their farms as they were unable to use groundwater because of its extremely poor quality for irrigation and being very costly.

While searching for solution, the community learnt about the government facility for watercourse improvement and approached the OFWM staff for rescue. The OFWM staff suggested the farmers for re-organizing a water user association for improvement of the watercourse. The community availed the facility being provided by the Government which has changed their lives.

According to Mr. Rabani:

"Before the improvement of a watercourse, my whole land (125 Acres) was uncultivated because of being at the tail end of watercourse and water shortage and water theft. After improvement of the water course I am getting plenty of water and now all of my land (125 Acres) is being irrigated due to proper flow of water at the tail end of watercourse"

Mr. AHMAD RABANI, the shareholder of the watercourse and treasure of the WUA, shared the

benefits of improved watercourse. He added that “conflicts/disputes have also been reduced significantly. Major conflicts among the farmers were due to water theft and side leakage of the water which used to damage the crops of other farmers having lands along the watercourse”.

In reply to the questions on benefits of such improvement of watercourse he replied that improved watercourse enabled us to irrigate more land with the same quantity of water. It also helped us to save labor expenses as 5-10 workers were required for irrigation before the improvement of the watercourse. Now one worker is enough for the purpose. He further shared that “another major benefit is better cropped with canal water as groundwater is not fit for the growth of crops and causes lower yields. Before watercourse improvement, the shareholders quit growing sugarcane due to water shortage and the land of some farmers had become almost barren owing to shortage of water leading to use of poor-quality groundwater but now they have not only started to grow sugarcane but their wheat and other crops’ yield has also been doubled.

Mr. Ahmad Rabani’s face reflects the happiness about this intervention when asked how much benefits are expected, he claimed the benefits are defined but how much, time in near future will tells it.



Field Team Multan interviewing the farmer Mr. Ahmad Rabani

“Mr. Ahmad Rabani says we are very thankful to the government for this opportunity and advised other farmers to take full advantage of this intervention scheme of the government.”

ME&IE Consultants interviewed the farmers to know their satisfaction level on the NPIWC-II project. In this regard consultants prepared some success stories of the project interventions as explained below.

4.11.2 Success Story of Watercourse - ICT Zone

The target watercourse was pipelined for Raja Zaheer Ahmad and it is located at Phulgran area.

The team visited the area around 11 am and checked the field area. There were 2 farmers working on farm and picking the Tulip flowers on 2 acre land. The farmers told that they use to pick these flowers on daily basis and sell it in local market of Islamabad almost 10 to 22 rupees per flower depending on season. Farmers told that this flower cannot be grown without moisture on the surface of the farm land.

Later team moved to the Hujra of Raja Nazeer Ahma. Rajz Nazeer was out of city, however his nephew Raja Adeel Shahid was available who accompanied the team and shared all the information needed of his farm area and his level of satisfaction on the NPIWC-II project. Following information was gathered from him.

He told that two acre land needed seed of Rupees 50000. If it is grown through bulb, one bulb cost around 6.75 rupees these days.

Two crops can be obtained for Tulip flowers November and April. This is a three months’ crop and require only 6 waters. However, if there is good rainfall, then they avoid irrigation. This irrigation water is also needed to keep soil moist for long time, so flower can remain in good condition. Dry soil conditions could make flower die. This problem has been resolved by the watercourse.

A good quality seed could be produced from the lands of ICT without fertilizer due to good drainage and natural sweet water.

It was told that they were getting only wheat and maize from the current land holdings before this intervention NPIWC-II project, however, one of the progressive farmers suggested them to change the crops towards cash crop and now they are growing these flowers.

He suggested that if the local farmers are provided proper training, advice and equipment, they can change their existing cropping patterns towards better cash crops, so they can earn a lot from small landholdings. They grow fodder for remaining season to make silage for animals.

Later on team returned back and requested the WMO that he may ensure the presence of WUA chairman on next visit.

4.11.3 Success Story of Water Storage Tank- Punjab Zone

Construction of Water Storage Tank Has Triggered Paradigm Shift in Farming and Eventually Resulted in High Returns from Farming

Water is the lifeblood in agriculture. The main source of irrigation is from a vast canal system comprising of Canal, Branch Canal, Distributary Minor, and Watercourse. The conveyance losses of water in reaching the farm are estimated at 45-50 percent. Since 1960 several programs and projects in one way or the other have been launched for water conservation at the farm level and increasing water availability at the farm gate to improve water management practices in Pakistan. The National Program for improvement of the watercourse in Pakistan Phase-II is in continuation of programs/projects to improve irrigation water management at field levels in Pakistan.

The Intervention:

The construction of a water storage tank is one of the interventions of this program. The main purpose of the construction of the Water Storage Tank under the National Program for water improvement was to capture and store canal water, Surface water Runoff. So, that it may be used subsequently at the required time of irrigation. The cost of pumping the water from the water storage tank is lesser than the pumping from the ground i.e., tube well.



A View of Tomato Field at Farm Site

Mr. Habib-Ur- Rehman is an educated and well-known progressive farmer of Sheikhupura. By Profession, he is an Advocate. He is associated with farming for the last 10 years by having 10.5 acres of land. On this water Storage Tank, he has only 5.5 acres of land. His village is located in a water-scarce area, where canal water is the main source of water and the quality of Tube well water is poor. He has hired a full-time farm manager /Munshi Dr. Mansha to look after his farm (on this water storage tank) and farm of 5 acres in the nearby vicinity. He is also responsible for so many other petty works.

Basic Profile of the Owner of Water Storage Tank

Province/Unit	Punjab
Division	Lahore
District	Sheikhupura
Tehsil	Sheikhupura
Union Council	UC-17
Village	Qiampur
Name of Farmer/Beneficiary	Habib-ur-Rehman
CNIC	3540423820695
Cell No	03004736072
Father Name	Ali Hassan
Source of Irrigation System	Canal and Tube well
Operated area	5.5 Acre
Land Topography	Even
Financial Year	2020-21



A View of Strawberry Field at Farm Site

During 2016-17, he was using traditional methods for growing wheat but soon he was disappointed as his net

income was very low attributed to low yield due to the shortage of canal water and use of tube well water.

Collaboration of OFWM:

Farmer's Statement: "Traditional farming has become less profitable due to continuously increasing production costs (mainly on irrigation and fertilizer). Meanwhile, the On-Farm Water Management (OFWM) staff approached him and explained about water Conservation Techniques i.e., drip irrigation".

In the years 2017-18, he shifted to drip irrigation and for successful tunnel farming for growing strawberry and off-season vegetables. This system enables him to get more returns per unit area and increased his livelihood from the agriculture sector".



A View of Tunnel Farming at Site

Guidance from OFWM Department

Due to the highly limited availability of canal water and poor quality of groundwater he faced issues regarding water. He has no means of storing canal water and/or rainwater for utilizing in farming. Then, he contacted OFWM staff for seeking various solutions. The On-Farm Water Management (OFWM) staff approached him and guided him about the National program for improvement of Watercourse Phase-II. The On-Farm Water Management (OFWM) staff briefed him about the Construction of Water Storage Tanks. Then this Water Storage Tank was constructed.



Views of water Storage Tank, Qiampur Tehsil, and District Sheikhpura

Impact of the Intervention on inputs – outputs

The impact of this intervention is naturally affecting the farming community in the same vicinity. At this moment only a few tangible and intangible benefits were observed.

This Water Storage Tank not only helps to Store canal water but also Stores Rainwater as well. Farmer used this Water Storage tank to mix the Fertilizer. It gives a Homogeneous mix. This Water Storage tank helps to Store Water during the harvesting season or when there is no need. The Construction of a Water Storage Tank fulfills the Deficiency of water and created a high impact on the quality and yield of vegetables.



Meeting with Dr. Mansha (Farm Manager) of Water Storage Tank



Meeting with owner of the Water Storage Tank

It also reduced immature fruit drop, improved fruit size & color, and brought early maturity/harvesting to fetch a good price in the market. The Construction of a Water Storage Tank enabled him to get higher production with 52% less fertilizer use. His cost of production has been considerably reduced and available canal water is sufficient to grow vegetables successfully without pumping brackish groundwater, directly.

While sharing his experience, he indicated that the savings in Water Consumptions due to the Storage of Canal Water in the Tank as well as the labor cost of Fertilizer has provided significant benefits. *“Labor expenses are curtailed and yields have gone up”*. He added that *“expenditure on weedicides has also been reduced as the irrigation water is delivered to plant roots only and accordingly; fewer weeds are grown resulting in little expenses on weedicides. Now he can irrigate and harvest Strawberry and Tomato”*. Habib-ur-Rehman excitedly told that *“I am following all the guidelines provided by On-Farm Water Management staff to grow healthy crops and I am expecting more than 50% higher yields of Strawberry and Tomato crops”*.

4.11.4 Success Story Watercourse - KP

Water Course: Muhammad Zeb Tube Well Water Course

Location: District & Tehsil Mardan, UC Bazar, Village Baroch

Abstract: It is important to develop an irrigation system where water loses should be reduce as much as possible. Current irrigation through kacha water courses is obsoleted and the farmer lost water during the irrigation. A proper irrigation system should be developed which not only save the water loses but also take less time to irrigate more area.

Introduction: A good understanding of irrigation system and proper representation of them in water courses is required to adequately provide water to the farmers. Throughout the world a wide variety of irrigation system and water distribution procedure exist. Therefore, a proper irrigation model should be developed for the quick delivery of irrigation water to the area. The study area is a remote area and no irrigation system is existed which is located in District Mardan, UC Bazar. The main water source in the area is rain water (Barani Area)

Water course was completed by On Farm Water Management on 03/10/2020. The purpose of the water course is to provide adequate water to the farmers for irrigation purpose. Total CCA on the water course is 100 Acre which was none irrigated before the improvement of the water course, so there was no farming activities and no cropping on the land. The land was culturable but there was no source of irrigation and the former was not getting any benefit from the land. Below images shows the condition of the land before the water course.



View of farmer's Land before Intervention

After the completion of the water course in Oct 2020 the formers have prepared the land through tractor, bull ploughing and some other sources to get it ready for the crops. According to the farmers the land required to be fully irrigate at least once to get it ready for the land preparation. The land took a lot of time to irrigate during the 1st time irrigation. Though Maize and wheat are crops of Bazar area but the formers are not getting enough yield from these crops therefore Mr. Muhammad Zeb were interested in the orchard especially in orang gardens which is consider the main cash of the area.

Keeping in mind the cash crop Mr Muhammad zeb prepared the land for the orange plants. The orange plants were planted by the farmers in Apr 2020. Due to the availability of the water the plants are growing fast and expected to start production in the next 2 years' time.

Below images shows the size and current position of the plants.



View of Farmer's Land with Orange Orchard – After Project Intervention

Describing his future farming plan after water course completion Mr. Muhammad Zeb is planning for mix cropping system therefore he currently cultivated Peas and Garlic inside the Orchard and planning of cultivating Spinach and Onion during coming Kharif season. There current orchard (orange) is the first ever crop of this land and there were no farming activities earlier so the data for cropping pattern and cropping rotation is not available. Currently 6 farmers look after the crops so the employment increased from Zero to 6 people since the completion of the water course and some more labours requirements are expected in the near future. The production (Yield) is expecting to start soon which will not only change the living standard of the farmers but will also help other labours working in the field to have some facilities in their lives.

The point noticed during the interview with the farmers was that the Water User Association is not active. There is no regular meeting of WUA and most of the WUA member are not aware of their responsibilities as a member of WUA.



Image: Water Course

Result: *Lining the water course improved the availability of the water. In term of quality the newly develop water course is far better than using old irrigation system. Water losses after water course lining is reduced from 70% to 12%. 100 Acre of land is now expected to be irrigated which will produce wheat, Peas, Garlic and Orange.*

4.11.5 Success Story - Construction/Renovation of Watercourses in - Balochistan

"Agriculture is the noblest of all alchemy; for it turns earth, and even manure, into gold, conferring upon its cultivator the additional reward of health." — Paul Chatfield.

Under the direction of the Prime Minister of Pakistan, the said project on "National Programme for Improvement of Watercourses in Pakistan, Phase-II" was started in 2020. The NPIWC-II comprises four components to be implemented in Punjab, KP, Balochistan, GB, AJK, and ICT:

- v) Organization of Water Users Associations
- vi) Watercourse Improvements: 47,278 Nos.
- vii) Construction of Water Storage Tanks: 14,932 Nos.
- viii) Provision of Laser Land Leveling Units: 11,610 Nos.

With the passage of time, water resources are being overexploited, especially in urban areas, and groundwater levels are sinking. If this process continues, there is a danger that water may not be available even for human consumption. To address

such water issues, Govt. of Pakistan initiate the Project "NPIWC-II" throughout the country including Balochistan and pay immediate special attention to the careful and efficient use of available water resources. The objectives of the Projects are:

- Reconstruction/renovation and remodeling of 47,278 watercourses in Pakistan, 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).
- Reduction in Water Logging and salinity in project areas to the extent of 10%.
- Cropping intensity is expected to increase by 5-20%.
- Crop's yield is estimated to increase by 10-15%.
- Equity in water distribution increased by about 30%.
- Reduction in water disputes/thefts and litigation amongst the Farmers over water distribution by about 80%.
- Help poverty reduction through the generation of employment.
- Self-sufficiency in food through the utilization of water saved for edible oilseed production.

In the month of November 2021, Mr. Muhammad Tariq, FTI/M&E Expert and Mr. Saleem Abro, M&E Officer visited the farm of Mr. Shafiq, Farmer at Tehsil Dirghi, District Jaffarabad. The Jaffarabad is located in the eastern part of Balochistan was established district of the province in 1987. Jaffarabad's headquarters are at Dera Allah Yar formerly and still known as Jhatpat. The climate is hot and dry in summer and moderately cold in winter. Main crops are **wheat, rice, maize, cotton, vegetable, and fodder crops.**

The construction of new "Pakka" watercourse or improvement of WC is the major activity of the project. The procedures for new watercourses and for 20 years old have been kept the same in the project. In case of additional lining, they are different to some extent.

Mr. Shafiq, Farmer has motivated by the OFWM officials regarding NPIWC-II. The farmer briefed by OFWM regarding the benefits of the Pakka

Watercourse. Initially, Mr. Shafiq was little bit confused regarding the 25% share of a farmer but letter on he applied an application for new pakka watercourse in place of kacha watercourse. After the consent of the farmer's contribution of 25%, the site assessment was made considering the water source, soil structure, and suitability for the watercourse. Ultimately, construction of the watercourse was completed in 03 months and supplied water that enabled subsistence cereal/staple food to farmers Shafiq Ahmed to grow more profitable commercial crops like vegetables (Wheat, Rice, etc.) He was not only able to grow these commercial crops but got good quality crops through a regular supply of irrigation water.



Views of Kach Watercourse (Before intervention)

Water:

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

The site visited area in canal irrigation systems. If the canal does not flow on time, the crops fail, and cropping options remain limited to staple food crops. More importantly, the crop water productivity has been the lowest than its potential. There is a serious need to conserve this vital water resource to ensure more productivity per drop of water.

Impact on Yield Production:

Prior to this activity, farmer was getting 1440 kg (36 Mond) per acre in Rice while only 640 kg (16 Mond) per acre in wheat. After construction of new watercourse farmer is able to get 1610 kg per acre of Rice through hybrid Seed (12% increased) and 742 kg per acre of wheat (16% increased).



View of a newly constructed watercourse and lush stunning crops

Impact on Livestock Rearing:

These households got water drinking facilities for cattle & buffaloes, goats & sheep, and poultry birds. Farmers are raising fodder for livestock instead of relying on wild and native bushes to feed their animals. This increase in fodder and improvement in quality raise their income by about 10% through selling animals for meat and milk production. Rearing more animals is not only increasing female members' income but also makes them independent in decision making.

Gender Role and Benefits:

The female family members are taking a lot of benefits through this intervention. The washing pads of Watercourses are being used for washing clothes. Before this intervention female family members used to do this activity away about 1.5 km from home by spending precious time. Now these female members have lot of convenience and time savings for family. The washing pads are also being used for washing vegetables, fruits, etc. by women at farm, before this activity it was conducted at their home, lot of time wasted to brought them from farm to home.

Farmer Feedback:

Mr. Shafiq, Farmer told to ME&IEC Team that before intervention this activity a lot of our land was uninhabited. Due to the mess of water, the crop was also weakened. It took a lot of time to irrigate the land and also a lot of time was wasted in cultivating the crop. At once Mr. Imdad, Deputy Director, OFWM surveyed our land and advised me to make a paved drain and inform me of its importance and usefulness.

I was not interested because of the huge amount of money then Mr. Imdad, DD assured us that 75% of

the expenses were to be paid by the government, and the farmer was obliged to pay only 25%.



The ME&IEC Team Interview the Farmer

When I started irrigating the land for the first time after the completion of Pukka Water Course, I was overjoyed. Water started irrigating the field without any hindrance. *I was amazed at the usefulness of the watercourse because I never thought I would be irrigated so quickly without wasting water in such a short time. Thanks to the Government of Pakistan to initiate such a wonderful project for farmer's legatee.*

CHAPTER 5: ISSUES / BOTTLENECKS

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

- Non availability of Technical Sanctions of the watercourses required for baseline survey
- Due to delay in approval of Monitoring Tools could not be able to move field teams on time (as per work plan) for the Baseline and Monitoring Surveys
- Non-availability of complete up-to-date inventory / data of all interventions from the Client, Provincial Agricultural Departments & NWMC (NESPAK) till to date.
- Due to non-availability of NWMC (NESPAK) deliverables/reports, ME&IE Consultants are facing hurdles to evaluate working of NWMC. In this regard the cooperation of NWMC and respective Directorates is required.

ANNEXES A to M

ANNEX - A: TENTATIVE WORK PLAN FOR QUARTER (JAN-MAR 2022)

ANNEX-A: TENTATIVE QUARTERLY WORK PLAN 2022 (JANUARY – MARCH 2022)

TENTATIVE WORK PLANNED FOR 4th QUARTER (January To March 2022)												Legend				
No.	ACTIVITIES	3 Months-Year 2022 (Weeks)														
		January				February				March						
		WK-1	WK-2	WK-3	WK-4	WK-1	WK-2	WK-3	WK-4	WK-1	WK-2	WK-3	WK-4			
1	Pre-Field Activities															
1.1	Preparation for 2nd-Phase Baseline Survey	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1.2	Improvement of Questionnaires in the light of experience of 1st-Baseline Survey	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1.3	Training of Field Staff for 2nd-Phase Baseline Survey	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	Field Activities															
2.1	Regular Monitoring of Interventions in the Field	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2.2	Data collection of the interventions in the field	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2.3	Baseline Survey stage - 2	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2.4	Online data entry in android based application	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	ICT Assignment															
3.1	Development / Improvement 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	Deliverable															
5.1	Monthly Monitoring Report	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5.2	Quarterly Monitoring Report (Oct-Dec 2021)	↑	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5.3	Baseline Survey Report 2nd-Phase	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

ANNEX - B: MATRIX OF RESPONSIBILITIES

MATRIX OF RESPONSIBILITIES

SR. NO.	DELIVERABLE / ACTIVITIES	LEGEND			
		● Primary Responsibility	○ Secondary Responsibility	○ Assistance	ME&IE Consultants
NPC-FPMU	Agriculture	Dept. (OEMM)	Project Consultants	ME&IE Consultants	
1	Provision of Pre-requisite data of project components for starting of Field Activities: <ul style="list-style-type: none"> • Organization of Water Users Associations, • Watercourses Improvement, • Water Storage Tanks, • Laser Land Levelers, 	○	●	-	-
2	Certification of operational documents of the project, <ul style="list-style-type: none"> • Design, cost estimates, completion reports of watercourses, • Design, cost estimates, completion reports of water storage tanks, 	○	○	●	-
3	Undertake baseline, midline and endline surveys of the project activities/interventions in all the project areas.	-	-	-	●
4	Develop monitoring strategy, framework and Result Based Monitoring (RBM) indicators,	-	-	-	●
5	Assessing the water saving per annum on watercourse and water storage tanks as well as aggregate due to the project interventions.	-	-	-	●
6	Assessing the improvement in water availability due to provision of conveyance system.	-	-	-	●
7	Assessing the economic benefits to the agriculture in terms of increase in yield, irrigated area, cropping pattern, cropping intensity, farm income and employment in command area of watercourses and water storage tanks.	-	-	-	●
8	Assessing the extent of community mobilization, financial and administrative sustainability of Water Users' Associations and ensuring the maintenance of watercourses, water storage tanks and laser land levelers.	-	-	-	●
9	Economic Impact of project interventions.	-	-	-	●
10	Carryout impact evaluation of the project investment on the economy and stakeholders.	-	-	-	●
11	Preparation of Monthly, Quarterly and Annual Monitoring, Evaluation and Validation Reports of the project activities.	-	-	-	●
12	Develop a website containing information of facilities and services, applications, procedures, watercourses, water storage tanks, and laser levelers database etc. (Maintaining website should be the responsibility of project staff).	-	-	-	●
13	Provide technical support for the development of a custom-designed mobile application (Android) to capture on-site project progress, geo tagged photos; should be synchronized with the central MIS/GIS database and application for instant reporting and feedback to the	-	-	-	●

ANNEX - C: MONITORING LOG-FRAME

Annex-C: Monitoring Log-frame

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

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

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

ANNEX - D: DELIVERABLES/REPORTING REQUIREMENTS

Deliverables/Reporting Requirements

Sr. No.	Document	Copies	Due
1	Draft Inception Report	8	45 days after the effectiveness of the Consulting services Agreement.
2	Final Inception Report	15	One week after the issuance of comments by the Client on Draft Inception Report
3	Monthly Monitoring Report	10	10 th of the following month
4	Baseline Survey Report	10	4 months after start of the assignment
5	Midline Survey Report	10	In the middle of the assignment
6	Endline Survey Report	10	At the end of the endline survey
7	Quarterly Monitoring and Evaluation Report	10	10 th of the first month of following quarter
8	Annual Monitoring and Evaluation Report	10	During first month of following year
9	Draft Assignment Completion Report	5	At completion of physical works / activities
10	Final Completion Report	25	At completion of works as well as financial transactions
11	Special Reports	10	As and when required

ANNEX - E: DRAFT FORMAT FOR CASE STUDY ON GENDER COMPONENT

FORMAT FOR A CASE STUDY ON GENDER AND SOCIAL IMPACT

CASE STUDY <Template (Draft)>

PROFILE:

W.C./WST:

Division:

District:

Tehsil:

(Picture of Community)

BASE LINE SITUATIONS:

AWARENESS

PGS (FIRST VISIT)

PGS (2ND VISIT)

IMPACT ASSESSMENT:

PGS (3RD VISIT)

FINAL CASE STUDY

RESULTS:

- ❖ Livelihood
 -
 -
- ❖ Financial agriculture
 -
 -
- ❖ Food Productivity/Agriculture richness
 -
 -
- ❖ Women empowers
 -
 -
- ❖ Overall Impact
 -
 -
- ❖ Sustainable development goals
 -
 -

ANNEX - F: TRAINING WORKSHOP ON FIELD DATA COLLECTION

Three Days Training Workshop Field Data Collection Through Android Application

Organized by PD Office NPIWC-II - AJK

2nd to 4th November 2021

Venue: Mir Continental - Jalalabad Park, Muzaffarabad

Agenda

Training Objectives

This training workshop will enable participants to use the Android based data collection application for feeding data for MIS Dashboard.

Workshop Trainers

Name	Prefix	Role	Designation
Dr. Usman Mustafa	[UM]	Trainer	Team Leader ME&IEC
Mr. Rizwan Saleem	[RS]	Trainer	ICT/Technology Specialist
Mr. Shumail Mehmood	[SM]	Co-Trainer	Data Analyst

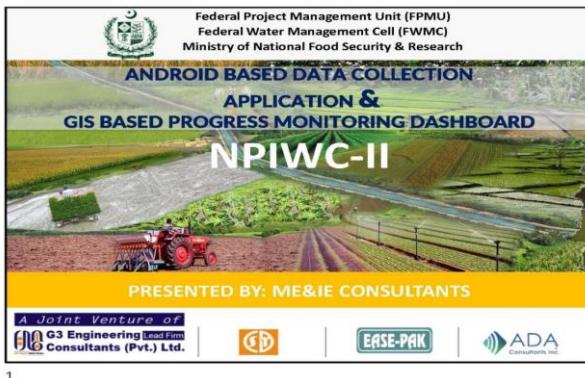
Tuesday, November 2 nd , 2021			Day-1
Time	Topic		Presenter
10:00 AM	10:10 AM	Workshop Opening: Recitation of Holy Quran	
10:10 AM	10:30 AM	Inaugural speech	PD Sb
10:30 AM	10:45 AM	Introduction of facilitators and participants	
10:45 AM	11:20 AM	Introduction to digital data collection & GIS based Progress Monitoring Dashboard	RS (ICT Specialist)
11:20 AM	12:20 PM	Discussion on approved WC forms	RS (ICT Specialist)
12:20 PM	1:00 PM	Discussion on approved WST/WHS forms	RS (ICT Specialist)
1:00 PM	2:00 PM	Lunch/Prayer Break	
2:00 PM	3:00 PM	Introduction to Android data collection application	RS (ICT Specialist)
3:00 PM	3:45 PM	Demonstration of approved WC forms on Android	SM (Co-Trainer)
3:45 PM	4:30 PM	Demonstration of approved WST/WHS forms on Android	SM (Co-Trainer)
4:30 PM	4:50 PM	General discussion (Q&A Session)	RS (ICT Specialist)
4:50 PM	5:00 PM	Day End Closing Remarks	RS (ICT Specialist)

Wednesday, November 3 rd , 2021			Day-2
Time	Topic	Presenter	
10:00 AM	10:30 AM	Rapid Revision Session of Android Application and Digital Forms	RS (ICT Specialist)
10:30 AM	12:00 PM	Hands-on training session	SM (Co-Trainer)
12:00 PM	1:00 PM	Data collection field exercise	SM (Co-Trainer)
1:00 PM	2:00 PM	Lunch/Prayer Break	
2:00 PM	2:30 PM	Discussion on hurdles/issues faced during field activity	RS (ICT Specialist)
2:30 PM	4:00 PM	Social Mobilization & Water User Associations	Dr. Usman (TL)
4:00 PM	4:30 PM	Discussion on data monitoring/validation checks	RS (ICT Specialist)
4:30 PM	5:00 PM	Wrap-up and Q&A Session	RS (ICT Specialist)
Thursday, November 4 th , 2021			Day-3
Time	Topic	Presenter	
10:00 AM	10:30 AM	Refresher session	RS (ICT Specialist)
10:30 AM	10:50 AM	Closing Speech	PD
10:50 AM	11:30 AM	Distribution of Training Certificates	PD
11:30 AM	1:00 PM	PMIS Dashboard Launching	

ANNEX - G: PICTORIAL VIEW OF THE TRAINING



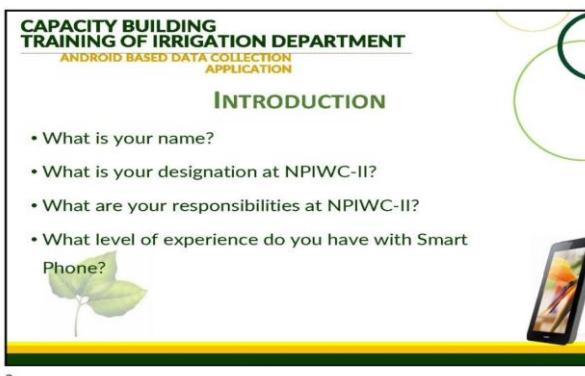
ANNEX - H: PRESENTATION ON ANDROID BASED DATA COLLECTION



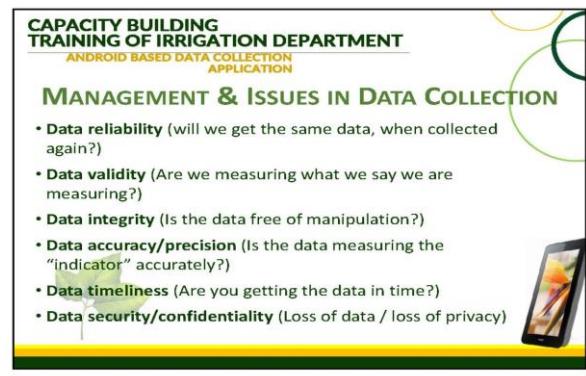
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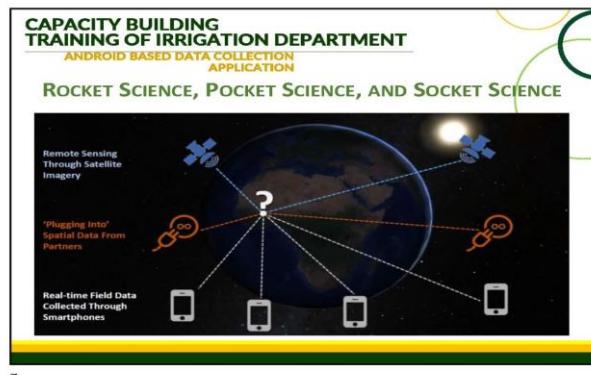
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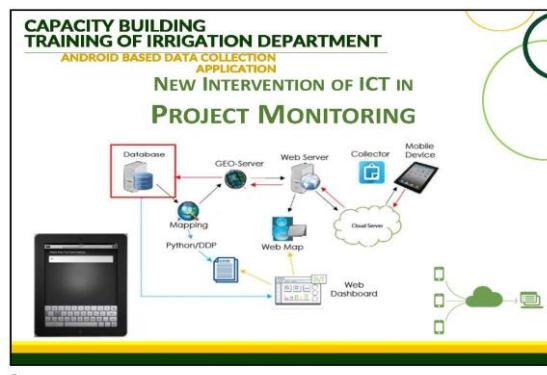
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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

- Improving transparency & accountability in development organizations and government agencies, through technology-enabled ME&IE for better monitoring, sharing and application of data.
- Enabling organizations, donors and citizens to use data for real-time decision-making, better implementation and delivery of projects and services



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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

It gives results at day end rather than waiting for 2-3 weeks in paper-based entry



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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

- It is beneficial in cost because it saves off massive printing & data entry




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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

If we have a questionnaire of around 70 pages, enumerator will carry at least 10 copies which means the weight equals to around 1.5 paper rim and a huge bag while in android he/she will take only tablet/mobile device




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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

- If we need to record GPS, tablet/mobile have built in GPS device and record coordinates without typing or carrying extra device (GARMIN or ETREX worth of around 14,000 Rupees)




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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

If we need to capture images, tablet/mobile device have built in camera and no need to take external digital camera




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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

To calculate duration of enumeration, it stores start and end time automatically.




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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY USE MOBILE TECHNOLOGY

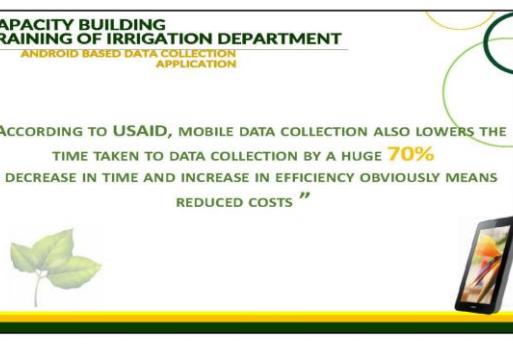
- Built-in logical flow and validation checks improves data quality
- Increased Accuracy of data, validity, reliability, precision, iness




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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

"**ACCORDING TO USAID, MOBILE DATA COLLECTION ALSO LOWERS THE TIME TAKEN TO DATA COLLECTION BY A HUGE 70%**
A DECREASE IN TIME AND INCREASE IN EFFICIENCY OBVIOUSLY MEANS REDUCED COSTS"



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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY DIGITAL TECHNOLOGY FOR MONITORING

Paper Reports

- Delay in reporting
- Multiple levels of reporting
- Information flow is one way and not actionable
- Bulky hard copies of reports
- Errors in entry, needs additional scrutiny

Using Mobile Phones

- Almost instantaneous reporting
- Direct reporting
- Information flow is both ways and actionable
- Web-enabled reports
- Field-level checks on quality incorporated



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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

WHY DIGITAL TECHNOLOGY FOR MONITORING

Paper Reports



Using Mobile Phones




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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

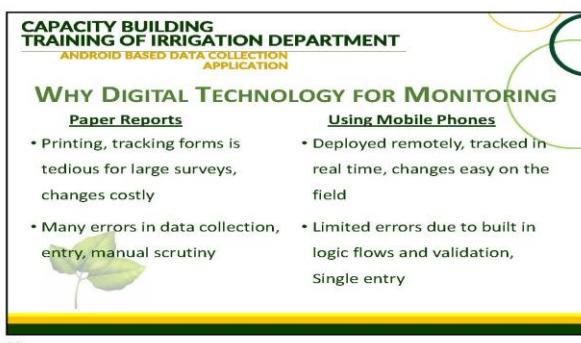
WHY DIGITAL TECHNOLOGY FOR MONITORING

Paper Reports

- Printing, tracking forms is tedious for large surveys, changes costly
- Many errors in data collection, entry, manual scrutiny

Using Mobile Phones

- Deployed remotely, tracked in real time, changes easy on the field
- Limited errors due to built in logic flows and validation, Single entry



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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

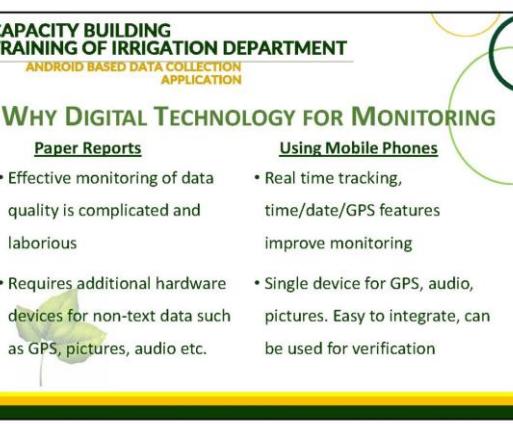
WHY DIGITAL TECHNOLOGY FOR MONITORING

Paper Reports

- Effective monitoring of data quality is complicated and laborious
- Requires additional hardware devices for non-text data such as GPS, pictures, audio etc.

Using Mobile Phones

- Real time tracking, time/date/GPS features improve monitoring
- Single device for GPS, audio, pictures. Easy to integrate, can be used for verification



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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

KEY PERFORMANCE INDICATORS



KEY PERFORMANCE INDICATORS

- Fortnightly Performance Report will be submitted to DG/PD Office
- Monthly Performance Review



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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

"**FIELD ENUMERATORS USING NEW TECHNOLOGIES NEED ADDITIONAL TRAINING AND SUPPORT. WITH PROPER INSTRUCTION, MOST ORGANIZATIONS HAVE FOUND THAT EVEN POOR, UNEDUCATED ENUMERATORS ARE CAPABLE OF PICKING UP THE SKILLS.**"

TRAINING



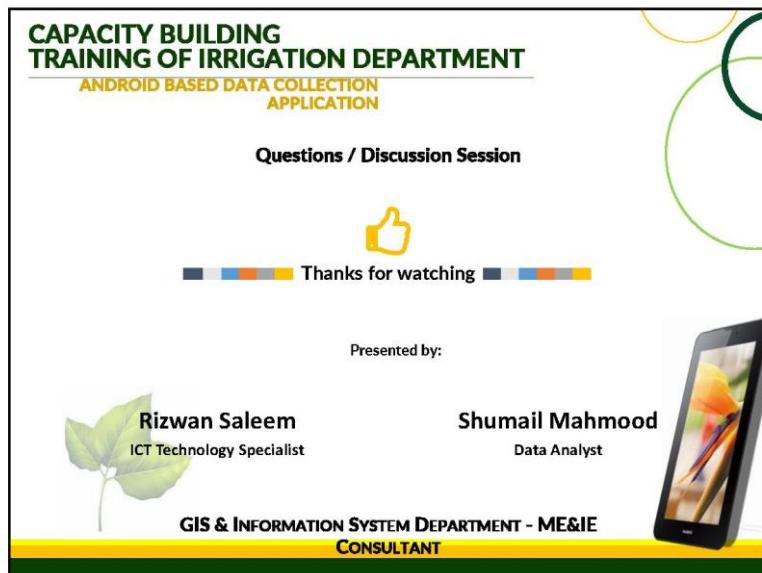
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CAPACITY BUILDING TRAINING OF IRRIGATION DEPARTMENT
ANDROID BASED DATA COLLECTION APPLICATION

DATA COLLECTION TEMPLATE



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ANNEX - I: MEDIA COVERAGE ON DASHBOARD INAUGURATION IN AJK



سیاست (www.siasat.com.pk ABC)
13 دسمبر 2021ء

اُب پیش سالانہ منصوبہ جامیں سرگز کے لیے دشمنوں کا افتتاح

ایکٹر ایک ڈنائیں کے ذریعے پھل پوگرام برائے بھری آئی ذخیر فیر۔ ۱۱ کے تحت جاری منصوبہ جات کی کل مانیزگ کی جائے گی پھل پوگرام برائے بھری آئی ذخیر ایک بھری منصوبہ، غیر آباد زمینوں کو آباد کرنے میں مددے کی سردار میر اکبر خان کا خلاط مظاہر (ضمیمہ) پرورد (آزاد گیر کے آسیا ہی جال) ۱۱ کے منصوبہ جات میں ایک ایک رکامی تقدیر اور میر اکبر خان کا ایکٹر ایک ڈنائیں کے ذریعے پھل پوگرام برائے بھری آئی ذخیر فیر جامیں سرگز کے لیے دشمنوں کا افتتاح کرو۔ اس بھری آئی ذخیر فیر (۱۱ دسمبر ۲۰۲۱ء) پر ۳۶ صفحہ ۱۱



نیشنل پروگرام بھری آئی ذخیرے منصوبوں کی نیزگ کا افتتاح

اس ایکٹر ایک ڈنائیں کے ذریعے پھل پوگرام برائے بھری آئی ذخیر فیر۔ ۱۱ کے تحت جاری منصوبہ جات کی کل مانیزگ کی جائے گی فیڈ ساف موبائل ایپلی کیشن کے ذریعے موقع پر جا کر منصوبہ کا فیڈ میرکزی پھل پوگرام برائے بھری آئی ذخیر فیر میں Add کر سکیں گے مظاہر (ضمیمہ) آزاد گیر کے آسیا ہی جال فیڈ ساف موبائل پوگرام برائے بھری آئی ذخیر فیر ۱۱ کے منصوبہ جات کی مانیزگ (۱۱ دسمبر ۲۰۲۱ء) سکریو نکلی پر کام بائی ای ذخیری جاگ لے جائے دشمنوں کی تربیت کی اعلیٰ ترقیاتی تعلیم اور اکاری فیکر پھیل ہو۔ میر اکبر خان کا افتتاح میں مدد مکمل رکامی دے سے ہے۔



امپیشی منصوبہ جامیں سرگز کے لیے دشمنوں کا افتتاح

فیڈ ساف موبائل ایپلی کیشن کے ذریعے موقع پر جا کر منصوبہ کا فیڈ میرکزی پھل پوگرام برائے بھری آئی ذخیر فیر میں Add کر سکیں گے مظاہر (ضمیمہ) آزاد گیر کے آسیا ہی جال میر اکبر خان کا جامیں سرگز کے لیے دشمنوں کا افتتاح کر دیا دشمنوں پھل پوگرام برائے بھری آئی ذخیر فیر۔ اس ایکٹر ایک ڈنائیں کے ذریعے پھل پوگرام ۱۱ کے منصوبہ جات کی مانیزگ اور کامی رکامی برائے بھری آئی ذخیر فیر (۱۱ دسمبر ۲۰۲۱ء) ۷ صفحہ ۳

ANNEX - J: TRAINING COMPLETION CERTIFICATE



TRAINING CERTIFICATE

This certifies that Mr. _____ has successfully completed two days training
on **Android Based Data Collection Application & GIS Based Progress Monitoring Dashboard.**

Held at Muzaffarabad, AJK during 02nd to 03rd November 2021

Team Leader
ME&IEC - NPIWC-II
 G3 Engineering Consultants (Pvt.) Ltd.

National Project Coordinator
FPMU - NPIWC-II

Project Director
AJK - NPIWC-II

ANNEX - K: MEDIA COVERAGE OF NPC VISIT TO GILGIT BALTISTAN



NPC in an Interview on PTV



Team Leader with NPC in an Interview on PTV



Media Coverage of NPC & Team Leader Visit to GB

ANNEX - L: MEDIA COVERAGE OF NPC VISIT TO BALOCHISTAN

NPC Visit to NPIWC-II Project Sites - Balochistan

<p>لبقہ 9 طاہر انور</p> <p>ڈپٹی ڈائریکٹر راکٹر ٹیکنیکن اقبال دیگر موجود تھے۔ اس موقع پر سیکریٹری زراعت نے اپنی طرف سے پہلے تحریک زراعت کے آفسیر ان اور علیے کہہ ہات کی ہے کہ وہ وفاقی پروجیکٹ سے متعلق علیے اور سلسلہ کے ساتھ ہر ممکن تعاون کیا جائے۔ ان پروجیکٹ کے ذریعے بلوچستان میں آپی گز رہا ہوں کی بھری اور پارائی علاقوں کے کمانڈ ایریا کو بڑھایا جاسکتا ہے جس سے زراعت کے شعبے بہت اثرات مرتب ہو گے۔ درس اشاغ و زیر انتظام ائٹل ایشیئر ڈاٹریکٹر کے پروجیکٹ کے پیش کو اور ڈپٹر محمد طاہر انور نے ہم آصف کا کڑ، سیف الاسلام و دیگر کے ہمراہ پاکستان میں آپی گز رہا ہوں کی بھری اور پارائی علاقوں کے کمانڈ ایریا بڑھانے کے پروگرام کے تحت خلیع قلات اور مستوگ کے مخالف علاقوں میں جاری ترقیاتی ایکیمات کا معاون کیا۔ محمد طاہر انور نے قلات میں ڈپٹی ڈائریکٹر والے پروجیکٹ کے دورہ نماج برآمد ہونگے، طاہر انور</p>	<p>زمیندار اور کسانوں کیلئے پروجیکٹ کے دورہ نماج برآمد ہونگے، طاہر انور</p> <p>کمانڈ ایریا کو بڑھایا جاسکتا ہے، یہ کیڑی زراعت سے ملاقات، قلات اور مستوگ میں ترقیاتی ایکیمات کا معاون کوئی (ب) وزیر اعظم ایشیئر ڈاٹری کیا گیا۔ اس موقع پر پیش کے پروجیکٹ کے نیشنل کو اور ڈپٹر محمد طاہر انور کی قیادت میں وفد نے پیر کو صوبائی سیکریٹری آف پاکستان کے ڈپٹی کو اور ڈپٹر محمد آصف کا کڑ پروگرام فارامپور وہنٹ آف وائز کورسز وفد نے وفاقی پروجیکٹ سے متعلق تفصیلی رپورٹ پیش کی اور اس سلسلے میں دریش مشکلات سے</p> <p>باقی صفحہ 6 نمبر 9</p>
<p>تیجنت سکندر شاہ کی کارکردی کی تعریف کی اور امید طاہر کی کہ وہ اسی طرح محنت جاری رہیں گے، مگر اخراج کے ڈپٹی ڈائریکٹر ہرائے وائز تیجنت کو چاہیے کہ وہ سکندر شاہ کی طرز پر کام کریں تاکہ اس کے شہرات سے عوام بالخصوص زمیندار اور کسان مستفید ہوں، بہت جلد پروجیکٹ کے دورہ نماج برآمد ہو گے۔</p>	

انہیں نگ کمانڈ ایریا ان بارائی ایریا آف پاکستان کے ڈپنی کو اور ڈپنر زمہر اسٹاف کا کریکٹ ٹیم پر وکرام فار امپور و مٹ آف والر کورس آف پاکستان کے ڈپنی کو اور ڈپنر سیف السلام، ڈپنی ڈاٹریکٹر ڈاٹری ڈپنر تھیں اقبال و دیگر بھی موجود تھے۔ اس موقع پر سیکرٹری زراعت نے ن صرف اپنی طرف سے بلکہ محکمہ زراعت کے آفیسر ان اور عنمے کو ہدایت کی ہے کہ وہ وفاقی پر جیکلش سے متعلق عملے اور جیکلش کے ساتھ ہر مملکن تعاون کرے۔ ان پر و جیکلش کے ذریعے بلوچستان میں آپی گز رگا ہوں کی بہتری اور بارائی علاقوں کے کمانڈ ایریا کو بڑھایا جا سکتا ہے جس سے زراعت کے شعبے پر ثابت اثرات مرتب ہو گائے۔ دریں اشناہ و زیر عظیم اپنی ایشیائی زوار سیکٹرز کے پر و جیکلش کے ڈپنل کو اور ڈپنر محمد طاہر انور نے محمد اسٹاف کا کریکٹ سیف السلام و دیگر کے ہمراہ پاکستان میں آپی گز رگا ہوں کی بہتری اور بارائی علاقوں کے کمانڈ ایریا بڑھانے کے پر وکرام کے تحت شائع قلایت اور مستوگ کے مختلف علاقوں میں جاری ترقیاتی اسکیمیات کا معائنہ کیا۔ محمد طاہر انور نے قلایت میں ڈپنی ڈاٹریکٹر والر تھیمنٹ سکندر شاہ کی کارگردگی کی تعریف کی اور امید طاہرگی کہ وہ اسی طرح محنت بارائی رنجیں گے، ویکٹر اضلاع کے ڈپنی ڈاٹریکٹر زیر اے والر تھیمنٹ کو چاہیے کہ وہ سکندر شاہ کی طرز پر کام کریں

وزیر اعظم اپنی ایشانیہ زد از سکھر ز پر دیکھ لیں
کے وفد سیکریٹری زراعت سے ملاقات

گوئے (ب ر) وزیر اعظم احتیل ایشیائی زواز سکھر کے پر ڈیکھنے کے پیش کوڑا نینڈر محمد عابر انور کی قیادت میں وہ نے بھی کے روز سو بائی سیکھری زراعت امید علی بھوکھر سے طاقتیوں کی اس موقع پر وہ نے وفاقی پر ڈیکھنے سے متعلق افصیل ریویوٹ ڈیکھ کی اور اس سلسلے میں درجیں مذکویات سے سیکھری زراعت کو آگاہ کیا گیا۔ اس موقع پر ڈیکھنے پر وہ امیر برائے بچی نمبر 24 صفحہ 10 یہ

مَحَاجِزُ الْعَوْدِ وَفَاقِمَتْ بُوَسْ مَدْنَهُ بَرْعَادُونْ كَرْلَهُ كَاسِكَطْرِيْمِيْ إِمَيدْ عَلَيْهِ كَهُوكَرْتْ

بلوچستان میں آپی گزرگا ہوں کی بہتری اور پارافی علاقوں کے کمانڈ ایریا کو بڑھایا جاسکتا ہے وہد سے گفتگو
وزیر اعظم احتشام اشیخیو زوار سکھر کے پرہیکش کے نیشنل کو ارڈنیٹر کی ملاقات، قلات اور مستوگ کا دورہ
کوئی (آئی این بی) وزیر اعظم احتشام اشیخیو زوار سکھر کے پرہیکش کے نیشنل کو ارڈنیٹر نہیں طاہر
سکھر کے پرہیکش کے نیشنل کو ارڈنیٹر نہیں طاہر اور کی تیادت میں وہد نے ہر کے رو سوچائی
السلام بڑپی اور بڑی تکمیل اور نہیں اپنی اقبال و عکسی بھی موجود ہے۔ اس موقع پر سکریٹری زراعت نے مکمل
سکریٹری زراعت امید میں کوکور سے ملاقات کی اس
موقع پر وہد نے واقعی پرہیکش سے متعلق تفصیلی
رپورٹ چیل کی اور اس سلسلے میں وہیں مکھاں
سے سکریٹری زراعت کو آگاہ کیا۔ اس موقع
پر پرہیکش پر کرام ہرائے اہمیگ کمانڈ ایریا ان
پارافی ایریا آف بلوچستان میں آپی گزرگا ہوں کی بہتری
اور پارافی علاقوں کے کمانڈ ایریا

NPC with his team, ME&IE Consultants and local Farmers, on Sivit of NPIWC-II Project

ANNEX - M: DATA COLLECTION FROM KP ZONE FOR DASHBOARD

Data Collection Status of KP Zone								
Districts	2019-20	2020-21	2021-22	WC Overall Total	2019-20	2020-21	2021-22	WST Overall Total
Abbottabad	7	9		16	4	5		9
Bajaur	3	17		20	1	9		10
Bannu	38	15		53	2	2		4
Battagram	15	10		25	6	16		22
Buner	16	14		30	4	12		16
Charsadda	70	26		96	13			13
Chitral	12	29		41	4	2		6
Dera Ismail Khan	419		36	455	71		5	76
Dir Lower	21	24		45	3	4		7
Dir Upper	15	12		27	6	8		14
Hangu	30	3		33	14			14
Haripur	17	12		29	7	6		13
Karak	17	19		36	13	16		29
Khyber	6	13		19	1	9		10
Kohat	52	18		70	2	1		3
Kohistan	8	10		18	3	6		9
Kurram	3	5		8	1	1		2
Lakki Marwat	34	22		56	10	8		18
Malakand	27	18		45	7	5		12
Mansehra	35	13		48	5	8		13
Mardan	40	50		90	9	7		16
Mohmand	4	39		43	1	40		41
North Waziristan	2	3		5		8		8
Nowshera	28	43		71	13	18		31
Orakzai		1		1		2		2
Peshawar	43	16		59	9	8		17
Shangla	19	6	5	30	8	6	3	17
South Waziristan	5	10		15		15		15
Swabi	65	14	1	80	7	2		9
Swat	67	58		125	42	51		93
Tank	29	10		39	10	6		16
Torghar	2	3	6	11	3	2	2	7
Overall Total	1149	542	48	1739	279	283	10	572