



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

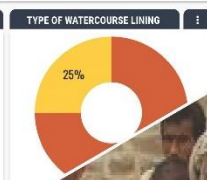
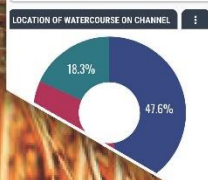
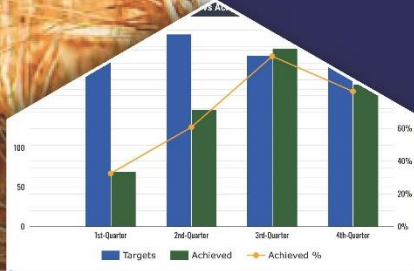
NATIONAL PROGRAM FOR IMPROVEMENT OF WATERCOURSES IN PAKISTAN PHASE-II: (NPIWC-II)

MONITORING, EVALUATION AND IMPACT EVALUATION CONSULTANTS



MONTHLY MONITORING REPORT

JANUARY 2022



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



EASE-PAK

ADA
Consultants Inc.

In Association with **S&S Associates**



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

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

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

MONTHLY MONITORING REPORT
JANUARY 2022

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ACRONYMS

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

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

EXECUTIVE SUMMARY

The report in hand, “Monthly Monitoring Report for the month of January 2022” comprises of six chapters.

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 of four components to be implemented in Punjab, KP, Balochistan, GB, AJK, and ICT:

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

Chapter-2 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 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 covers the details about the Monthly Monitoring Report. This Monthly Monitoring Report (MMR) covers the period from January 01, 2022 to January 31, 2022.

Chapter-4 of this report covers the activities carried out during the reporting period are summarized below:

- Preparation for the 2nd Phase of Baseline Survey
- Training of Field Staff for 2nd Phase of Baseline Survey
- Improvement of Questionnaires in the light of experience of 1st Baseline Survey
- Regular Monitoring of Interventions in the Field
- Data Collection of the Interventions in the Field
- Baseline survey field visits plan
- Data acquisition from Client, Data entry, Data cleaning, Data processing and analysis
- Meetings of ME&IE Consultants with Stakeholders about Project Progress / Issues
- Work on finalization of NPIWC-II website
- Data collection of interventions in MIS/GIS database
- Dashboard of Project Interventions
- Data collection of interventions in MIS/GIS database
- Success Story - Case Study on the Project Interventions

Chapter-5 of this report covers the details of ME&IE Consultants’ activities initiated during the Quarter (January 1, 2022 to January 31, 2022) are listed below.

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

Time span detail for 1st Quarter of year 2022 is mentioned in the Tentative Work Plan. **Annex-A.**

Chapter-6: of this MMR describes issues / problems faced by the consultants during the reporting period of the assignment.

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

No.	Activities Planned for the Reporting Quarter		Status
1	Pre-Field Activities		
1.1	Improvement of Monitoring Tools		Complied
1.2	Preparation for 2 nd Phase Baseline Survey		Complied
1.3	Training of Field Staff for 2 nd Baseline Survey		Complied
2	Field Activities:		
2.1	Regular Monitoring of Interventions in the Field		Complied
2.2	Data collection of the interventions in the field		Complied
2.3	Baseline Survey Phase-2		Revised MTs, Training Field Staff, Pretesting of MTs in the field
2.4	Online data entry in android-based application		Complied
3	ICT Assignment:		
3.1	Work on Development of Website of NPIWC-II		Complied
3.2	Monitoring online data collection and Data entry		Complied
3.3	Monitoring Android based Mobile Application under implementation by field staff.		Complied
3.4	Data collection of interventions in MIS/GIS database		Complied
4	Coordination		
4.1	Meetings of TL with NPC and OFWM Departments regarding Project Progress / Issues		Meetings conducted on regular basis
4.2	Meeting of DTLs with respective DTL of NWMC		Meetings conducted on regular basis
5	Deliverables:		
5.1	Monthly Monitoring Report (MMR)	12 th MMR (Dec 2021)	Submitted
		13 th MMR (Jan 2022)	To be submitted in stipulated time
5.2	Quarterly Monitoring & Evaluation Report (QM&ER)	QM&ER Oct-Dec 2021	Submitted
		QM&ER Jan-Mar 2022	Will be submitted in stipulated time
5.3	Baseline Survey Report Ph-2 (Draft)		Will be submitted in stipulated time

CHAPTER-1: INTRODUCTION

1.1 PROJECT PROFILE

Project Name	National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)
Project Areas	Punjab, KP, Balochistan, Gilgit Baltistan, Azad Jammu & Kashmir, and Islamabad Capital Territory (ICT)
Sponsoring Agency	Ministry of National Food Security & Research
Executing Agencies (EAs)	1. Federal Project Management Unit (FPMU), 2. DGA OFWM Punjab 3. DG 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 (CSR) 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 (PDOs) 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%.

- viii) Equity in water distribution increased by about 30%.
- ix) Reduction in water disputes/thefts and litigation amongst the Farmers over water distribution by about 80%.
- x) Help poverty reduction through generation of employment.
- xi) Self-sufficiency in food through utilization of water saved for edible oil seed production.

Project indirect benefits to industry/economic activities

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

Awareness support to farmers

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

1.2.3 Project Beneficiaries

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

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

1.2.4 Project Components

The NPIWC-II comprises four components.

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, Nallahs etc.
 - Rainfall runoff over agricultural catchment during rainy season
 - Tube-wells and dug wells of low flows
 - Tail-waters from agricultural fields
- iv) Regulate the flows so that it can be used efficiently when needed at large flow rates.

C4: PROVISION OF LASER LAND LEVELING UNITS:

Provision of 11,610 Laser Land Leveling 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 below **Figure-1.2**.

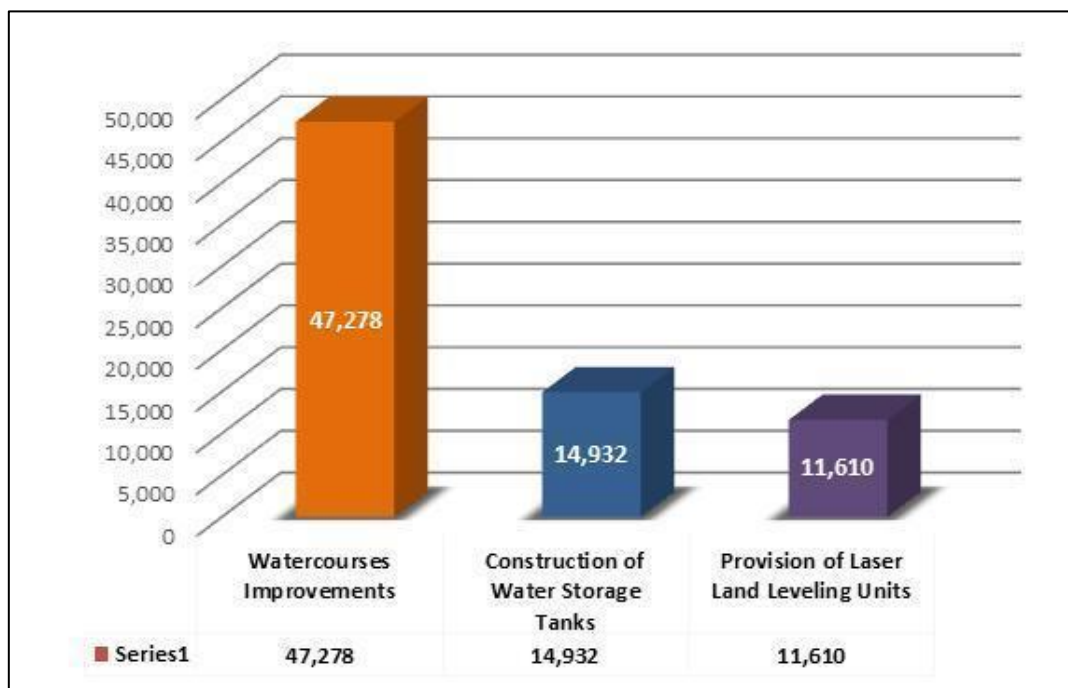


Figure 1.1 Pakistan Targets

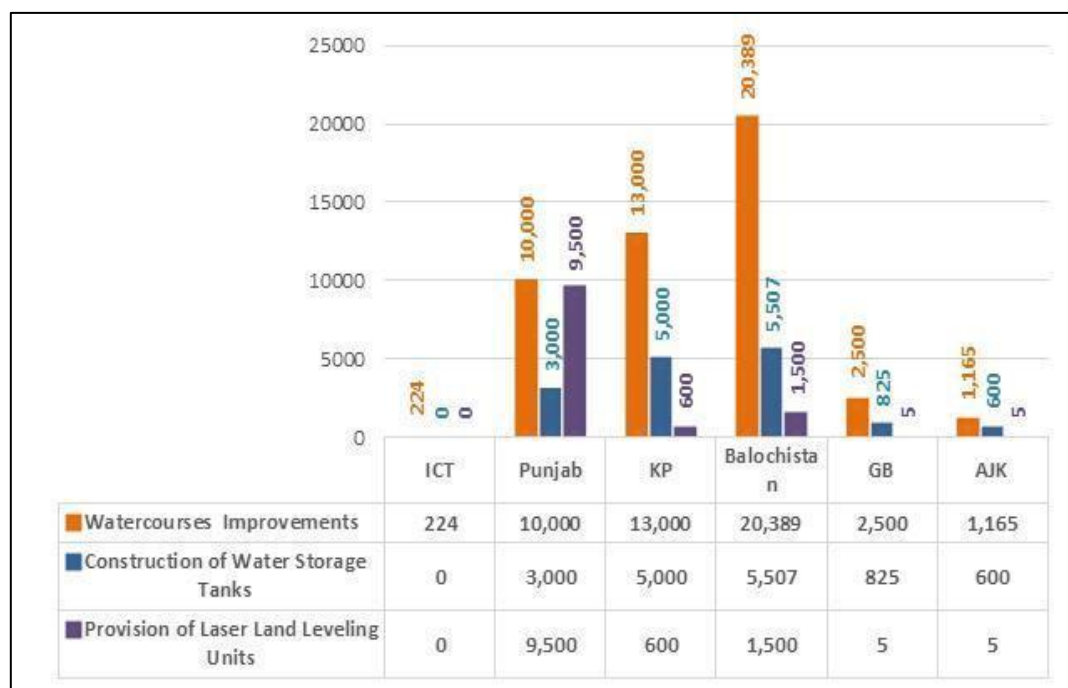


Figure 1.2: Zonal Target

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 an 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 endline surveys for the project activities / interventions in all the project areas,
- ii) Develop monitoring strategy, framework and Result-Based Monitoring (RBM) indicators,
- iii) Preparation of monthly, quarterly and annual monitoring, evaluation and validation reports of the project activities,
- iv) Assessing the water saving per annum on watercourses, water storage tanks and field levels as well as aggregate due to the project interventions,
- v) Assessing the improvement in water availability due to the provision of conveyance system,
- vi) Assessing the economic benefits to the agriculture in terms of changes in yields, irrigated area, cropping pattern, cropping intensity, farm income and employment in command area of watercourses and water storage tanks,
- vii) Assessing the extent of community mobilization, financial and administrative sustainability of water users' associations and ensuring the maintenance of watercourses, water storage tanks and laser land Levelers,
- viii) Economic impact of project interventions,
- ix) Carry out the impact evaluation of the project intervention on the economy and stakeholders,
- x) Develop a website containing information on facilities and services, applications, procedures, watercourses, water storage tanks and laser Levelers database, etc. (while the project staff

will maintain the website),

- xi) Provide technical support for the development of a custom-designed mobile application (Android Based) to capture on-site project progress and geo-tagged photos. It should be synchronized with the central MIS/GIS database and application for instant reporting and feedback to the management. The said requirement is based on the following functional features:

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

2.3 MONITORING STRATEGY

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 well as the project stakeholders. client and active participation of the beneficiaries as

Table 2.1: Monitoring Strategy for ME&IE Activities

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

			<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 the stakeholders.

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

CHAPTER 3: MONTHLY MONITORING REPORT

3.1 INTRODUCTION

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

3.2 OBJECTIVE OF MONTHLY MONITORING REPORT

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

3.3 REPORTING PERIOD

This Twelfth Monthly Monitoring Report (MMR) covers the period from January 01, 2022, to January 31, 2022.

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

CHAPTER 4: ACTIVITIES DURING THE REPORTING PERIOD

During the reporting month Consultants carried out different field as well as in-house activities related to ME&IE.

4.1 IMPROVEMENT OF MONITORING TOOLS (MTS) FOR 2ND PHASE BASELINE SURVEY

The ME&IE Consultants reviewed the Monitoring Tools in the light of Client's comments received on 1st Baseline Survey Report and lessons learnt by the consultants during activities of 1st Baseline Survey. The MTs were reviewed by all the zonal offices and improvements / amendments were shared with Team Leader for improvement.

Some new indicators were also added in the previous MTs which were felt necessary to evaluate the impact of the project interventions.

Field teams were also provided training on the updated MTs and refined / updated MTs were pretested in the field by the field teams.

4.2 REGULAR MONITORING / FIELD VISITS BY ME&IE CONSULTANTS

The routine monitoring is containing 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 the project 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.

The Monitoring/Baseline is to be conducted of interventions of the project viz watercourse improvement, Water User Association Water Storage Tank and Laser Land Leveler. Such surveys are carried out from time to time as a part of regular activity of ME&IE Consultants.

Zonal teams of consultants visited client offices for collection of data for dashboard for Islamabad and KP zone. Consultants also conducted meeting with client offices for planning of 2nd Phase of Baseline Survey.

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

Detail of field visits and observations of the field teams and other ME&IE activities of all the Zonal offices during the reporting period is given below:

4.2.1 Regular Monitoring / Field Visits by Zonal Office ICT

Deputy Team Leader ME&IE Consultants, ICT Zone and his team remained in close coordination with On Farm Water Management Department for ME&IE activities of the project.

During the current reporting month ICT conducted a visit to monitor the crop plantation patterns on the project improved parcels at farmers' fields during Rabi 2021-22. As OFWM is important associated institution, therefore, the visit plan was discussed with Water Management team on 2nd and 3rd of January 2022. Finally, it was planned to visit fields in ICT area on 6th January 2022.

ME&IE team along with Eng. Ghufarn Memon, Water Management Officer, visited the farm of Mr. Raja Zaheer Ahmad. This visit also aimed to cover a case study on the project intervention in ICT Zone. DTL and Monitoring Team of ICT Zone also remained engaged in the listed below activities during the reporting month.

- i. Review and improvement baseline survey questionnaire and its pre-testing in the field.
 - a. Questionnaire for water channels
 - b. Questionnaire for water structures/tanks
- ii. Finalization of the section on sampling methodology for incorporation in the baseline report.
- iii. Preparation of success story on Gladiolus cultivation in Rawalpindi-Islamabad area

4.2.1.1 Field Visit by Zonal Team ICT

ME&IE team of consultants visited village Phulgran in Islamabad Capital Territory, on 6th January 2022.

Deputy Team Leader and his team conducted this visit with field officers of Water Management Department. During this visit team conducted a meeting in the OFWM Department office Islamabad. Following were the participants of the meeting:

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

ME&IE Consultants visited a Raja Zaheer Ahmed Farm where Gladiolus (Figure 4.1) harvesting is being carried out by the owner. Salient glimpse of the field visit and success story made out of it is given below in figures 4.1 to 4.5. The figures show the show the source of water for the farm and market place where flowers are being supplied by the farmer.



Figure 4.1: Water Storage Tank Constructed at Raja Zaheer Ahmad's Farm



Figure 4.2: Water Pump Installed on Raja Zaheer Farm



Figure 4.3: Gladiolus Field, When There is no Flowering



Figure 4.4: Gladiolus Flowers Harvested on the Day Team Visited Raja Zaheer Ahmad's Farm



Figure 4.5: A Gimp of the Rawalpindi Flower Market, where the Gladiolus Flowers are Ultimately Supplied along with Flower Shops in Islamabad from farm of Raja Zaheer Ahmad

4.2.2 Regular Monitoring / Field Visits by Zonal Office Punjab

Monitoring/Visits of various interventions, in the field is one of the important regular features of field teams. The Field activities start from

collecting / reviewing basic data of an interventions viz watercourse improvement, Water User Association, Water Storage Tank and Laser Land Leveler. The ME&IE consultants of Punjab Zone have carried out selection of interventions as per prescribed criteria in the respective area on each sub zone. ME&IE Team conducted visits to client office and field visits as part of regular monitoring.

4.2.2.1 Field Visits by Zonal Team Punjab

ME&IE Team of Punjab Zone conducted field visit of watercourse Bhai Kot Chak No. 3 UC 03. Detail of field visit is given below and is also depicted in Figure 4.6 to 4.7.

Field Visit on January 13, 2022

Basic Profile of Watercourse Monitored / Visited

Watercourse ID:	45316 – L
Name of village:	Bhai Kot Chak No 3
Village council:	UC 03
Chairman WUA:	Junaid Iqbal
Cell No.	0315 - 0150000
Tehsil & District:	Pattoki, Kasur
Source of irrigation:	Canal
Total length of watercourse:	8589 Meter
Estimated length of lining:	232 Meter
Command area of watercourse:	729 Acres
No of beneficiaries:	60
Status	ICR – II



Figure 4.6: View of an Under Improvement Watercourse



Figure 4.7: ME&IE Team Monitoring Watercourse

Interaction with Beneficiaries & Beneficiaries Interviewed at the Spot

The field team of ME&IE consultants interviewed the beneficiaries of the watercourse and gathered their remarks on the interventions under the NPIWC-II project. Detailed observations of the ME&IE team and feedback of the beneficiaries is given below. Pictorial views of the discussions held with beneficiaries are shown in figures 4.8 to 4.9.

Name of Beneficiaries	Land Owned	Location at Watercourse
Amanat Ali	12.5 Acre	Middle
Bashir Hussain	5 Acre	Middle
Barkat Ali Yahya	9 Acre	Tail

ME&IE Consultants Field Observations

The farmers are happy on the improvement of the watercourse. They appreciated OFWM officials on their work especially ADA Dr. Nadeem Jaffri and

sub-engineer Muhammad Rizwan Rai, as they were very active in watercourse improvement task.



Figure 4.8: Meeting with Shareholders of Watercourse



Figure 4.9: General Discussion with farmers at the spot

The following are the main observations and conclusions made by the ME&IE Team of Consultants:

- a) Ground water is saline, and farmers/ mainly depend upon canal irrigation
- b) No water salinity and waterlogging are observed in the field
- c) Reduction in water losses in the field
- d) Equity in water distribution at Head/Mid/Tail
- e) No tree was cut down during the improvement of Watercourse
- f) Weed cleanness was done by farmers in cooperation with Water User Association
- g) Watercourse does not choke after improvement when water passed through it.

Impact of the

The improvement of Watercourse resulted in;

- Time saving in the application of one-go irrigation has been improved (from 2 to 2.25 to 1 to 1.5 hours/Acre).
- Land price before lining / Improvement of watercourse was Rs. 1.5 to 1.8 Million / Acre and now land rate after improvement of watercourse has increased to 3.5 to 4.0 Million /acre.

4.2.3 Regular Monitoring / Field Visits by Zonal Office KP

ME&IE consultants of KP Zone reviewed the Monitoring tools as per direction of the Team Leader and give their comments / observation as per experience gained during the first phase of Baseline Survey. Zonal team of KP collected data from the Director General OFWM KP office for the Dashboard. Teams conducted meetings with District Director DR. Rab Nawaz during the process of data collection.

Data of all completed schemes of Watercourses and Water Storage Tanks for the year “2019-20, 2020-21 and 2021-22” were collected by reviewing the hard copies of data files provided by district Directors of OFWM KP for “Online Dashboard”. ME&IE Teams remained engaged in collection of data which was further uploaded to the computer system in close coordination with Mr. Rizwan Saleem, Incharge ICT Team.

Overall data for 1739 completed water courses and 572 water storage tanks was collected till the reporting period and has been transferred to computers systems.

Detail of the data collection of 33 districts of KP for Dashboard is given in Annex D.

4.2.4 Regular Monitoring / Field Visits by Zonal Office Balochistan

The ME&IE Consultants, Balochistan conducted several activities during the reporting month i.e., January 2022. The Balochistan team accomplished the assignments and submitted all deliverables timely. The activities done by the Balochistan team are listed below:

- i. Pre-Testing of MTs / Regular Monitoring.
- ii. Success Story
- iii. Meetings with OFWM officials and other stakeholders.

4.2.4.1 Revision and Pre-testing of MTs

The ME&IE Consultants, National Office Islamabad conducted 02 Days Workshop i.e., 3rd and 4th of January 2022. All Core Team Members and Deputy Team Leaders / Provincial Heads participated the meeting along with their field staff. In the workshop the Monitoring Tools related to Watercourse and Water Storage Tanks were discussed in detail. The participants gave their suggestion in the light of experience / lessons learnt during the first phase of Baseline Survey. The forum also highlighted the bottlenecks faced during the first baseline survey and emphasized to address in second phase of Baseline Survey. All MTs have been revised and amended as per different agriculture patterns, type of constructions, etc. of each province.

At the closing of the workshop, it was decided that all provincial teams will pre-test the revised MTs on ground and submit their feedback to the National Office Islamabad. After feedback from all provinces, it will be uploaded on the ODK System for second phase of Baseline Survey.

In this context Balochistan Field Teams selected 03 districts i.e. Quetta, Zhob and Jaffarabad for pre-testing the MTs and Monitoring visits.

Team Composition:

The Balochistan Field Teams were comprised of 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

Team -3

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

The field team - 1 visited Jaffarabad district, field team -2 visited Zhob District and field team – 3 visited Quetta district. All teams were assigned 02 interventions i.e. 01 Watercourse and 01 Water Storage tanks of allocated district.

4.2.4.2 Field Visits by Zonal Team Balochistan

Detail of monitoring visits conducted by Balochistan ME&IE field teams is given below.

Monitoring visits conducted by Manzoor Ahmed Kasi, M&E Expert and Mah Gul Noor & Hamza H. Qureshi, M&E Officers Quetta Division.

a) Field Visit Date: 27th January 2022

Scheme	Water Storage Tank
Farmer Name	Muhammad Anwar Raisani
Name of village:	Panjpai
Union council:	Panjpai
Chairman WUA:	Muhammad Anwar Raisani
District:	Quetta
Tehsil	Panjpai
Source of irrigation:	Tube Well
Shape of Water Storage Tank:	Square
Size of water storage tank:	50x50
Depth of WST:	4.5
Command area of water storage tank:	40 Acres
No of beneficiaries:	1
Cropping intensity increased	Increased by 25% Approx.
Crops yield increased	Increased by 30% Approx.
Equity in water distribution increased	No Problems related to Equity in Water Distribution
Reduction in water disputes/thefts	No problems related to water theft
Poverty reduction through generation of employment.	Labor Force Increased by 40%
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> The WST helped the farmer to save his Farm, which was about to be wasted due to non-availability of

	<p>water</p> <ul style="list-style-type: none"> ● Cultivated area has increased after WST construction. ● The construction of WST caused Water saving as well as time saved during conveyance of water to the farm. ● Due to the construction of WST, farmers adopted tunnel farming for nursery plantations of vegetables.
General Observations	<ul style="list-style-type: none"> ● Due to this WST, the farmer was willing to increase his farm area for the production of Pistachio, Grapes and Fig. ● Farmer was well aware and if provided with an improved variety of seeds for crops, vegetables and fruits, the production on his farm may boost. This may also cause his fellow farmers to get motivation and ownership. ● The DDA OFWM, Quetta and his field team frequently support and interacted with this farmer due to which he became aware about new technologies i.e. drip irrigation system etc., ● This area is best for low delta crops, fruit trees and vegetable plants. The farms can increase production, which can contribute to the GDP of Balochistan province and Country in the long run with the support of the Department.

ME&IE Team of consultants also interviewed the farmers for pretesting the revised questionnaires. Pictorial views of the visit is given in figures 4.10 to 4.13.



Figure 4.10: Scheme Board of Water Storage



Figure 4.11: View of Water Storage Tank



Figure 4.12: Interviewing the farmer / Pre-testing of MTs



Figure 4.13: Preparation of tunnel for vegetable farming

Monitoring visit conducted by Manzoor Ahmed Kasi M&E Expert and Mah Gul Noor & Hamza Hussan Qureshi M&E Officer Quetta Division.

b) Field Visit Date – 31st January 2022

Scheme:	Watercourse
Name of Farmer:	Malik Ghulam Farooq Shahwani
Name of village:	Killi Khalli
Union council:	Shadinzai
Chairman WUA:	Malik Ghulam Farooq Shahwani
District:	Quetta
Tehsil:	Quetta
Source of irrigation:	Tube Well
Total length of watercourse:	4000 rft.
Estimated length of lining:	2000 rft.
Command area of watercourse:	14 Acres
No of beneficiaries:	1
Reduction in Water Logging and salinity	<i>No water logging or salinity in this area</i>
Cropping intensity increased	Increased by 20% Approx.
Crops yield increased	Increased by 400% Approx.
Equity in water distribution increased	<i>No Problems related to Equity in Water Distribution</i>
Reduction in water disputes/thefts	<i>No problems related to water theft</i>
Poverty reduction through generation of employment.	15% increase in labor force which also differs depending on the activities of the farm.
Overall feedback of Farmer / Beneficiary	<ul style="list-style-type: none"> Due to the provision of this WC, area of

	<p>cultivation has been increased, duration between irrigations has decreased (more frequent irrigations).</p> <ul style="list-style-type: none"> Farmer was demanding to have any industry deployed near his farm so that his production of tomato to be used for value-added products, as his total production of tomato is very high. If the Government supports us with tunnel farming, it would be helpful for growing nurseries of vegetables. The farmer was very happy and was appreciating DDA, OFWM and his staff's support at all the times.
General Observations	<ul style="list-style-type: none"> This farm had an improved variety of trees for Peach and Apricot, as well as an improved variety of grapes. The demand of farmers for any value-addition plant to be placed near his farm can result in a positive boost in the GDP. It is suggested that the Directorate of Women Division of Agriculture Extension department may provide training and awareness to the females of this area on village and school level, so that they may be able to participate in

	processing of value-added products from the produce of this farm and other farms in this area.
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Pictorial view of the visit is given in Figure 4.14 to Figure 4.15.



Figure 4.14: View of Watercourse,



Figure 4.15: Interviewing the farmer during Pre-testing of MTs

Monitoring Visit Conducted by Muhammad Tariq M&E Expert and Mr Saleem Abro M&E officer Naseerabad Division.

c) Field Visit Date – 28-01-2022.

Scheme	WST
Farmer Name	Deen Muhammad
Name of village:	Deen Muhammad
Union council:	Cattle Farm
Chairman WUA:	Deen Muhammad

District:	Jaffarabad
Tehsil	Jhat Pat
Source of irrigation:	Canal
Shape of Water Storage Tank:	Rectangular
Size of Water Storage Tank:	50 x 50
Depth of WST:	4.6 Feet
Command area of Water Storage Tank:	20 Acre
No of beneficiaries:	05
Quality of work	Good
Cropping intensity increased	Yes 40%
Crops yield increased	Yes 20%
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Overall feedback of Farmer / Beneficiary	Former was satisfied with the scheme and requested for more schemes in upcoming Financial Years, so that he can increase his cultivated area.
General Observations	<ul style="list-style-type: none"> • Former was happy. • Quality of work was good. • Crop intensity has been increased.

Pictorial views of the visit are given in figures 4.16 to 4.17 below:



Figure 4.16: View of Deen Muhammad Water Storage Tank



Figure 4.17: ME&IE Teams in discussion with farmers/beneficiaries collection information, district Jaffarabad

d) Field Visit Date – 31-01-2022

Scheme:	Watercourse
Name of Farmer:	Dost Ali Lehri
Name of village:	Aachar Khan Lehri
Union council:	Naseerabad
Chairman WUA:	Dost Ali Lehri
District:	Jaffarabad
Tehsil	Jhat Pat
Source of irrigation:	Canal
Total length of watercourse:	1150 ft
Estimated length of lining:	1150 ft
Command area of watercourse:	50 Acre
No of beneficiaries:	05
Reduction in Water Logging and salinity	Water Logging and Salinity not observed at this site
Cropping intensity increased	Yes
Crops yield increased	Yes
Equity in water distribution increased	Yes
Poverty reduction through generation of employment.	Yes
Overall feedback of Farmer / Beneficiary	Former was happy and satisfied due to development of scheme.
General Observations	<ul style="list-style-type: none"> Crop intensity has increased.

The pictorial views of the visit are given in Figures 4.18 to 4.19 below:



Figure 4.18: Watercourse District Jaffarabad



Figure 4.19: ME&IE Team gathering information from farmers/beneficiaries at Watercourse District Jaffarabad

Monitoring Visit Conducted by Naseeb Jan M&E Expert Zhob Division

e) Field Visit Date: 28-01-2022

Scheme	Water Storage Tank
Farmer Name	Baz Muhammad
Name of village:	New Abadi Badenzai
Union council:	Badenzai
Chairman WUA:	Baz Muhammad
District:	Zhob
Tehsil	Zhob
Source of irrigation:	Tube Well
Shape of water storage tank:	Rectangular
Size of water storage tank:	50 x 50
Depth of WST:	4.6 Feet
Command area of water storage tank:	20 Acre

No of beneficiaries:	05
Cropping intensity increased	Yes 40%
Crops yield increased	Yes 30%
Equity in water distribution increased	Yes
Reduction in water disputes/thefts	Yes
Poverty reduction through generation of employment.	Yes
Overall feedback of Farmer / Beneficiary	Farmer suggested for more interventions and appreciated the OFWM staff for their keen interest and facilitation which enabled him to enhance the cultivated area.
General Observations	<ul style="list-style-type: none"> Former was happy. Quality of work was good. Cultivated area has increased.

The pictorial views of the visit are given in Figures 4.20 below:



Figure 4.20: FTI gathering information from farmer/beneficiary at of Water Storage Tank, District Zhob

Chairman WUA:	Muhammad Gul
District:	Zhob
Tehsil	Zhob
Source of irrigation:	Tube Well
Total length of watercourse:	2000 ft
Estimated length of lining:	2000 ft
Command area of watercourse:	25 Acre
No of beneficiaries:	05
Reduction in Water Logging and salinity	Not observed at this site
Cropping intensity increased	Yes
Crops yield increased	Yes
Poverty reduction through generation of employment.	Yes
Overall feedback of Farmer / Beneficiary	Farmer was satisfied and interested in more schemes.
General Observations	<ul style="list-style-type: none"> Former was happy. Cultivated area was increased due to this intervention. Quality of Work was satisfactory. WC was need to clean up

The pictorial views of the visit are given in Figures 4.18 to 4.17 below:



Figure 4.21: ME&IE FTI Interview the Farmer

f) Field Visit Date: 31-01-2022

Scheme:	WC
Name of Farmer:	Muhammad Gul
Name of village:	New Abadi Badenzai
Union council:	Badenzai



Figure 4.22: FTI interviewing Farmer/Beneficiary at Watercourse, District Zhob

4.1 ONLINE DATA ENTRY IN ANDROID BASED APPLICATION

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

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

4.2.1 Meetings of ME&IE Consultants – Punjab Zone

Field staff of ME&IE consultants' coordination with field staff of OFWM is a regular feature. The ME&IE Consultants remained in close contact with OFWM field staff throughout the period under review. Such coordination at Deputy Director/Assistant Director at District and tehsils levels facilitates the consultants for smooth operation of Monitoring/ Baseline Survey in accomplishing the overall objective of the project. Detail of meetings held during the reporting month is given below.

Meeting with Assistant Director (OFWM) – Kot Radha Kishan

Date	January 13, 2022
Venue	Site of watercourse 45316/L Village bhai kot 3 Tehsil Pattoki District Kasur
Participants	

- 1) Dr. M. Nadeem Jaffri Assistant Director (OFWM) Tehsil Kot Radha Kishan District Kasur
- 2) Mr. Rizwan rai Water Management Supervisor (OFWM)
- 3) Mr. M. Rizwan Suleman Field Team In-charge /ME&IE Expert
- 4) Mr. Muhammad Zubair Field Team In-charge / ME&IE Expert
- 5) Mr. Shahid Khalil Field Team Engineer

Meeting Agenda:

Progress review of the project activities. Basic Data Collection of Monitoring/Baseline Survey Phase – II / Issue faced by the farmer

4.2.2 Meetings of ME&IE Consultants – KP Zone

Meeting in OFWM Office Peshawar

Meeting Date	January 28, 2022
Venue	On Farm Water Management Office, Peshawar
Participants	
<ol style="list-style-type: none"> 1) Dr. Rab Nawaz (Project Coordinator/ District Director) (Chaired the Meeting) 2) Dr. Humayun Khan, Deputy Team Leader KP (G3 Consultants) 3) Dr. Saiful Islam Dy. Project Coordinator, NPIWC II, Islamabad 4) Engg Ilyas DTL NESPAK, TPV consultants-NPIWC-II 	
Meeting Agenda /Points Discussed	
Main Agenda of the meeting was Data sharing by the Department and discuss the Progress till date.	
This meeting was held on verbal directives of Dr. Saiful Islam Dy. Project Coordinator NPIWC-II. The meeting was held in the office of Dr. Rab Nawaz Directorate of Water Management Department KP Peshawar and was chaired by Dr. Rab Nawaz Khan.	
Dr. Saiful Islam DPC NPIWC -II asked Dr. Rab Nawaz about the progress of project activities and method sharing the data files of each district with M&E consultants. Following were the further discussions held in the meeting.	
<ul style="list-style-type: none"> • Dr. Rab Nawaz shared the Workplan of 2019-2020 & 2020-2021, 2021-22 (Physical and Financial) with M&E consultants. 	

- All the data files maintained from start of the project till date of each district have been provided to M&E consultants for data entry process.
- Peshawar and nearby districts files was provided to M&E consultants at Peshawar OFWM office.
- Other far distanced districts were covered by visiting one district and near districts were brought 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 dates column and WUA registration number information in future.
- Dr. Humayun Khan also explained to the DPC NPIWC-II about the data entry process of the acquired data and the progress made so far.

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.

The meeting ended with a vote of thanks by Dr. Rab Nawaz.

Pictorial view of the meetins is given in Figures 4.23 to 4.24 below:



Figure 4.23: ME&IE Team and Dr. Saiful Islam DPC NPIWC-II in Meeting with Dr. Rab Nawaz Khan, District Director OFWM Peshawar



Figure 4.24: DTL ME&IE Consultants KP Dr. Humayoun Khan in Meeting with Dr. Rab Nawaz Khan, District Director OFWM Peshawar

4.2.3 Meetings of ME&IE Consultants – Balochistan Zone


Date	26 th January, 2022
Venue	Office of the DDA OFWM, Quetta
Participants	
1)	Noor Ahmed, DDA OFWM, Quetta.
2)	Abdul Ghafoor Jaffar, Agriculture Officer.
3)	Muhammad Ibrahim, Agriculture Officer.
4)	Himayun Muree, Agriculture Officer.
5)	Zahoor Ahmed, Sub-Engineer, Panjpai.
6)	Manzoor Ahmed Kasi, FTI/M&E Expert.
7)	Mah Gul Noor, M&E Officer.
8)	Hamza H. Qureshi, M&E Officer.
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> • Finalization of the Beneficiaries list for the F.Y 2021-2022. • Informed about the visits of the ME & IEC team that were planned for the Pre-testing of the MTs. 	

Pictorial view of the meeting is given in Figure 4.25 below:





Figure 4.25: ME&IE Team in Meeting with the DDA OFWM, Quetta and his Field team

Date 26th January, 2022

Venue	Directorate of Women Division, Agriculture Office, Quetta
Participants	
1)	Shazia Kurd, DDA Women Division, Quetta
2)	Manzoor Ahmed Kasi, FTI/M&E Expert.
3)	Mah Gul Noor, M&E Officer.
4)	Hamza H. Qureshi, M&E Officer.
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> Introduction of the ME&IEC teams to the Women Division, Quetta. Requested the Women Division to arrange Trainings for women, girls at village and school levels where NPIWC-II activities are being initiated, so that they can play their effective role in making NPIWC-II project more successful. A demonstration was given of the Value-added products by the women division to the ME & IEC team. 	
The pictorial view of the meeting is given in figure 4.26 below:	
	
<p><i>Figure 4.26: DDA Women Division Showing to ME&IE Team, all the Value-added Products, produced all over Balochistan</i></p>	

Date	25 th January, 2022
Venue	Office of the DDA OFWM, Naseerabad
Participants	
1)	Mr. Anwar Aadil, DDA,, OFWM, Naseerabad
2)	Mr. Ali Mardan, Sub Engineer, OFWM, Naseerabad
3)	Mr. Tariq Khoso, FTI/M&E Expert, ME&IE Consultants, Naseerabad Zone.
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> A Meeting held with DDA, OFWM, Naseerabad to discuss the new schemes (F.Y. 2021-22) The FTI/M&E Expert, ME&IEC shared the visits plan for pre-testing of MTs / Monitoring Site with request to extend their support regarding data provision / 	

field assistance
The picture of the meeting is given as Figure 4.27 below:

<p><i>Figure 4.27: Meeting with DDA, OFWM, Naseerabad at his good office.</i></p>

Date	26 th January, 2022
Venue	Office of the DDA OFWM, Jaffarabad
Participants	
1)	Mr. Babal Khan Bhangar, Sub Engineer, OFWM, Jaffarabad
2)	Mr. Abdul Fateh, Sub Engineer, OFWM, Jaffarabad
3)	Mr. Israr Jamali, Field Assistant, OFWM, Jaffarabad.
4)	Mr. Tariq Khoso, FTI/M&E Expert, ME&IE Consultants, Naseerabad Zone.
Meeting Agenda/Points discussed:	
<ul style="list-style-type: none"> A Meeting was held with OFWM staff to discuss and share Project progress. Discuss the Beneficiaries list for the F.Y 2021-2022. Informed about the visits of ME&IEC team that were planned for the Pre-testing of the MTs / Monitoring of site. 	
The picture of the meeting is given as figure 4.28 below:	
	
<p><i>Figure 4.28: Meeting with DDA, OFWM, Naseerabad at his good office.</i></p>	

4.3 INTERNAL MEETINGS OF ME&IE CONSULTANTS

Zoom Meeting from 03 Jan. 2022 to 05 Jan. 2022

A Three days (03 January 2022 to 05 January 2022) Zoom meeting for review / discussion session on monitoring tools was conducted by DTL ICT Islamabad. Besides all the field staff of the project, the respective DTLs of various zones attended the review Sessions. Pictorial view of the Zoom Meeting is given in Figures 4.29 to 4.30.

Date	03 January 2022 to 05 January 2022
Venue	Zoom Meeting under Chair of Team Leader Organized at National office Islamabad with all Zonal Offices
Participants	<ol style="list-style-type: none"> 1. Dr. Usman Mustafa (Team Leader, Islamabad) 2. Dr. Umer Farooq DTL. ICT. (Islamabad) 3. Rizwan Ahmed. DTL. Quetta, (Balochistan) 4. Dr. Humayun Khan DTL. Peshawar (KP) 5. Muhammad Yousaf Bhatti DTL. Lahore (Punjab) 6. Dr. Muhammad Abdul Quddus Malik Agri. Economist 7. Muniza Bashir Tarar Social and Gender Specialist 8. All field team In-charges and Field Team Members of Zonal Offices.
Meeting Agenda	<p>The meeting agenda was to review/discuss the revised Monitoring Tools of Watercourses Improvement and Water Storage Tanks Interventions. Timings of this three days' meeting remained from 10:00 AM to 04:00 PM every day with 1 hour break from 01:00 PM to 03:00.</p> <p>Proceedings of 1st Day i.e. 3 January 2022 Monitoring Tools on for Intervention of Watercourse Improvement, Beneficiaries of the intervention and cost of production of various crops were discussed.</p> <p>Proceedings of the 2nd Day i.e. 4 January 2022 Template of Watercourse Improvement Monitoring, Questionnaire on Social and Gender Structures and Guideline on Case Studies were discussed.</p> <p>Proceedings of the 3rd Day i.e. 5 January 2022 Monitoring Tools for Intervention of Water Storage Tank were discussed. During these three days, detailed discussions were held on different issues, questions, wordings, understanding of a question by the monitor and the respondent / beneficiary.</p>

Almost all the questions were discussed to get proper feedback from the participants.

Almost all the agreed suggestions and comments were incorporated in the monitoring tools by the host DTL Islamabad Dr. Umer Farooq.



Figure 4.29: ME&IE Consultants' Zoom Meeting

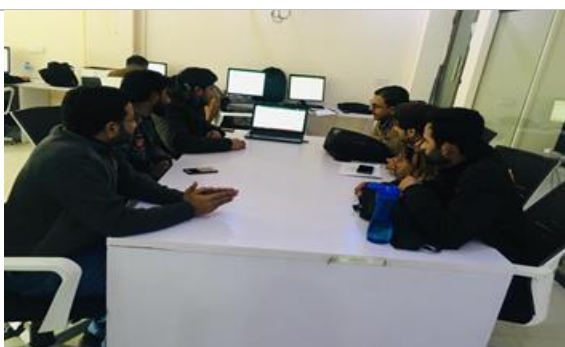


Figure 4.30: ME&IE Field Teams in Zoom Meetings

4.4 ICT ASSIGNMENT

ICT Team remained engaged in different activities related to the ME&IE assignment including development of Android based application, data collection for Dashboard and training of client staff on Dashboard / MIS for the project. ICT Specialist also conducted with Technical Staff of DG OFWM Punjab. ICT Expert also conducted training meetings in Water Management office Islamabad.

4.4.1 Development of Customized Android Based Applications

The ICT Technology Team of ME&IE Consultants NPIWC-II has developed Customized Android Based Applications for data collection. Data entry in this application is done directly by the field monitoring teams of all the zonal offices and is

uploaded in the MIS system. The data is being observed and monitored by the ICT team of ME&IE Consultants.

In this regard, customized Android Based Applications have been developed, tested, and installed to Small Dams and Irrigation staff of AJK and Water Management Staff of ICT zone. Except for installation the development and testing phases has been completed in KP zone as well.

4.4.2 Data collection of interventions in MIS/GIS database

The activity regarding data collection of Interventions in MIS/GIS database was completed in KP Zone in December 2021. Following activities have been carried out in this regard during the reporting month.

- Data cleaning and validation has been completed. Missing data has been communicated to concerned DDs of OFWM department. The ICT representative in KP zone is in touch with said DDs for acquiring missing data. This process is expected to complete in the 3rd week of February 2022.
- The data collection for the dashboard is in progress in Balochistan. The ICT team is facing problems in data collection because a lot of data is missing which was required by the ICT team for Implementation of MIS Dashboard.
- The ICT team of the National Office Islamabad under the supervision of ICT Technology Specialist is planned to visit the Balochistan zone to conduct meetings with department officials to resolve the issues and fill the gaps.
- Meeting has been conducted with Technical Team of OFWM department Punjab chaired by the system analyst OFWM department Punjab (Annex-1). During the meeting ICT Technology Specialist has briefed them on development of Monitoring Tools, Implementation methodology, Development of customized Android based Application, Development, and Implementation of MIS Dashboard of Dashboard. Later, MIS Dashboard and customized Android based application has been demonstrated to the Technical Team.

- The Technical Team showed their satisfaction on the briefing given by ICT Technology Specialist of ME&IE Consultants and showed intention to cooperate in the future.

4.4.3 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.

In AJK, the field enumerators of Small Dams & Irrigation which were trained by ME&IE Consultants are entering the data of newly issued Technical sanctioned Watercourses and Water Storage Tanks and updating already entered data of WC and WST through customized Android Based Applications.

The ICT team is continuously in process of cleaning and validating the received data and communicating mistakes to the concerned ADs for correction. Implementation phase of MIS Dashboard in ICT and KP Zones is progressing positively towards completion.

4.4.4 Training and Capacity Building

A training workshop was held in ICT zone on 14 January 2022 in Agriculture Complex Islamabad (Figures 4.31 & 4.32). The nominated staff by the department has been trained on use of customized Android Based Data Collection Application. MIS Dashboard presentation is planned in the second week of February 2022. Capacity building training and MIS Dashboard presentation in KP zone is delayed due to non-availability of Project Director OFWM KP who is currently out of country. Training will be carried out after his return to Pakistan.



Figure 4.31: ME&IE ICT Expert Giving Training to Staff of Islamabad Water Management Staff



Figure 4.32: ME&IE ICT Expert Giving Training to Staff of Islamabad Water Management Staff

4.5 MONITORING / DATA COLLECTION ON SOCIAL AND GENDER COMPONENT

Maximum of the deprived people in developing countries live in rural areas, and most of them depend directly or indirectly on agriculture for their livelihoods. In many parts of the world, women are the main farmers or producers, but their roles remain largely unrecognized. Both men and women participate in agricultural activities, Agriculture is supposed to be a pathway out of poverty

The vital role of agriculture in sustainable development and its importance in achieving the sustainable development goal is reducing half by 2030 the share of people suffering from life-threatening poverty and hunger. Rising food prices are reminders of the need to focus on food security and agriculture for development; and the different case studies presented the gender in agriculture suggests that accounting for the different roles of women and men and gender equality in access to resources and opportunities is a necessary condition for doing so. It is imperative to design strategies to involve both male and female in rural and agriculture development

Gender equality and women's empowerment, and the associated principles have the potential to make a difference in the lives of hundreds of millions of rural poor.

In NPICW-II project activities are now affecting lives of the beneficiaries. Few case studies by provincial teams are prepared which shows increase in growth and income. This will be creating great impact on their livelihood which leads towards development in all fields.

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 consist 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.

Draft Case Studies prepared by the provincial teams of ME&IE consultants are presented below.

4.6.1 Case Study of Intervention in ICT Zone

Commercial Gladiolus Farming from Rain Water in Nallah Pumped into a Storage Tank: A Replicable Success Story from Islamabad

Pakistan is becoming a fast water-scarce country for farming. The realization of due importance of the issue is now present among high-ups at planning, policy and agricultural research & development (R&D), various ministries and allied department levels. Farmers in Islamabad Capital Territory (ICT) largely depend on erratic rainfall, and not taking place at stages of crop growth. Therefore, considerable amount of this water is not used for farming purposes and it is finally drained into streams and nallahs. To tackle this long-prevailing issue, under Prime Minister of Pakistan's National Agriculture Emergency Program, the 2nd phase of National Program for

Improvement of Watercourses (NPIWC-II) was launched to enhance farming households' income from crop sector. The improvement of water courses, construction of storage tanks and provision of laser land levelers are its salient component.

ICT farmers' cropping patterns are mainly household food and animal feed securities oriented. Wheat is their prime rabi crop, while in kharif, maize, sorghum and millet are sown as dual-purpose (grain + fodder) crops. Fruits and vegetables are optional --- if grown, then mostly consumed locally.

ME&IE Consultants visited a farm in ICT Zone growing cut flowers (Gladiolus) at commercial Level (Figure 4.34)



Figure 4.33: View of Water Storage Tank Source of Water for Irrigation of Gladiolus Farm

The Context

In Pakistan, the demand for cut-flowers has been recently grown tremendously. Wedding, birthday parties, religious gatherings, shrines Sufi saints, meetings/lectures/seminars/conferences, receiving guests at airports and other social gathering are incomplete without floral decoration. Cut-flower demand has also greatly increased in small cities like Islamabad for their use in hotels, meetings and the functions of schools, colleges and universities.

The rose, jasmine and other ornamental flowers' cultivation is generally confined to peri-urbans of big cities. In Punjab, there are four major flower wholesale markets located at Pattoki, Saggian, Theengmor and Tibba Sultanpur. Being famous for flowers farming and their highly competitive

marketing, Pattoki city of Kasur district is known as "City of Flowers".

Gladiolus is a Garden Flower Grown for its use in Ornamental Purposes. It is also one of the Top Five Internationally Traded flowers.

- ❖ Gladiolus bears an economic and aesthetic value for its special look and unique elegance.
- ❖ Its sticks are widely used in bouquets, flower arrangements, artistic garlands, etc.
- ❖ In international trade it is 4th most traded flower, while in Pakistan, it ranks 2nd after rose cut follower, in consumer preferences and domestic flower sales.
- ❖ Its is available in different colors like white, creamy white, light purples, orange, contrast marking, orange, pink, red, etc.
- ❖ It grows well in well drained loamy soils having sufficient organic matter at ridges with inter-plant

distance of 6 to 8 inches. About 60 thousand plants can be easily grown at one acre land.

- ❖ It requires 10-12 hours long full exposure to clear sunlight free from fog or frost.
- ❖ The tropical climate plains of Punjab and rainfed Pothwar including Islamabad are best suited to its commercial farming.
- ❖ It blossoms from October to March in Plains and June to September in hilly areas.
- ❖ Aphids, thrips, cutworm, mites and maggots usually attack the plant. Corm rot is its one of the high damage causing diseases. For their control, local agricultural extension and/or plant protection personnel of the area may be consulted.

Glad-Farming Prospects in Islamabad

Gladiolus is a flower of sub-tropical and temperate climatic condition. Well-drained sandy loam and loamy soils, rich in organic matter and pH 6.0 to 6.5 are ideal for its healthy growth and higher yields. However, it is highly sensitive to frost condition. The climate of Islamabad is also humid sub-tropical with four seasons: Very pleasant spring prevails in March-April; hot summer ranges from May to August; cold winter span is from November to February; monsoon season is from June to September, with heavy rainfalls and evening thunderstorms. Hence, climatic conditions of Islamabad grossly suit to Gladiolus farming by practicing proper crop management practices.



Figure 4.34: Gladiolus Flowers

OFWM Department Explored Suitable Sites

The OFWM Islamabad project activities are consisting of exploring suitable sites for gainful harvesting of rain water for crop and livestock farming purposes in the region. In site searching and selection process, the project team approached a progressive farmer Mr. Raja Zaheer Akhtar from

Phulgran village for convincing him to invest in constructing water storage tank.

On appreciation of OFWM department Islamabad, Raja Zaheer agreed to construct a water storage tank by installing a lift-pump for pumping water from nullah flowing along one of the parcels of his farm. After necessary departmental processes & procedures, he was able to get this water for irrigating his field. The OFWM Department also monitored the farming activities at newly created parcels of their project sites, as per their activity plans.

The Success Story of Raja Zaheer Akhtar

In 1st week of January 2022, the Team of ME&IE Consultants NPIWC-II along with Mr. Gufran Memon, Deputy Director, OFWM Islamabad Office visited Raja Zaheer Ahmad's farm to examine/ monitor the farming activities in post-water tank construction period in terms of changes in cropping patterns, impact on crop yields, income, food and food security, etc. The team was surprised to see that contrary to a priori expectations about shifting to fodder and/or vegetables farming, he was found successfully growing gladiolus as cut-flower for selling flower market at Banni Chowk, Rawalpindi and Islamabad cut-flowers/bouquet sellers.

On probing for this amazing development, Raja Zaheer told that in the first season, he was shift to cultivating fodders for livestock and vegetables for self-consumption and/or selling to nearby roadside market by using this newly created irrigation water facility. He planted off-season tomatoes for which he has also constructed a tunnel. "I was failed due to lack of due experience in vegetables farming, lack of knowledge about supply patterns to be adopted for tunnel tomatoes --meaning when to market" -- he said.

On advice of one his friends associated with cut-flower business in Lahore Raja Zaheer switched to plantation of Gladiolus on his farm. His friend advised, convinced and helped him in establishing his contacts in the Rawalpindi flower market. Also, he helped him by arranging a laborer from Pattoki flowers farming area for managing his Gladiolus fields. This laborer is getting Rs.20,000/= per month plus meals - the highest in the area. Following the advice of his, in the very next season, Raja Zaheer planted 15 thousand Gladiolus bulbs on 6 kanal parcel of located alongside of the nullah. In the very first year, his income from this parcel was 20 times compared to

the income from crops like fodders and/or vegetables. He has applied little Farm Yard Manure, 1 bag of DAP, 1 bag of Urea and sprays.

During conversation, he also said that before this opportunity, he was growing wheat, barley, maize, sorghum, millet, etc. His prevailing yields from this parcel were about 20 maunds of wheat, 80-100 maunds of fodders and 20 maunds of maize.



Figure 4.35: Gladiolus Supplied in Market

4.6.2 Case Study of Intervention in Punjab

A JOURNEY OF CULTIVABLE WASTE TO A GREEN FIELD

“Gone are the days now when there were conflicts on water thefts and inequitable distribution of water. Farmers are now quite happy and satisfied with the rehabilitation of water courses which have increased the irrigation rate of the lands and elevated the yields of the crops.”

Mr. Amanat Ali, Share Holder on WC 45316-L, Chak No.3, Bhai Kot, Pattoki, Kasur

Mr. Amanat Ali is a traditional farmer of Chak no. 3 Bhai kot, Tehsil Pattoki, District Kasur. He inherited from his parents a piece of land measuring **12.5 acres**. He has been involved in farming operations since his childhood. His farm area is located in the middle of a water course and has saline ground water, unfit for cultivation of crops.

The brief profile of the watercourse and respondent is given below and pictorial view of meeting with farmer is given as Figure 4.37.

Brief Profile of Watercourse and Respondent

Name of Respondent	Mr. Amanat Ali S/O Gohar Ali
Watercourse ID	45316- L
Address	Chak No.3, Bhai Kot, Pattoki, Kasur
WUA Chairman	Muhammad Junaid Iqbal
WC Type	Additional
Status of WC	ICR-II
Sanctioned Lining Length	232 m
Total Length	8589 m
CCA	729 acres
Financial Year	2021-22
Farm Area	12.5 acres
Cultivated Area	10 Acres
Culturable Waste	2.5 acres up till kharif 2021



Figure 4.36: Mr. Muhammad Zubair FTI ME&IE Consultants Questioning Mr. Amanat Ali

As per statement of Mr. Amanat Ali, he previously used to grow few crops mainly depending upon rainfall because of lack of irrigation water facilities. He was able to cultivate only 10 acres, whereas 2.5 acres were culturable waste (view of farm is given as Figure 4.38). He used to grow some barani crops dependent on rainfall, as underground water is also brackish/saline canal water was inefficient to irrigate due to many reasons like:

- Unlined (Katcha watercourses)
- Water theft
- Influential Peoples on head of Watercourses
- Wara Bandi Problems

Strategy:

In pursuit of suitable technology to cultivate his barren land with limited water resources, Mr. Amanat Ali did research, discussed with his fellows, and visited OFWM Department. He discovered that farmers are being benefited from Cemented (improved) watercourses, such improved watercourses are of precast segments in parabolic shape for proper distribution of water and overcome the farmers issue regarding saving water.

"Although the government is providing a subsidy of 60% of total cost, I was nevertheless, a little worried about the success of the rehabilitation program of watercourses adoption on my land" Mr. Amanat Ali further shared."

Impact:

"My wheat this year on the culturable waste land of 2.5 acres after so many years is in full bloom. This is because of canal water availability through improvement of the watercourse. Following are the obvious impacts of the watercourse improvement.

1. The problem related to water theft, reduction of pressure of influential people and other so many small issues has been resolved.
2. With the increase in quantum of water supply his culturable waste land has been brought under cultivation.
3. The overall productivity of other areas of the farm is also expected to increase.



Figure 4.37: View of Mr. Amanat Ali's Wheat Crop

4.6.3 A Case Study of Intervention in Balochistan

Success Story on Pistachios Production through intervention of Water Storage Tank, NPIWC-II, UC Panjpai, District Quetta



Figure 4.38: Plants rich with Pistachio

During the current month i.e., January 2022, the ME&IE Consultant's Field Team visited the Union Council Panjpai which is Tehsil of district Quetta; it takes 1 hour, 45 minutes to travel from Quetta to Panjpai. Approximate driving distance between Quetta and Panjpai is 86 kms.

The ME&IEC field team met with Haji Mohammad Anwar Raisani s/o Haji Muhammad Nazar Raisani who was owner of 200 acres land, from which 40 acres land was being cultivated. The source of the Irrigation System was tube well. Cropping patterns in Rabi season were wheat, vegetables, fodder, caraway and in Kharif season onion, vegetables. In 2014 farmers planted 2,200 pistachios trees on 7 acres out of 40 acres. He grafted pistachio trees. Pistachios are always purchased as grafted trees and are generally not propagated by home gardeners because the appropriate rootstocks are not commonly available. There are many genetic varieties of pistachio. The farmer grafted imported Iranian Grafts which are the most popular in the world.



Figure 4.39: Pistachio Plants

Plantation of Pistachios

Growing pistachios isn't an option for everyone because of their specific climate needs. The biggest factor to consider is the temperature, humidity, and rainfall of the area. Pistachio trees require very hot temperatures during the day and don't appreciate high humidity or wet soil. It does best in sandy, well-draining, loamy soil. Infrequent, deep watering is best. Pistachios require long, hot, dry summers and chilling in the winter, but don't tolerate ground that freezes. They require approximately 1,000 accumulative hours of temperature at or below 45° F during dormancy. The environment needs to be arid.

From 2014 to 2018, in about five years, taking care of these 2,200 trees was not less than a big challenge for the farmer; he was using a tractor tanker for watering at heavy cost to save these trees. On one spot he lost hope till the end of 2018 as the trees were not growing as per essential conditions. Trees were about to be dehydrated.

In 2019 from an information source, the farmer heard about the Project funded by the Federal Government of Pakistan; National Program for Improvement of Water Courses Phase-II (NPIWC-II). He immediately contacted OFWM staff and requested them for the provision of a Water Storage Tank. The OFWM staff visited his farm and found a feasible site with genuine requirements. The OFWM staff took immediate action and processed his case to higher authority. Finally, his case gets approved and a WST (50x50) constructed in 2019 at his land (Figure 4.42).



Figure 4.40: Location of Water Storage Tank



Figure 4.41: View of Water Storage Tank

Due to the provision of this Water Storage tank and Drip Irrigation System, the 2,200 pistachio trees survived and gave their first production of 100 kgs in the first year i.e. 2021. Before construction of WST 40% of total farm area was irrigated.

After construction of WST, 90% of total farm area is being irrigated. After construction of WST 50% of total farm area is planted twice a year (Rabi & Kharif). About 40% Labor force increased on farms after construction of WST. Food production also increased. Now farmers have better control on water supply.



Figure 4.42: Solar System for Electricity & Water Supply

Drip Irrigation System and Solar Panels

After the construction of this Water Storage Tank, the OFWM staff shared knowledge about HEIS and suggested the farmer acquire the Drip Irrigation System for his farm, as the tree of pistachio requires deep watering and this irrigation system is best for pistachio trees. The farmer then agreed to have the Drip Irrigation System installed on his pistachio farm and contributed his share and for the HEIS the farmer installed solar panels as the source of electricity at his own expense. This is another help from the department for the farmer to enhance his cultivated area. View of meeting with the farmers is given as Figure 4.44.



Figure 4.43: ME&IEC Field Team taking interview from Farmer

Pistachio tree takes approximately seven to ten years to produce the first crop; you will receive a good yield of pistachios within 15 to 20 years to reach peak production.

In 2021 the first production of these trees was 100 kg. It was a great achievement for farmers. He is too motivated from production he has set the land to graft about 800 pistachio trees more on his farm. Further, he has planned to increase his cultivable land up-to 40 acres for the plantation of more pistachio trees, grapes and figs, also he has prepared nursery tunnels and vegetation tunnels to increase his cropping pattern.

Pistachios are a type of tree nut with numerous health benefits. Pistachios are an excellent source of protein, antioxidants, and fiber. The health benefits of pistachios may include a healthy heart, weight management, prevention of muscular degeneration, and hypertension, as well as improved digestion. It can also boost blood, brain, and skin health.

The current prevailing market price, available to be purchased by the customers, is around PKR.2200-2800/kg, depending upon the quality and grades of

the Pistachio. Let's assume that on the farm, the pistachio is sold at PKR.900-1200/kg and his total production on average is 42000 kgs approx. from 2200 trees, the farmer would get up to PKR.37.8 to 50.4million by selling the total production. In the open market the price of Pistachio is about PKR 2500/Kg and the expected income at open market is PKR.105 million to the customers.

The above data shows the total production of one farm, the suitable climate for farming of pistachio is in multiple districts of Balochistan and if we up the scale, pistachio can be grown in many other provinces of Pakistan too. Using the above projected income and revenue generated from pistachio, we can estimate the total income and revenue of pistachio on the National level which can contribute to the GDP and Per capita income of Pakistan.

*We must accept finite
disappointment, but never
lose infinite hope.
"Martin Luther King"*

Work done by:

Mr. Manzoor Kasi, FTI / M&E Expert
Mis. Mah Gull Noor, M&E Officer
Mr. Hamza Qureshi, M&E Officer

A WAY FORWARD:

- It is suggested that after seeking permission from the client a help line should be installed in all provincial offices or in client's offices to help and guide farmers to resolve their issues or grievance's.
- Women should be involved in all mobilization process in all phases so their views should be included.

CHAPTER 5: WORK PLAN-ACTIVITIES OF THE CURRENT QUARTER

The ME&IE Consultants' activities initiating during the first Quarter of year 2022 (January 1, 2022 to March 31, 2022) are listed below. A tentative Work Plan for 1st Quarter of the year 2022 (January 1, 2022 to March 31 2022) showing time span detail is given as **Annex-A**.

Pre Field Activities

- i) Review and Update Monitoring Tools for 2nd Phase of Baseline Survey
- ii) Preparation for Baseline Survey 2nd Phase field visit
- iii) Training of Field Teams for 2nd Phase of Baseline Survey

Field Activities

- iv) Data collection from OFWM Department /NWMC for Baseline survey/regular monitoring
- v) Data acquisition from Client for Dashboard
- vi) Data entry of Training Session of field staff and Key staff on Survey Manual of MTs and Android Base System
- vii) Training of Measurement of water flow-Pygmy current meter
- viii) Data entry, Data cleaning, Data processing & data Analysis
- ix) Regular Monitoring

ICT Assignment

- i) Development of Android based Mobile Application.
- ii) Data collection of interventions in MIS/GIS database.
- iii) Designing of dashboard of Project Interventions.
- iv) Data cleaning for Dashboard
- v) Training of Client staff for Dashboard

Coordination

- i) Meeting of DTLs with respective DTL of NWMC
- ii) Meetings of Team Leader and for refinement of Monitoring Tools.

Deliverables

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

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

Quarterly Monitoring & Evaluation Report-Fourth Quarter year 2021 (OCTOBER – DECEMBER 2021)	Submitted
Monthly Monitoring Report-Thirteenth (JANUARY 2022)	To be submitted within stipulated time
Quarterly Monitoring & Evaluation Report-First Quarter year 2022 (JANUARY – MARCH 2022)	To be submitted within stipulated time

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

Matrix of Responsibilities

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

CHAPTER 6: ISSUES / BOTTLENECKS

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

- Due to non-availability of NWMC (NESPAK) deliverables/reports, ME&IE Consultants are facing hurdles to evaluate working of NWMC. In this regard the cooperation of NWMC and respective Directorates is required.
- Non availability of Technical Sanctions of the watercourses required for baseline survey
- Non-availability of complete up-to-date inventory / data of all interventions from the Client, Provincial Agricultural Departments & NWMC (NESPAK) till to date.

ANNEXES A to E

ANNEX-A: TENTATIVE WORK PLAN

ANNEX - A: TENTATIVE QUARTERLY WORK PLAN (JAN. TO MAR 2022)

TENTATIVE WORK PLANNED FOR th QUARTER (January 2022 To March 2022)													Legend
													Activity starts
													Activity Ends
													Activity Span
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	NPC-FPMU	Agriculture Dept. (CEWM)	Project Consultants	ME&IE Consultants
1	Provision of Pre-requisite data of project components for starting of Field Activities: <ul style="list-style-type: none">• Organization of Water Users Associations,• Watercourses Improvement,• Water Storage Tanks,• Laser Land Levelers,	○	●	-	-
2	Certification of operational documents of the project, <ul style="list-style-type: none">• Design, cost estimates, completion reports of watercourses,• Design, cost estimates, completion reports of water storage tanks,	○	○	●	-
3	Undertake baseline, midline and endline surveys of the project activities/interventions in all the project areas.	-	-	-	●
4	Develop monitoring strategy, framework and Result Based Monitoring (RBM) indicators,	-	-	-	●
5	Assessing the water saving per annum on watercourse and water storage tanks as well as aggregate due to the project interventions.	-	-	-	●
6	Assessing the improvement in water availability due to provision of conveyance system.	-	-	-	●
7	Assessing the economic benefits to the agriculture in terms of increase in yield, irrigated area, cropping pattern, cropping intensity, farm income and employment in command area of watercourses and water storage tanks.	-	-	-	●
8	Assessing the extent of community mobilization, financial and administrative sustainability of Water Users' Associations and ensuring the maintenance of watercourses, water storage tanks and laser land levelers.	-	-	-	●
9	Economic Impact of project interventions.	-	-	-	●
10	Carryout impact evaluation of the project investment on the economy and stakeholders.	-	-	-	●
11	Preparation of Monthly, Quarterly and Annual Monitoring, Evaluation and Validation Reports of the project activities.	-	-	-	●
12	Develop a website containing information of facilities and services, applications, procedures, watercourses, water storage tanks, and laser levelers database etc. (Maintaining website should be the responsibility of project staff).	-	-	-	●
13	Provide technical support for the development of a custom-designed mobile application (Android) to capture on-site project progress, geo tagged photos; should be synchronized with the central MIS/GIS database and application for instant reporting and feedback to the	-	-	-	●

ANNEX - C: MONITORING LOG-FRAME

Annex-C: Monitoring Log-frame

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

C2: Watercourses Improvements	Improvement of 47,278 watercourses on cost sharing basis: 40% farmers in terms of labour, and 60% funded by project.	<p>a) Establishment of 47,278 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>a) 47,278 WCAs established;</p> <p>b) 47,278 WCAs registered;</p> <p>c) 47,278 watercourses improved and lined;</p>	<p>a) Conveyance losses for 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>a) Increase in cropping 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>a) Increase in farm income;</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>a) The water flow measurements 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;
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							<ul style="list-style-type: none"> • Before and after employment; d) The difference between before and after will be considered the result of the intervention after netting out the contribution of the growth pattern of the crop sector otherwise.
C3: Construction of Water Storage Tanks (WSTs)	a) Construction of 14,932 water storage tanks	a) 14,932 small farmers mobilized to construct water storage tanks for irrigation b) They agree to contribute 40% of the cost 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

		received subsidy at 40% on issuance of FCR					watercourses will also be used for WSTs d) Same data analysis will be carried out here as in case of watercourses.
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

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

Deliverables/Reporting Requirements

Sr. No.	Document	Copies	Due
1	Draft Inception Report	8	45 days after the effectiveness of the Consulting services Agreement.
2	Final Inception Report	15	One week after the issuance of comments by the Client on Draft Inception Report
3	Monthly Monitoring Report	10	10 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: DATA COLLECTED FOR KP DASHBOARD

Data Collected for the Year 2019-20, 2020-2021 & 2021-22

Districts	2019-20		2020-21		2021-22		Grand Total
	WC	WST	WC	WST	WC	WST	
Abbottabad	7	4	9	5			25
Bajaur	3	1	17	9			30
Bannu	38	2	15	2			57
Battagram	15	6	10	16			47
Buner	16	4	14	12			46
Charsadda	70	13	26				109
Chitral	12	4	29	2			47
Dera Ismail Khan	419	71			36	5	531
Dir Lower	21	3	24	4			52
Dir Upper	15	6	12	8			41
Hangu	30	14	3				47
Haripur	17	7	12	6			42
Karak	17	13	19	16			65
Khyber	6	1	13	9			29
Kohat	52	2	18	1			73
Kohistan	8	3	10	6			27
Kurram	3	1	5	1			10
Lakki Marwat	34	10	22	8			74
Malakand	27	7	18	5			57
Mansehra	35	5	13	8			61
Mardan	40	9	50	7			106
Mohmand	4	1	39	40			84
North Waziristan	2		3	8			13
Nowshera	28	13	43	18			102
Orakzai			1	2			3
Peshawar	43	9	16	8			76
Shangla	19	8	6	6	5	3	47
South Waziristan	5		10	15			30
Swabi	65	7	14	2	1		89
Swat	67	42	58	51			218
Tank	29	10	10	6			55
Torghar	2	3	3	2	6	2	18
Grand Total	1149	279	542	283	48	10	2311