



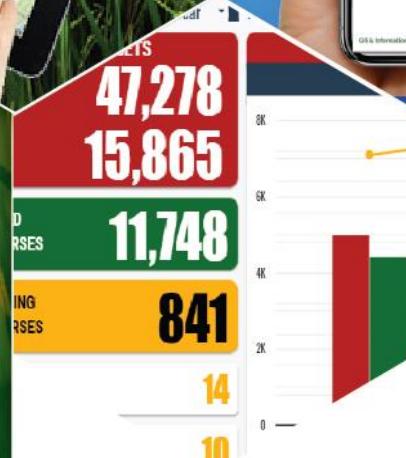
FEDERAL PROJECT MANAGEMENT UNIT
FEDERAL WATER MANAGEMENT CELL
MINISTRY OF NATIONAL
FOOD SECURITY & RESEARCH
ISLAMABAD - PAKISTAN

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

MONITORING, EVALUATION
AND IMPACT EVALUATION
CONSULTANTS



BASELINE SURVEY REPORT (FINAL)



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



In Association with 

+



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

Monitoring, Evaluation, and Impact Evaluation (ME&IE) Consultants
For
National Program for Improvement of Watercourses in Pakistan Phase-II (NPIWC-II)

BASELINE SURVEY REPORT (FINAL)

TABLE OF CONTENTS

ACRONYMS	vi
EXECUTIVE SUMMARY	1
1. INTRODUCTION	7
1.1. Project Components	7
1.1.1. Component C1:.....	7
1.1.2. Component C2:.....	7
1.1.3. Component C3:.....	7
1.1.4. Component C4:.....	7
1.2. Project Territorial Coverage.....	7
1.3. Zone-wise / Unit-wise Output.....	8
1.3.1. Component C1: Organization of Water Users' Associations	8
1.3.2. Component C2: Improvement of Watercourses	8
1.3.3. Component C3: Construction of Water Storage Tanks	8
1.3.4. Component C4: Provision of Precision (Laser) Land Leveling Units (PLL)	9
1.4. Project Impacts	9
1.4.1. Project Direct Benefit	9
1.4.2. Project indirect benefits to industry/economic activities	9
1.4.3. Awareness of support to farmers.....	9
1.5. Project Beneficiaries	9
1.6. Project Development Objectives (PDO)	10
1.7. Monitoring Evaluation and Impact Evaluation	10
2. METHODOLOGY FOR MONITORING AND CONDUCTNG BASELINE	12
2.1. Sampling Methodology:.....	12
2.2. Conducting Baseline Surveys	12
2.3. Data Collection Tools:	12
2.4. Sampling Procedure for Monitoring WUAs and Conducting Baseline Surveys.....	13
2.4.1. WUAs Monitoring.....	13
2.4.2. Baseline Surveys and Spot Checking for Watercourses	13

2.4.3. Baseline Surveys and Spot Checking for Water Storage Tanks	13
2.5. WUAs Mobilization	13
2.6. Process Monitoring and Spot Checking:	13
2.7. Ensuring Data Quality and Validity:	13
2.8. M&E Field Staff Trainings	13
2.8.1. Outcomes of the Training Program	20
3. PROGRESS MONITORING.....	21
3.1. Improving Watercourses.....	21
3.2. Constructing Water Storage Tanks (WSTs)	21
4. MONITORING OF WUAs: COMPONENT C1.....	23
4.1. Awareness about WUAs.....	23
4.2. Functioning of WUAs	25
4.3. WUAs Meetings	26
4.4. Dispute Resolution by WUAs	28
5. BASELINE OF WATERCOURSES UNDER COMPONENT C2	30
5.1. Profile of Sample Watercourses.....	30
5.1.1. Baseline Sample Size	30
5.1.2. Sample Respondent Farmers	30
5.1.3. Type of Baseline Sample Watercourses	31
5.1.4. Type of Lining of Baseline Sample Watercourses.....	31
5.1.5. Water Source of Baseline Sample Watercourses	31
5.1.6. Water Source of Non-Canal Baseline Watercourses.....	32
5.1.7. Location of Baseline Sample Canal Watercourses	32
5.1.8. Quality of Ground Water.....	33
5.1.9. Culturable Command Area on Sample Watercourses.....	33
5.2. Profile of Sample Farmers.....	33
5.2.1. Distribution According to Size of Holding and Tenurial Status.....	33
5.2.2. Location of the Respondents at the Watercourses.....	34
5.2.3. Average Farm Size at Sample Farms	34
5.3. Analysis of Agricultural Indicators on Sample Farmers.....	35
5.3.1. Zone Wise Farm Area, Cultivated Area and Cropped Area	35
5.3.2. Land Utilization on Sample Farms	36
5.3.3. Land Utilization in Canal and Non-canal command Areas	36
5.3.4. Cropping Intensities on Sample Farms	37
5.3.5. Cropping Intensities in Canal Command and Non-Canal Command Areas	38
5.3.6. Crop Yields on Sample Farms	39
5.3.7. Crop Area on Sample Farms	40
5.3.8. Cropping Pattern on Sample Farms	41
5.3.9. Crop Production of Sample Farms.....	42
5.3.10. Agriculture Employment on Sample Farms.....	43
5.3.11. Farm Household Income at Sample Farms.....	44
5.3.12. Area benefited and Gross and Net Income under Completed Schemes.....	45
5.4. Spot Checking of Watercourses	45
5.4.1. Profile of Spot-Checked Watercourses	45
5.4.2. Results of Spot-Checking Watercourses.....	45
5.4.2.1. Spot Checking - Trees on Watercourses	46
5.4.2.2. Spot Checking - Brick Lined Watercourses	46
5.4.2.3. Spot Checking of PCP Lining Watercourses	47
5.4.2.4. Spot Checking of Pipelined Watercourses.....	47
6. BASELINE OF WATER STORAGE TANKS: COMPONENT C3	49
6.1. Profile of Sample WSTs/Farmers	49
6.1.1. Sample Size.....	49
6.1.2. Area Operated Under Sample WSTs	49

6.1.3.	Sources of Irrigation Water for WSTs.....	50
6.1.4.	Topography of WSTs	51
6.1.5.	Feedback Information on WSTs	51
6.1.6.	Perception of Farmers on Cropping Intensity and Crop Yields	51
6.1.7.	Perception of Farmers in Cultivated Area and No of Irrigations	52
6.1.8.	Average Sample Respondents per WST	52
6.1.9.	Distribution Sample WST Farms according to Farm Size and Tenancy	52
6.2.	Analysis of Agricultural Indicators on Sample Farmers.....	53
6.2.1.	Zone Wise Farm Area, Cultivated Area and Cropped Area	53
6.2.2.	Land Utilization on Sample Farms.....	53
6.2.3.	Cropping Intensities on Sample Farms.....	54
6.2.4.	Crop Yields on Sample Farms	55
6.2.5.	Crop Area on Sample Farms	56
6.2.6.	Cropping Pattern on Sample Farms	58
6.2.7.	Crop Production of Sample Farms.....	58
6.2.8.	Agriculture Employment on Sample Farms.....	59
6.2.9.	Farm Household Income at Sample Farms.....	60
6.2.10.	Area benefited and Gross and Net Income under Completed Schemes.....	60
6.3.	Spot Checking of Sample WSTs	61
6.3.1.	Profile of Spot-Checked WSTs	61
6.3.2.	Results of Spot Checking	61
7.	Waterlogging and Salinity.....	63
7.1.	Waterlogging: Baseline Overview	63
7.2.	Salinity: Baseline Overview	63

LIST OF ANNEXES

ANNEX-A:	DISTRICT-WISE BASELINE SURVEY SAMPLE DISTRIBUTION.....	65
ANNEX-B:	WATERCOURSES – ZONE WISE BASELINE FIELD SURVEY SCHEDULE.....	68
ANNEX-C:	WATER STORAGE TANKS – ZONE WISE BASELINE FIELD SURVEY SCHEDULE	92
ANNEX-D:	WUA MONITORING AND WATERCOURSE BASELINE TOOL.....	104
ANNEX-E:	WATER STORAGE TANKS BASELINE TOOL.....	122
ANNEX-F:	SPOT CHECKING OF WATERCOURSES TOOL	134
ANNEX-G:	SPOT CHECKING TOOL FOR WATER STORAGE TANKS.....	140

LIST OF TABLES

Table 1: Area Benefited and Gross and Net Income of the farms under Completed Watercourses	3
Table 2: Area Benefited and Gross and net Income of the farms under completed WSTs	5
Table 3: Zone-wise Targets of Watercourses to be Improved and WUAs under NPIWC-II	8
Table-4: Zone / Unit wise Water Storage Tanks to be constructed under NPIWC-II.....	8
Table-5: Zone /Unit wise PPL Units Planned and Area Coverage under NPIWC-II	9
Table-6: PDO Level Results Indicators under NPIWC-II	10
Table-7: Deliverables / Reporting Requirement by ME&IE Consultants	10
Table-8: Sample Size for WUAs Monitoring and Watercourses	12
Table-9: Sample Size for WST Construction Component	12
Table-10: Improving Watercourses: Achievements Versus Project Targets by the end of June 2024	21
Table-11: Construction of WSTs: Achievements Versus Project Targets by the end of June 2024	22
Table-12: Awareness About Water User Associations	23
Table-13: OFWM Held Awareness Meetings Before Formation of WUA	24
Table-14: Water User's Participated in Awareness Meetings	24
Table-15: WUA Formed Democratically	24

Table-16: OFWM Provide Awareness About WUA Functions/Role.....	25
Table-17: Distribution of Farmer's Located at Watercourse	25
Table-18: Farmer's are Water Users' of Lined Watercourses	25
Table-19: Water Users Association Functional/Operational	25
Table-20: Reasons of Non-Functional/Operational WUA (<i>Multiple Responses</i>)	26
Table-21: Who Motivated to be a Member (<i>Multiple Responses</i>)	26
Table-22: Paid Membership Fees	26
Table-23: Meetings Held by WUA	27
Table-24: Participation of WUA's Members in Meetings	27
Table-25: Frequency of WUA's Meetings	27
Table-26: Participation of Majority Members in WUA's Meetings	27
Table-27: Decisions made Democratically in WUA's Meetings	28
Table-28: Dispute Faced During Watercourse Improvement.....	28
Table-29: WUA Helps in Solving Farming Problems / disputes	28
Table-30: Farmers Faced Disputes and Disputes Solved	29
Table-31: Reasons of Disputes	29
Table-32: Who Resolved the Disputes.....	29
Table-33: Baseline Sample Size required and conducted.....	30
Table-34: Respondent Sample Farmers on 744 Sample Watercourses	31
Table-35: Types of Sample Watercourses	31
Table-36: Sample Watercourses According to Type of Lining	31
Table-37: Impact/Endline Sample Watercourses According to Water Source	32
Table-38: Non-Canal Sample Watercourses According to Water Source.....	32
Table-39: Location of Sample Canal WC on Minor / Distributary	32
Table-40: Quality of Ground Water in Sample Watercourses.....	33
Table-41: Culturable Command Area (CCA) on Sample WC.....	33
Table-42: Distribution of Farmers According to Size of Holding	33
Table-43: Distribution of Sample Farmers According to Tenure	34
Table-44: Farmer's Location on Watercourses.....	34
Table-45: Total and Average Farm Area or Size of Holding (Acres) on Sample Farms	34
Table 46: Zone wise Total Farm Area, Cultivated Area and Cropped Area of Sample Farms.....	35
Table 47: Land Use Intensities on Sample Farms	36
Table 48: Land Utilization in Canal Command and Non-Canal Command Areas.....	37
Table 49: Impact of WC Improvement on Cropping Intensities on Sample Farms	37
Table 50: Cropping Intensities in Canal Command and Non-Canal Command Areas	38
Table 51: Crop Yields on Sample Farms - Zone Wise	39
Table 52: Crop Area on Sample Farms – Zone wise	40
Table 53: Cropping Pattern (Crops Share) on Sample Farms - Zone wise	42
Table 54: Crop Production on Sample Farms in Baseline - Zone wise.....	42
Table 55: Agriculture Employment on Sample Farms	44
Table 56: Farm Gross and Net Income on Sample Farms.....	44
Table 57: Area Benefited and Gross and net Income of the farms under completed Watercourses	45
Table 58: Spot Checking of Watercourses Distributed by Type of Lining.....	45
Table 59: Trees cut down, Planted, and Survived at Watercourses	46
Table-60: Results of Rectangular / Brick Lined Watercourses' Spot Checking	46
Table 61: Results of Parabolic (PCPL) Watercourses" Spot Checking.....	47
Table-62: Results of Pipelined Watercourses' Spot Checking	47
Table-63: Sample Size for Monitoring Evaluation WST	49
Table 64: Area Operated under Sample WSTs	50
Table-65: Source of Irrigation Water of Water Storage Tanks (Multiple Sources)	50
Table-66: Land Topography of the Area Served by Sample Water Storage Tanks	51

Table-67: Feed Back on Water Storage Tanks Construction	51
Table-68: Farmer's Perception on Increase in Cropping Intensity and Crop Yields.....	51
Table-69: Farmer's Perception on Increase in Cultivated Area and No of Irrigations	52
Table-70: Baseline and Impact Sample Respondents.....	52
Table-71: Distribution of Farmers According to Size of Holding	52
Table-72: Distribution of Farmers According to Tenure	52
Table-73: Zone wise Total Farm Area, Cultivated Area and Cropped Area of Sample Farms	53
Table-74: Land Use Intensities on Sample Farms	53
Table-75: Impact of WC Improvement on Cropping Intensities on Sample Farms	54
Table-76: Crop Yields On Sample Farms - Zone Wise	55
Table-77: Crop Area on Sample Farms – Zone wise	57
Table-78: Cropping Pattern (Crops Share) on Sample Farms - Zone wise	58
Table-79: Crop Production on Sample Farms in Baselines I&II– Zone wise	58
Table-80: Agricultural Employment at Sample Farms	59
Table-81: Farm Gross and Net Income on Sample Farms	60
Table-82: Area Benefited and Gross and net Income of the farms under completed Schemes	60
Table-83: Structure and Type of WST	61
Table-84: WST Completed by Farmers Before Subsidy Paid	61
Table-85: WST Completed as per Approved Standards and Specifications	61
Table-86: Issuance of Excavation Certificate by the Consultant	61
Table-87: Variation in Specifications of Material Used	62
Table-88: Subsidy Paid as per Cost Estimates	62
Table-89: Trees Cut down, Planted, Survived and WST Properly Maintained	62
Table-90: Before Watercourse Improvement reported Waterlogged Area (Acres).....	63
Table-91: Before Watercourse Improvement reported Salinity Area (Acres).....	63

LIST OF FIGURES

Figure 1: Watercourses Improvement: Achievements versus Project Targets	21
Figure 2: Construction of WST: Achievements versus Project Targets.....	22
Figure 3: Average Farm Area of Watercourse Sample Farms.....	35
Figure 4: Zone / Unit Wise Land Use Intensities on Sample Farms	36
Figure 5: Canal and Non-Canal Command Area wise Land Use Intensities on Sample Farms	37
Figure 6: Zone / Unit Wise Cropping Intensities on Sample Farms	38
Figure 7: Canal and Non-Canal Command Area wise Cropping Intensities on Sample Farms	38
Figure 8: Overall Main Crop Yields (in maunds per acre) on Sample Farms.....	39
Figure 9: Overall Fruit and Vegetable Yields (in maunds per acre) on Sample Farms.....	40
Figure 10: Crop Area Under Major Crops on Sample Farms	41
Figure 11: Crop Area (acres) under Fruit and Vegetables on Sample Farms	41
Figure 12: Crop Production (maunds) of Main Crops on Sample Farms	43
Figure 13: Production of Fruit and Vegetables (maunds) Sample Farms	43
Figure 14: Average Size of Holding of Sample WSTs' Farms.....	50
Figure 15: Zone / Unit Wise Land Use Intensities on Sample Farms	54
Figure 16: Zone / Unit Wise Cropping Intensities on Sample Farms	55
Figure 17: Overall Main Crop Yields (in maunds per acre) on Sample Farms.....	56
Figure 18: Overall Fruit and Vegetable Yields (in maunds per acre) on Sample Farms.....	56
Figure 19: Crop Area Under Major Crops on Sample Farms	57
Figure 20: Crop Area (acres) under Fruit and Vegetables on Sample Farms	57
Figure 21: Crop Production (maunds) of Main Crops on Sample Farms	59
Figure 22: Production of Fruit and Vegetables (maunds) Sample Farms	59

ACRONYMS

ADA	ADA Incorporated, Canada
AOSM	Adjustable Orifice Semi-Module
AF	Acre-Feet
AJK	Azad Jammu & Kashmir
BCR	Benefit Cost Ratio
CCA	Culturable Command Area
CSRD	Center for Social Research and Development
EAs	Executing Agencies
FPMU	Federal Project Management Unit
GB	Gilgit Baltistan
GIS	Geographic Information System
HDPE Pipe	High Density Polyethylene Pipe
IAs	Implementing Agencies
ICR	Intermediate Completion Report
ICT	Islamabad Capital Territory
ICT	Information & Communication Technology
Kgs	Kilograms
KPK or KP	Khyber Pakhtunkhwa
LOG Frame	Logical Framework
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
MT	Monitoring Template
MTE	Mid-Term Evaluation
NESPAK	National Engineering Services of Pakistan
NPC	National Project Coordinator
NPIWC	National Program for Improvement of Watercourses
NPV	Net Present Value
OFWM	On Farm Water Management
PC	Project Consultants
PCC Pipe	Plain Cement Concrete Pipes
PCP	Parabolic Cement Precast
PCPL	Parabolic Cement Precast Lining
PVC Pipe	Polyvinyl Chloride Pipe
PC-1	Planning Commission-(Form-One)
PDO	Project Development Objectives
PIC	Project Implementation Committee
PLL	Precision Laser Land Leveler
PIES	Project Impact Evaluation Study
PKR	Pakistan Rupees
PQC	Pre-Qualification Committee

RCC Pipe	Reinforced Cement Concrete Pipes
SOPs	Standardized Operating Procedures
SPSS	Statistical Package for Social Sciences (Software)
SSCs	Supply and Service Companies
TABs	Tablets
TOR	Terms of Reference
TS	Technical Sanction
TWRD	Tail-Water Recovery Ditch
WC	Watercourse
WCE	Watercourse Conveyance Efficiency
WCL	Watercourse Conveyance Losses
WFM	Water Flow Measurement
WG	Women Group
WST	Water Storage Tank
WUAs	Water Users Associations

EXECUTIVE SUMMARY

The Government of Pakistan, through the Ministry of National Food Security and Research (MNFSR), is implementing the National Program for Improvement of Watercourses, Phase-II (NPIWC-II). The project aims to significantly enhance agricultural productivity and sustainability by improving water management efficiency at the farm level.

Key objectives include increasing cropping intensity, improving crop yields, reducing water disputes, and enhancing farmer incomes through better water management practices. The project is supervised by NESPAK and consortium partners, while Monitoring, Evaluation, and Impact Evaluation (ME&IE) services are provided by ME&IE Consultants, coordinated by the Federal Project Management Unit (FPMU) and Federal Water Management Cell (FWMC).

The project comprises four main components:

- **Component 1 (Organization of WUAs):** Establishing Water Users Associations (WUAs) to improve community water resource management.
- **Component 2 (Watercourse Improvement):** Renovation of 47,278 watercourses, including lining and water-control structures, to reduce water losses.
- **Component 3 (Construction of Water Storage Tanks):** Building 14,932 Water Storage Tanks (WSTs) to enhance irrigation capacity in water-scarce regions.
- **Component 4 (Laser Land Levelers):** Providing 11,610 laser land-leveling units to farmers, significantly boosting water-use efficiency and productivity.

The project covers Punjab, Khyber Pakhtunkhwa (KP), Balochistan, Gilgit Baltistan (GB), Azad Jammu and Kashmir (AJK), and Islamabad Capital Territory (ICT), directly benefiting approximately 1.668 million farmers, impacting around 8.34 million people.

Key baseline findings (as of June 2024) include:

- Cropping Intensity: Averaged 157.0%, varying from 102.3% in KP to 188.9% in Punjab.
- Average Crop Yields: Wheat (30.5 maunds/acre), Rice (28.2 maunds/acre), Cotton (26.2 maunds/acre), and Sugarcane (728.8 maunds/acre).
- Farm Income: Gross income averaged PKR 94,682 per acre, with a net income of PKR 50,293 per acre.
- Progress on Watercourse Improvements: Achieved only 30.5% of targeted improvements (14,443 out of 47,278 watercourses).
- Progress on WST Construction: Only 39.6% (5,915 out of 14,932) of targeted WSTs completed.

The baseline study, covering 3,310 respondent farmers across 744 watercourses and 347 WSTs, identified several implementation challenges:

- Slow Implementation Pace: Progress significantly behind schedule in watercourse improvements and WST construction.
- Insufficient Tree Plantation: Only 58% of required replacement saplings were planted following tree removal.
- Partial Compliance with Specifications: Spot checks revealed inconsistent adherence to construction standards, highlighting quality control gaps.

These baseline findings provide essential benchmarks for future impact evaluations and will inform targeted interventions to accelerate project implementation, strengthen compliance with quality standards, and maximize agricultural and socio-economic benefits.

This report consists of a completely consolidated baseline against all completed schemes under the project, covering a sample of 3,310 respondent farmers against 744 sampled watercourses, and 347 sample Water Storage Tanks. Moreover, this baseline report includes three components: WUAs, Watercourses and Water Storage Tanks. The Precision Land Levelling (PLL) component is not included as no baseline was required for it. It would, however, be included in the impact assessment of the Project. The main findings of the report are summarized below:

Progress Monitoring:

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

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

Monitoring of Component C1 (Organization of WUAs)

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

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

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

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

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

Baseline Results of Component C2 (Watercourses)

The baseline assessment of watercourses aimed to measure existing infrastructure conditions, agricultural productivity, and farm-level economic indicators. This baseline provides essential benchmarks against which the impact of watercourse improvement activities will be evaluated.

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

Cropping intensity on sample farms varied from 102.3% in Khyber Pakhtunkhwa (KP) to 188.9% in the Punjab, with an average of 157.0% for sample farms and 169.9% for all farms on the 14,443 completed watercourses. In Canal and Non-Canal Command areas it has been estimated as 179.7% and 112.5% respectively.

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

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

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

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

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

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

Table 1: Area Benefited and Gross and Net Income of the farms under Completed Watercourses

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

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

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

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

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

Baseline conditions reveal notable regional disparities. The significantly higher cropping intensity and productivity in Punjab contrasts with lower performances in KP and Balochistan. Targeted interventions should prioritize enhancing cropping intensity, productivity, and economic outcomes, particularly in underperforming regions, to achieve balanced agricultural development across all project areas.

Baseline Results of Component C3 (Water Storage Tanks)

The baseline assessment for Water Storage Tanks (WSTs) was conducted to establish the current status of irrigation infrastructure, agricultural productivity, and economic indicators at the farm level. These benchmarks will allow for a clear evaluation of the project's future impact on irrigation efficiency and agricultural outcomes.

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

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

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

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

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

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

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

When the results of our 347 sample farmers were super imposed on all the 5,915 farmers benefited from the construction of 5,915 WSTs in the project area up to June 2024; total farm area, cultivated area and total crop area benefited calculations to 62,763 acres, 49,271 acres and 56,440 acres respectively. Gross income from these crop acres comes to PKR 6.706 billion and net income PKR 3.779 billion. Zone wise / unit wise detail is given in **Table 2**. These baseline estimates would help us in determining the project benefits and carrying out economic analysis after the impact surveys are completed.

Table 2: Area Benefited and Gross and net Income of the farms under completed WSTs

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

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

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

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

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

Baseline Results of Component C4 (Laser Land Levelers)

As defined in the approved Inception Report, the Laser Land Levelers component does not require a baseline survey, as there is no before data which is required to be compared with after situation to net out the impacts. For WUAs monitoring surveys will be done twice during the project period on sample basis and their functioning and level of maintenance of watercourses, WSTs and Laser units will be assessed.

The baseline data highlights clear regional variations in agricultural productivity and economic performance. Punjab leads significantly in both land and cropping intensity, whereas KP and Balochistan indicate lower performance, suggesting these areas require focused interventions. Enhancing infrastructure through effective implementation of WSTs, accompanied by targeted agricultural support, can significantly bridge regional gaps and enhance overall productivity.

Waterlogging and Salinity

At the inception of the NPIWC-II program, widespread waterlogging and salinity had rendered substantial agricultural land in Punjab, KP, and Balochistan either low-yielding or uncultivable. Baseline data indicated that 21,497 acres of waterlogged and 22,034 acres of salinity-affected land prior to intervention against 14,443 watercourses under the project. These challenges, primarily caused by seepage from unlined channels and over-irrigation, highlighted the urgency for structural and management improvements. The baseline assessment served as a critical reference point, validating the technical justification for targeted watercourse enhancements in vulnerable zones.

1. INTRODUCTION

The Government of Pakistan is implementing a National Program for Improvement of Watercourses in Pakistan, Phase-II (NPIWC-II) funded by the Ministry of National Food Security and Research (MNSFR), Islamabad. This Project covers Punjab, Khyber Pakhtunkhwa (KP), Balochistan, Gilgit Baltistan (GB), Azad Jammu & Kashmir (AJK) as well as Islamabad Capital Territory (ICT) at a total cost of PKR 154, 542.355 million (Umbrella PC-I) over a period of five (05) years. The executing agencies (EAs) are Federal Water Management Cell (FWMC), all provincial departments of agriculture (Provincial Directorates of OFWM) and respective departments of AJK, GB and ICT, district Governments and Farmers' Organizations (FOs) / Water Users Association (WUAs). The project supervision is carried out by the Project Consultant (NESPAK & JV Partners). The task of Monitoring Evaluation & Impact Evaluation (ME&IE) has been entrusted to ME&IE Consultants: A Joint Venture of G-3 Engineering (Lead Firm) Consultants (Pvt.) Ltd., CSRD, EASE PAK and ADA in association with S&S Associates. The coordination rests with the Federal Project Management Unit (FPMU) and Federal Water Management Cell (FWMC).

1.1. Project Components

The Project has the following components:

1.1.1. Component C1:

Social 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 (Amended in 2001) and organization of 47,278 WUAs.

1.1.2. Component C2:

Reconstruction/renovation and remodeling of 47,278 watercourses (Punjab 10,000; KP 13,000; Balochistan 20,389; GB 2,500; AJK 1,165 and ICT 224) 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 (approximately saving of 123 acre-feet (AF) per watercourse/annum).

1.1.3. Component C3:

Construction of 14,932 water storage tanks (Punjab 3,000; KP 5,000; Balochistan 5,507; GB 825; and AJK 600) with cost sharing of 60 percent by the project and 40 percent by the farmers. The subsidy for WSTs will be in both irrigated as well as in Barani areas where canal and rainwater are the source of irrigation, and the tank is technically required for supplemental irrigation with flood irrigation or High Efficiency Irrigation System (HEIS).

1.1.4. Component C4:

Provision of 11,610 Laser Land Levelers (Punjab 9,500; KP 600; Balochistan 1,500; GB 5 and AJK 5) at 50% cost sharing, with the expectation to save about 50% irrigation water for wheat and about 68% of irrigation water for paddy. It is planned to provide one-time financial assistance of Rs. 250,000 per unit to the farmers / service providers while the beneficiary farmer would contribute the entire remaining cost of the equipment.

1.2. Project Territorial Coverage

The Project covers the following three Provinces and three Units

1. Punjab Zone

2. Khyber Pakhtunkhwa (KP) Zone
3. Balochistan Zone
4. Gilgit Baltistan (GB) Unit
5. Azad Jammu and Kashmir (AJK) Unit
6. Islamabad Capital Territory (ICT) Unit

1.3. Zone-wise / Unit-wise Output

1.3.1. Component C1: Organization of Water Users' Associations

The key to success of any OFWM program is the participation of the farmers / water users in the execution of envisaged interventions through a community driven implementation approach. Under the NPIWC-II, the proposed works/activities are also to be carried out through the Water Users Associations (WUAs) to be registered under "On Farm Water Management & Water Users Associations Ordinance [Act]-1981 amended in 2001". In this regard, the target of activating/ reactivating 47,278 WUAs one at each target watercourse was envisaged. Zone-wise / Unit-wise detail is given in **Table 3**.

1.3.2. Component C2: Improvement of Watercourses

A total of 47,278 watercourses are planned to be improved under the project. These include 14,089 watercourses to be reconstructed (more than 20 years old / Additional lining up to 50%) and 33,189 new unimproved watercourses. Zone / Unit wise targets are detailed in **Table 3** below:

Table 3: Zone-wise Targets of Watercourses to be Improved and WUAs under NPIWC-II

Zone / Unit	Reconstruction of more than 20 years old Watercourses / Additional lining 50%	New unimproved Watercourses	Total Watercourses to be Improved	Total WUAs to be Activated
Punjab	7,500	2,500	10,000	10,000
Khyber Pakhtunkhwa	3,000	10,000	13,000	13,000
Balochistan	3,589	16,800	20,389	20,389
Gilgit Baltistan	-	2,500	2,500	2,500
AJK	-	1,165	1,165	1,165
ICT	-	224	224	224
Total	14,089	33,189	47,278	47,278

1.3.3. Component C3: Construction of Water Storage Tanks

On-farm water storage tank is structural best management practice that enables to capture and store canal water, surface water runoff during rainy season, tail water from furrow irrigation etc., so that it may be used subsequently at required time of irrigation. A total of 14,932 water storage tanks are planned to be constructed under the project. Zone / Unit wise detail is given in **Table 4** below:

Table-4: Zone / Unit wise Water Storage Tanks to be constructed under NPIWC-II

Zone / Unit	Number of WSTs
Punjab	3,000
Khyber Pakhtunkhwa	5,000
Balochistan	5,507
Gilgit Baltistan	825
AJK	600
ICT	-
Total	14,932

1.3.4. Component C4: Provision of Precision (Laser) Land Leveling Units (PLL)

Precision (laser) land leveling is the best option / solution for enhancing / improving water productivity through minimizing water application losses. Laser Land leveling technology is highly popular amongst farming communities, especially in the Punjab. Keeping in view its huge demand and its massive economic benefits / returns to the farmers, it has been planned to provide 11,610 laser land leveler equipment to the farmers / service providers under the project. On average, laser land levelers have the capacity of laser leveling of about 300 acres per annum. Zone / Unit wise provision of PLL and annual area covered is given in **Table 5** below:

Table-5: Zone /Unit wise PPL Units Planned and Area Coverage under NPIWC-II

Zone Unit	Number of PLL Planned	Total Area to be Covered Annually (000 acres)
Punjab	9,500	2,850.0
KP	600	180.0
Balochistan	1,500	450.0
Gilgit Baltistan	5	1.5
AJK	5	1.5
ICT	-	-
Total	11,610	3,483.0

1.4. Project Impacts

1.4.1. Project Direct Benefit

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

1.4.2. Project indirect benefits to industry/economic activities

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

1.4.3. Awareness of support to farmers

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

1.5. Project Beneficiaries

The 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 beneficiaries on each watercourse, the total number of farmers benefiting from the activity comes to 1,654,730. The same number will benefit the 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 $1,654,730 + 1,654,730 \times 0.5 + 14,932 \times 0.5 + 11,620 \times 0.5 = 1,668,006$ or say 1.668 million if 100% WUAs, 50 % each of WST and PLL beneficiaries are already covered under Watercourse improvement beneficiaries. Taking family size at five, the total net population benefiting is expected to be 8.34 million people.

1.6. Project Development Objectives (PDO)

Mid-term and Final PDO targets given in Inception Report are summarized below in **Table 6**:

Table-6: PDO Level Results Indicators under NPIWC-II

Sr. No.	PDO Level Results Indicators	Unit	Baseline	Mid-term	Final
1	Watercourses with an increase in watercourse conveyance efficiency of at least 15%.	Number	0	27,871	47,278
2	Direct project beneficiaries of watercourse improvements-households (number) ^(a)	Number	0	975,485	1,654,730
3	Construction of Water Storage Tanks	Number	0	8,472	14,932
4	Provision of Laser Land Leveling	Number	0	7,460	11,610
5	Increase in cropping intensity in Canal command areas (watercourses).	Percentage	168%	5	5
6	Increase in Cropping Intensity in non-canal command areas	Percentage	110%	24	24
7	Increase in Agriculture output per unit of water (watercourses)	Rs/M ³	8	3	3
8	Reduction in water losses in project area due to watercourse lining	% age	45%	33	33
9	Reduction in field application losses due to laser land leveling	% age	30%	33	33
10	Increase in agriculture output per unit of water (laser leveling)	Rs/M ³	8	25	25
11	The area benefited due to the improvement of watercourses ^(b)	Acres	0	6,689,040	11,346,720
12	Area leveled by laser Land Leveling units	Acres	0	2,238,000	3,483,000
13	Area served by Water Storage Tanks ^(c)	Acres	0	69,894	95,782

(a) Assuming 35 beneficiaries per watercourse, (b) Assuming 240 acres benefited per watercourse, (c) Assuming average area served by each WST at 8.25 acres

1.7. Monitoring Evaluation and Impact Evaluation

Under the Project, activities are planned and implemented by the executing agencies (EAs) and supervised by Project Consultant. The Monitoring, Evaluation and Impact Evaluation of these completed activities are assessed by the ME&IE Consultants, normally through conducting periodic surveys and studies. The following deliverables (**Table 7**) are to be prepared and submitted from time to time by the ME&IE Consultants during the currency of the consultancy period.

Table-7: Deliverables / Reporting Requirement by ME&IE Consultants

Sr. #	Documents	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 Progress Report	10	10 th of the following month
4	Baseline Survey Report	10	4 months after the start of the Assignment / in three phases, after submission of Final Inception Report/Starting of Baseline field activities
5	Midline Survey Report	10	In the Middle of the assignment
6	End line Survey Report	10	At the End of the assignment
7	Quarterly Monitoring and Evaluation Report	10	10 th of the following quarter
8	Annual Monitoring and Evaluation Report	10	4 months after the start of the assignment
9	Draft Assignment Completion Report	5	Upon the Completion of Physical works/ activities
10	Final Assignment Completion Report	25	Upon the completion of Physical and financial activities
11	Special Reports	10	As and when required

As per the deliverables given in Table 7 above, ME&IE Consultants are required to submit the Baseline Survey report. Thus, in compliance with its contractual requirement, the ME&IE Consultants have prepared this report which consolidates two baselines Phase I&II surveys conducted so far. These consolidated baseline results cover the period up to end of June 2024. Thus, these are interim results until all the three baseline surveys are completed and consolidated in the final report.

The report contains the following Sections and Annexes.

EXECUTIVE SUMMARY

1. INTRODUCTION
2. METHODOLOGY FOR MONITORING AND BASELINES
3. PROGRESS MONITORING
4. MONITORING OF WUAs: COMPONENT C1.
5. BASELINE OF WATERCOURSES: COMPONENT C2.
6. BASELINE OF WSTs: COMPONENT C3.
7. WATERLOGGING AND SALINITY

ANNEX-A: DISTRICT-WISE BASELINE SURVEY SAMPLE DISTRIBUTION

ANNEX-B: WATERCOURSES – ZONE WISE BASELINE FIELD SURVEY SCHEDULE

ANNEX-C: WATER STORAGE TANKS – ZONE WISE BASELINE FIELD SURVEY SCHEDULE

ANNEX-D: WUA MONITORING AND WATERCOURSE BASELINE TOOL

ANNEX-E: WATER STORAGE TANKS BASELINE TOOL

ANNEX-F: SPOT CHECKING OF WATERCOURSES TOOL

ANNEX-G: SPOT CHECKING TOOL FOR WATER STORAGE TANKS

2. METHODOLOGY FOR MONITORING AND CONDUCTING BASELINE

A quantitative survey-based approach was utilized to establish baseline indicators, providing clear, measurable benchmarks for future impact evaluations. The surveys were further supported by systematic spot-checking and process monitoring.

2.1. Sampling Methodology:

The baseline sample consisted of 744 watercourses and 347 water storage tanks (WSTs), involving 3,310 respondent farmers. Due to the absence of a comprehensive sampling frame at the project's initiation, the baseline surveys were conducted in phases, drawing samples specifically from those watercourses and WSTs for which technical sanctions (TSs) had been issued.

The samples calculated for WUAs Mobilization, Watercourse Improvement and Water Storage Tanks Construction components under original and revised methodologies are given in **Tables 8 and 9**.

Table-8: Sample Size for WUAs Monitoring and Watercourses

Zone / Unit	Under Original Methodology			Under Revised Methodology			Actual Sample Drawn
	Project Targets	Sample %age	Sample Size	Achieved Targets	Sample %age	Sample Size	
Punjab	10,000	2%	200	5,108	5%	255	250
KP	13,000	2%	260	3285	5%	164	205
Balochistan	20,389	2%	408	4510	5%	226	203
Gilgit Baltistan	2,500	5%	125	913	5%	46	40
AJK	1,165	5%	58	586	5%	29	39
ICT	224	5%	11	41	5%	2	7
Total	47,278	2.25%	1062	14,443	5%	722	744

Table-9: Sample Size for WST Construction Component

Zone / Unit	Original Methodology			Revised Methodology			Actual Sample Drawn
	Project Targets	Targets Achieved	Sample Size	Completed Schemes	Sample %age	Sample Size	
Punjab	3,000	2%	60	1121	5%	56	80
KP	5,000	2%	100	1225	5%	61	79
Balochistan	5,507	2%	110	2670	5%	134	148
Gilgit Baltistan	825	5%	41	455	5%	23	15
AJK	600	5%	30	444	5%	22	25
Total	14,932	2.29%	341	5,915	5%	296	347

2.2. Conducting Baseline Surveys

Baseline surveys are conducted after the issuance of Technical Sanctions (TSs) in case of Watercourses improvement and construction of Water Storage Tanks. These Surveys are carried out to determine the before interventions status of various agricultural, social and economic indicators such as cropping intensities, cropped area under various crops, crop yields per acre, crop production, farmers' income and employment etc. The Survey Tools / Instruments/ Questionnaires are placed at **ANNEX-D** for WUAs monitoring and WC Baseline, at **ANNEX-E** for WSTs Baseline, at **ANNEX-F** for Watercourse Spot checking and at **ANNEX-G** for WSTs Spot checking.

2.3. Data Collection Tools:

Structured questionnaires were deployed via tablet-based Android applications, facilitating real-time data monitoring, accuracy, and streamlined data management. Subsequent data analysis was conducted using SPSS (Statistical Package for Social Sciences) software to ensure precision and consistency in results.

2.4. Sampling Procedure for Monitoring WUAs and Conducting Baseline Surveys

2.4.1. WUAs Monitoring

For conducting monitoring of WUAs, information on formation of WUAs is collected along with baseline surveys, while the information on performance of WUAs is collected along with Impact surveys. As explained earlier, all the information about WUAs is collected through/ on pre-designed data collection tool through (**ANNEX-D**) an android-based application on TABs.

2.4.2. Baseline Surveys and Spot Checking for Watercourses

For conducting baseline surveys on watercourses, two stage samplings are carried out. At the 1st stage, watercourses are selected randomly from the sampling frame as explained in section 2.1 above. At the 2nd stage, 6 growers are selected for interviews, 2 each at head, middle and tail reaches. However, on the watercourses having 6 or less 6 growers, all the growers are interviewed. Data collection tool designed for this purpose is also placed at **ANNEX-D**. The tool designed for spot checking of Watercourses is placed at **ANNEX-F**.

2.4.3. Baseline Surveys and Spot Checking for Water Storage Tanks

For conducting baseline surveys for Water Storage Tanks, sample farmers are directly selected at random from the sampling frame as explained in section 2.1 above. Data collection tool for Water Storage Tanks Baseline is placed at **ANNEX-E** and that for Spot Checking for WSTs at **ANNEX-G**.

2.5. WUAs Mobilization

The extent of community mobilization is assessed by investigating whether:

- a. WUAs are functional.
- b. Holds regular meetings and keeps record of them.
- c. Make decisions democratically.
- d. Participation in the organization is voluntary.
- e. It is financially and administratively sustainable.
- f. Take steps and ensure maintenance of watercourses.

2.6. Process Monitoring and Spot Checking:

Spot-checking procedures systematically validated the physical progress of watercourse improvements and WST constructions, including adherence to engineering standards and specifications. Continuous process monitoring was conducted concurrently, overseeing WUAs mobilization activities and providing real-time feedback on project progress.

2.7. Ensuring Data Quality and Validity:

To guarantee data accuracy, extensive enumerator training was conducted prior to fieldwork, supported by on-going field supervision. Comprehensive validation checks were systematically carried out at each stage of data collection, entry, and analysis, ensuring robust, reliable, and valid baseline data.

2.8. M&E Field Staff Trainings

To enhance the capacity of field staff and ensure efficient data collection, a series of training sessions were conducted. These sessions focused on survey methodology, questionnaire understanding, monitoring procedures, training of android application for data collection, pretesting of questioner in field, training of pygmy meter and data validation techniques.

For Training and guidance purpose of M&E Field staff, a survey manual was prepared and submitted to FPMU which include basic concepts about surveying and is intended for use in the training course and helped enumerator for better understanding of the questionnaire and monitoring tools.

Total ten field teams were deployed in Zonal Office i.e. ICT, Punjab, KPK & Balochistan. For maximal output, a training session was conducted for the enumerators' team. A survey manual was developed and fine-tuned which directed the team throughout the survey and provided basic information and instructions.

Training Sessions of Field Teams and Key Staff on Monitoring Tools & Android Application

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

Training on Measurement of Water Flow (Pygmy Current Meter) during the Month of March 2021

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

Pre-Testing of the Monitoring Tools:

Pre-Testing of the Monitoring Tools in the Field Areas was also conducted in all zones.

Punjab

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

Date of Visit:

March 26, 2021, Muridke, ADA-OFWM Office and field

March 27, 2021, DDA-OFWM Sheikhupura Office and Field.

ME&IE Consultants Team:

1. Muhammad Yousaf Bhatti, Deputy Team Leader (ME&IE Specialist)
2. Muhammad Awais, Field Team Incharge
3. Muhammad Zubair, Field Team Incharge
4. Muhammad Rizwan Suleman, Field Team Incharge
5. Misbah ur Rehman, M&E Field Officer
6. Nauman Rasheed, M&E Field Officer
7. Muhammad Bilal Sohail, M&E Field Officer
8. Umar Farooq Hammad, M&E Field Officer
9. Ali Haider, M&E Field Officer
10. Shahid Khalil, M&E Field Officer

Balochistan

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

ME&IE Consultants Team:

1. Rizwan Ahmed, Deputy Team Leader (ME&IE Specialist)
2. Manzoor Ahmad Kasi, Field Team Incharge
3. Khuda dost, M&E Field Officer

4. Qaisar Tareen M&E Field Officer
5. Hamza Qureshi M&E Field Officer

As per schedule the field team of NPIW-II ME&IE Consultants KP Zone made field visits of district Peshawar for pre-testing of the monitoring tools. Keeping in view the time constraint the field visits were restricted to the central district of the province KP Field Team under supervision of DTL Punjab performed pretesting of the Monitoring tools. Selection of these villages were made on the basis of source of irrigation. On this criterion two sites one for tube well and the other for canal irrigation were selected. Four cases were selected in these two sites listed below.

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

Date of Visit:

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

ME&IE Consultants Team:

1. Dr. Humayun Khan Deputy Team Leader (ME&IE Specialist)
2. Muhammad Bilal, Field Team Incharge (ICT Zone)
3. Mehmood ul Hassan, Field Team Incharge
4. Inam Ullah Khan, Field Team Incharge
5. Mumtaz Ullah, Field Team Incharge
6. Abdul Rauf Saad, M&E Field Officer
7. Ferhan Tayyab, M&E Field Officer
8. Aftab Ahmed, M&E Field Officer
9. Matloob Hussain, M&E Field Officer
10. Fawad Ali, M&E Field Officer
11. Ather Iqbal, M&E Field Officer

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

Three days Training at Zonal Office, Quetta.

The Field Team members have given a training by Deputy Team Leader of 03 days from 21st to 23rd April 2021. The field staff were trained about the total project activities, role of OFWM, Project Consultants, and other stakeholders. The staff were briefed about Monitoring Tools so that they get well understand the monitoring system and take the data from field as per TORs. The training was covered following topics:

1. Project briefing
2. Session of Monitoring Tools.
3. Briefing on Survey Manual
4. Guidelines to conduct Bassline Surveys.
5. Monitoring Strategy at Field Level.
6. Give session on Regular Monitoring/Spot Checking

The ME&IE Consultants, Balochistan carried out training of 02 days in Zonal Office Quetta for field Staff and also attended 03 days training conducted by GIS & Information System Department through Zoom.

Four days Training from National Office, Islamabad

All field team members of Punjab, Balochistan, ICT, KPK, AJK & GB, Team Leader and Deputy Team Leaders of all zones got training on ZOOM from 3rd May 2021 to 6th May 2021

An extensive four days virtual training was organized by Mr. Rizwan Saleem (Key ICT Specialist) and his Team from 03-05-2021 to 06-05-2021 for the Field Team members (interviewers) and Field Team In Charge (Field Supervisors) of all Zones.

The major objectives of the training were;

- To explain ME&IE consultant roles, responsibilities and expectations for their involvement in the survey.
- To understand the survey questionnaire and the intent of the questions.
- To carry out Field operations and survey process
- To conduct an effective interview, using the mobile phone for collecting data.
- To present a demonstration on an android based application for survey.

Day 1 started with recitation of Holy Quran, introductory session of all participants and training ground roles. There was a brief introduction of baseline and watercourse improvement surveys along with the understanding of questions.

During day 2 & 3 detailed understanding of Key terms, baseline and monitoring survey questionnaire use provided. A comprehensive guideline regarding the collection of basic data and coordination with local authorities were given.

Lastly, on day 4 the training on android-based application was conducted. Team got awareness about use of mobile phones during the survey, entering data, navigation the survey sections, skip patterns and data quality checks. The most important part of the training was activity-based learning, interview role play based on case scenarios. In addition to it, the participants learned about feeding, editing and submission of data to the database.

A very comprehensive and detailed question answer session was held by the ICT Team. The Participants asked the questions for clarification of all the points regarding baseline, monitoring and android based training. The ICT team addressed their quarries and gave brief answers to their questions. Clear picture of android based training will become in the field. The training session ended with thanks to Mr. Rizwan Saleem IT Specialist and his team members.

Training of Pygmy Current Meter

An online training session via ZOOM was carried out on 15th June 2021 by the ICT team at Lahore on the use of PYGMY meter at watercourse for all ME&IE field teams. The training was continued more than 2 hours and teams were given details regarding utilization of PYGMY meter.

According to training, PYGMY meter has 2 main parts, one is its rotary fan which moves with water and produces sound. While second thing is its head phone. A person who wore head phone, holds a stop watch and run it for 40 seconds. During these 40 seconds the operator listen and count the rotation of the rotary fan and record the reading. This reading will be further calculated in formulas and we receive answer in flow Liter/second.

It was further shared that the 1st Reading must be taken from head of the watercourse and the PYGMY meter may be kept 10 meters away from watercourse outlet (Mogha). If the area of the watercourse is less than 3 square feet, then a total of 3-3 readings will be collected from Head, mid and Tail section (total 9 readings). While if its area lies between 3 to 4 square feet than 6 readings will be collected at each Head, mid and tail section. At increase of each square feet, an addition of 3 readings will be carried out at head, mid and tail section.

TRAINING AND CAPACITY BUILDING

In compliance with the workshop in the National office Islamabad, a two days' workshop/meeting was arranged in the KP Zonal office Peshawar on September 24-25, 2021 for training of the field teams.

1st day, September 24, 2021:

The DTL KP Zone gave opening remarks with the brief objective of the project and the purpose of the workshop. The need of arranging of the workshop was explained in the light of the workshop held on August 30-31 and September 1, 2021.

DR. Abdul Quddus, Team Leader (Resource Person) delivered detailed lecture on different aspects of the NPIWC – II, ME&IE consultants, and expectations of the clients from the consulting firm. He explained all the concept mentioned in MTs; including per acre cost of production, per acre yield, cropping pattern, crop rotation, inputs required for different cost etc. Method of conducting the survey and monitoring of water courses and water storage tanks were explained in detail. The participants were given opportunity to raise their concern about issues they faced in the field during the survey. Detail deliberations were made during the workshop. The Team Leader responded to all the questions raised during the session.

2nd day, September 25, 2021:

2nd day of the workshop was specifically meant for understanding of the MTs for conducting the field survey. DTL KP Zone distributed the MTs among the team members and explained in detail each and every question given in the MTs. Then all the participants of the workshop were distributed in three groups headed by the FTIs. The FTIs along with their teams interviewed each other and where any confusion found, was noted. This exercise remained for about three hours. All the three teams noted the confusions they found in the MTs. The DTL explained and cleared all the confusion of the participants.

At the end the DTL concluded the session and thanked all the participants for their patience.

Several workshops/trainings were conducted for field staff regarding baseline survey and regular monitoring at Zonal Office, Quetta.

On October 6, 2021, KP Zonal office conducted training of field staff on water flow measurement of a water-course. DTL KP Zone organized this training in collaboration with AGES consultants.

Following personnel participated in this training.

1. Dr. Humayun Khan, DTL KP Zone
2. All Field Team Members of M&E Consultants
3. Engineer Zubair shah AGES Consultants Field Team Members
4. Engineer Zubair shah, AGES Consultants
5. Engineer Rehmat shah, Field Team Members

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

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

In House Review Training

During last quarter of 2021, the in-house review training was carried out pertained to the following aspects.

1. General objectives/goals of the projects and field operations by Dr. Muhammad Abdul Quddus Agri. Economist (National office).
2. Briefing / Explanation of reviewed Monitoring Tools by Muhammad Yousaf Bhatti Deputy Team Leader, Punjab Zone (Also reviewed Monitoring Tools were submitted to National Office, for further necessary)
3. Field plan/guideline including observations /collection of data on success story/ Case study, Tour notes - Muhammad Yousaf Bhatti Team Leader, Punjab Lahore

4. Case study on social and gender, particularly woman participation Guideline/data collection instructions as prepared by Ms. Muniza Tarar (Social & Gender Specialist. National Office) delivered to field teams
5. Mock exercise by the field teams on collection of data from various respondent in the field.

IMPROVEMENT OF MONITORING TOOLS AND REFRESHER TRAINING WORKSHOP

Improvement of MTs is a continuous process throughout the implementation of the ME&IE activities by the consultants. In the light of experience of data collection MTs were more refined by the consultants. To make the familiarize with this improvement / refinement in the MTs a four (04) days' refresher training workshop was conducted in Consultants' National Office Islamabad. All the DTLs and Field Team Incharges along with Core Team and Authorized Representative of the JV participated in the workshop.

The consultants were also familiarized with the updated Android application for data collection. SOPs were also devised for data collection in order to ensure the efficiency and quality of the data at the field level. The workshop was conducted under the supervision of Team Lead and Authorized representative of JV. All the FTIs were advised to disseminate the learning to their respective field officers and they must follow the SOPs for the upcoming data collection processes.

This training/refresher was held to enable the participants to improve the Android based data collection for Baseline, Impact and Monitoring Surveys. Activities of the training are detailed below.

Day-1:

- Introduction of participants
- Management Speeches
- Role of FTI/Supervisors & Enumerators
- Survey Methodology
- Issues/Problems at Province Level
- Presentation of Monitoring Tools
- General Discussion
- ME&IE Consultants updated progress

Day-2

- Importance of technology during field survey
- Farming practices and input data
- Planning of activities for 2022-23
- Speech by NPC, FPMU
- Android Application and Digital Forms
- Discussion of hurdles, issues, data monitoring, validation & reliability checks
- Annual Workplan and Budget

Day-3

- Field visit in ICT Zone along all participants
- Water Flow Measurement through Pygmy Meter
- Discussion session, field experience and hurdles mutually shared for enhancing understanding
- Meeting of TL, DTLs and Core Team Members on planning for next quarter and discussion of management issues.

Day-4

- Field Data Validations
- Management Speech
- Closing remarks by all DTLs
- Wrap-up Session

Field Teams Training: On the return from the workshop the FTIs were assigned the task to offer the training to their respective teams at their zonal offices. In the supervision of the DTL the FTIs of the KP zonal office Peshawar offered training to the field team engineers for four days including one-day field trip for demonstration of water measurement on site. The FTIs discussed each and every question of all the MTs with the field team engineers in detail.

The ICT Team conducted 04 days Refresher Training & Annual Planning Workshop at National office Islamabad for ME&IE staff to enhance their capability of Baseline, Impact & Monitoring data collection through the Android Based Application for rapid and validated data transmission. 22 members from all Zone/Units participated in this training.

One-day training workshop on Capacity Building (**Android Based Data Collection Application and Improvement of the Quality of Data Collection**) for the staff of Khyber Pakhtunkhwa districts' field teams of (NPIWC-II), was conducted at Directorate OFWM office, Peshawar on August 12, 2022. The Director General OFWM, Mr. Javed Iqbal and Hamid Ullah (Focal Person) also attended the training workshop, encouraging participants to take the training seriously with the aim of improving data collection and overcoming pendency and discrepancies of the collected data.

Training Methodology and Approach: The multitude of training methodologies was utilized in order to make sure all the participants get the whole concepts and they learn to present better-quality data.

- **Discussion Approach:** A participatory-discussion approach was used because the target staff were in a better position to identify existing weaknesses, strengths and need for change. In the course of discussion, the members of survey teams familiarized themselves with the environment and were provided proper guidance for gathering the Baseline-IV, data in respect of Agricultural and Technical aspects.
- **Training Method:** Participatory training methods were used during the workshops, which involved the learners actively. During the training workshops, the following learner-centered training methods were used:
 - Brainstorming for good data collection
 - Group discussion.
 - Demonstrations of discrepancies of the formerly collected data.
- **Training Intervention:**

Delivery Process: The training was delivered in three modules. The capacity levels of the various participants differed from one to the other, which presented a challenge in the delivery of the trainings. To overcome this challenge, different approaches were used.

Module 1 – Understanding of Digital Data Collection and their Benefits

- Problems in Data Collection and Management
 - Data reliability (will we get the same data, when collected again?)
 - Data validity (Are we measuring what we say we are measuring?)
 - Data integrity (Is the data free of manipulation?)
 - Data accuracy/precision (Is the data measuring the “indicator” accurately?)
 - Data timeliness (Are you getting the data in time?)
 - Data security/confidentiality (Loss of data / loss of privacy)
- How technology helps us to address the above issues?
- Why use Mobile Technology in Data Collection?

Module 2 – Introduction to Data Collection Forms

- Technical discussion on each field of the Watercourse Data Collection forms
- Technical discussion on each field of Data Collection forms

Module 3 – Introduction to Android Application & Digital Data Collection Forms

- Application Interface
- Digital Forms

- Fill Blank Form
- Edit save Form
- Send Finalized Form
- Pre-Designed Forms of Watercourses and Water Storage Tanks

Module 4 – Discussion

- All participants discussed their related forms
- Discuss the data validation and review the mistakes during the discussion

• Participants Feedbacks

At the end of the workshop, participants were invited to fill up the feedback forms. While most participant responses were aligned with the workshop objectives, there were many who had never participated in such training before and were fairly unclear about what to expect. The list of feedbacks has been summarized below:

- Learn more about the Android Application
- Knowledge to improve the technical skills
- How the teams will save time in comparison to conventional data collection methods
- How delays can be handled between activities
- Reduce the communication gaps between teams and higher authorities
- Learn more about the Watercourses activities data
- Knowledge on conservations
- To be committed up to the end of the Training Workshop
- To learn how to conduct trainings
- To be able to transfer knowledge to other team members
- To learn about keeping good records

2.8.1. Outcomes of the Training Program

- Increased **enumerator competency** in data collection and field operations.
- Standardized **survey methodologies** for uniform data collection.
- Strengthened **monitoring mechanisms** to ensure high-quality data.

3. PROGRESS MONITORING

In this section, Project overall physical targets progress has been evaluated. Project physical construction activities started in July 2019 in KP and AJK, in September 2019 in the Punjab and Balochistan, in April 2021 in Islamabad Capital Territory and in March 2020 in GB. Component wise details of work completed by the end of June 2024 are given below:

3.1. Improving Watercourses

During the Project period (5 years), the total number of 47,278 watercourses were targeted to be improved. By the end of June 2024, 14,443 watercourses have been improved, which are 31% of the total project 5 years targets. Obviously, achievement is much behind the targets particularly in Khyber Pakhtunkhwa, Balochistan, Gilgit Baltistan and in Capital Territory of Islamabad where the achievement is even less than one-third or 33% of the Project targets. Further zone wise / unit wise detail may be seen in **Table 10** and **Figure 1** below:

Table-10: Improving Watercourses: Achievements Versus Project Targets by the end of June 2024

Zone/Unit	Project Targets	Target Achievements up to end June 2024	
		Physical Achievements	Per cent Achievement
Punjab	10,000	5,108	51%
Khyber Pakhtunkhwa	13,000	3,285	25%
Balochistan	20,389	4,510	22%
Gilgit Baltistan	2,500	913	37%
AJK	1,165	586	50%
ICT	224	41	18%
Total	47,278	14,443	31%

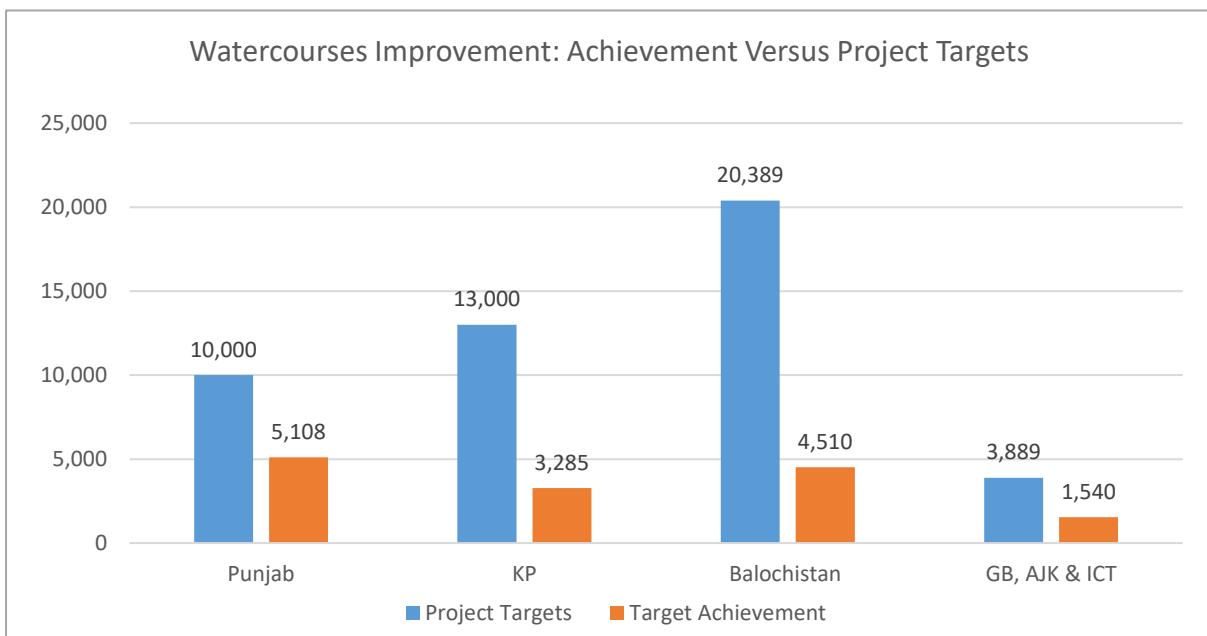


Figure 1: Watercourses Improvement: Achievements versus Project Targets

3.2. Constructing Water Storage Tanks (WSTs)

During the Project period (5 years), the total number of 14,932 Water Storage Tanks were targeted to be constructed. By the end of June 2024, 5,915 WSTs have been constructed which are 40% of the total project 5 years targets. Thus, achievement is much behind the targets particularly in Khyber Pakhtunkhwa and in Punjab, where

the achievement is only 25% and 37% of the Project targets. Further zone wise / unit wise detail target short falls may be seen in **Table 11** and **Figure 2** below:

Table-11: Construction of WSTs: Achievements Versus Project Targets by the end of June 2024

Zone/Unit	Project Targets	Targets Achievement up to end June 2024	
		Physical Achievement	Per cent Achievement
Punjab	3,000	1121	37%
Khyber Pakhtunkhwa	5,000	1225	25%
Balochistan	5,507	2670	48%
Gilgit Baltistan	825	455	55%
AJK	600	444	74%
Total	14,932	5,915	40%

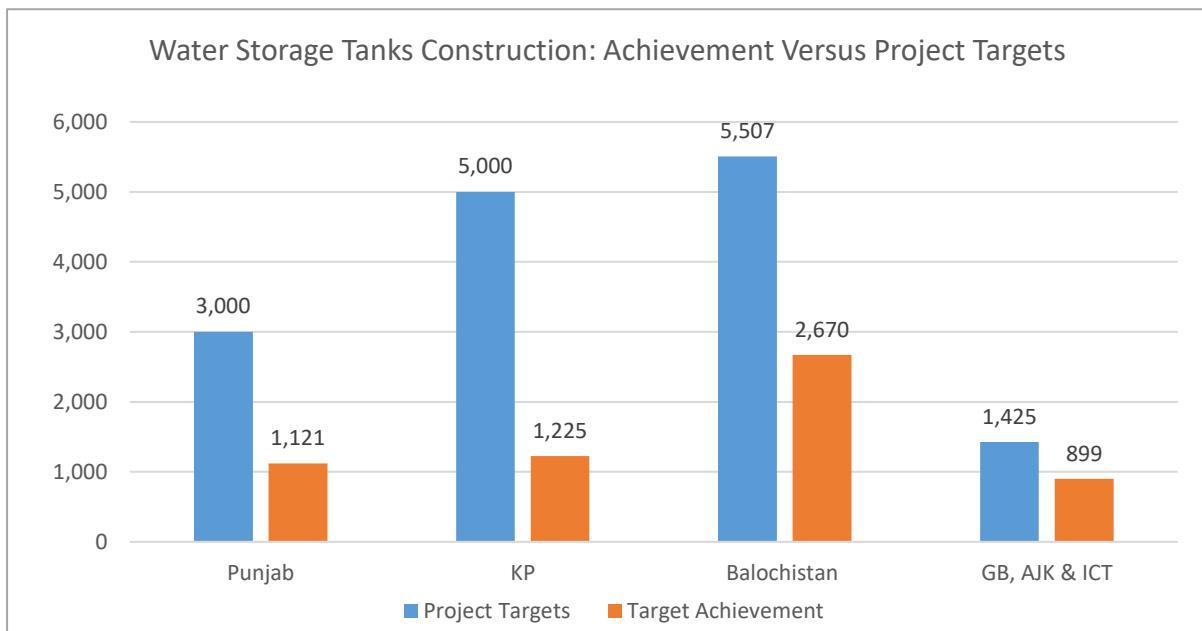


Figure 2: Construction of WST: Achievements versus Project Targets

4. MONITORING OF WUAs: COMPONENT C1

Under Component C1, Water Users' Associations have been formed on Watercourses to facilitate their improvement and to resolve water disputes among the water users. Working of Water Users' Associations has been evaluated and assessed by collecting data / information through Template MT-03 on awareness of the farmers about WUAs, functioning of WUAs, WUAs' meetings and participation of the member farmers in WUAs meetings and role of WUAs in resolving disputes. The information collected through Template MT-03 has been analyzed and results described in this Chapter.

Monitoring of WUAs aimed to assess farmers' awareness, functionality, effectiveness in dispute resolution, and overall community involvement.

For Monitoring Evaluation of Component C1, a sample of 744 watercourses was selected at stage one. A complete profile of the 744 sample watercourses is given in the next Chapter. At the second stage of sampling, 3,310 Farmers / tenants; 1500 from Punjab, 883 from KP, 510 from Balochistan and 211 from GB, 199 from AJK and 7 from ICT on 744 sample watercourses were asked about the awareness, functioning, meetings held by and disputes resolving of WUAs.

Key Findings Present results in concise bullet points clearly highlighting important statistics.

- Awareness:** 85% of farmers were aware of WUAs.
- Functionality:** 94% of WUAs were established democratically, with 49% conducting regular meetings.
- Participation:** 71% of farmers actively participated in WUA activities.
- Dispute Resolution:** Only 5% faced disputes; of these, 60% were fully resolved by WUAs.

The results indicate strong awareness and democratic formation of WUAs; however, regularity and participation in meetings are present areas for improvement. Enhanced engagement and consistent meetings could further improve the effectiveness of WUAs. Results are summarized below:

4.1. Awareness about WUAs

On an overall basis, 2,826 (85%) of the total 3,310 respondent farmers were aware of the existence and functioning of WUAs on their respective watercourses. This indicates a relatively high level of awareness among farmers regarding the functioning of WUAs. However, about 10% of respondents were found unaware, which suggests there are still pockets of beneficiaries who are not fully informed about these associations and their role in watercourse management. Additionally, 5% of the respondents chose not to provide any response on this matter, reflecting either a lack of interest or uncertainty about the associations.

A more detailed breakdown of these findings, disaggregated by specific zones or units, is presented in **Table 12**, which highlights regional variations in WUA awareness levels.

Table-12: Awareness About Water User Associations

Zone / Unit	Total Respondents	Awareness		
		Yes	No	No Response
Punjab	1500	93%	3%	4%
KP	883	80%	13%	7%
Balochistan	510	74%	26%	0%
GB	211	80%	7%	13%
AJK	199	89%	6%	5%
ICT	7	25%	75%	0%
Overall	3310	85%	10%	5%

Out of 2,826 farmers, who were aware of the formation of Water Users' Associations, 87% farmers informed that On-Farm Water Management (OFWM) department had conducted awareness meetings prior to the establishment of these associations. These meetings played a crucial role in informing and preparing the farmers for the formation and functioning of the WUAs, ensuring their active participation.

Detailed zone / unit-wise information is given in **Table 13** below:

Table-13: OFWM Held Awareness Meetings Before Formation of WUA

Zone/Unit	Respondents Aware of WUAs	Yes	No
Punjab	1395	94%	6%
KP	706	89%	11%
Balochistan	377	79%	21%
GB	169	58%	42%
AJK	177	81%	19%
ICT	2	100%	0%
Overall	2826	87%	13%

Out of a total of 2,826 farmers who were aware of the formation of Water Users' Associations, 71% farmers informed that they personally attended the awareness meetings conducted by OFWM department before formation of WUAs.

A zone / unit-wise breakdown of attendance is provided in **Table 14** below:

Table-14: Water User's Participated in Awareness Meetings

Zone/Unit	Respondents Aware of WUAs	Yes	No
Punjab	1395	67%	33%
KP	706	72%	28%
Balochistan	377	80%	20%
GB	169	78%	22%
AJK	177	70%	30%
ICT	2	50%	50%
Overall	2826	71%	29%

Among the 2,826 farmers who were aware of the formation of Water Users' Associations, 94% of farmers confirmed that the WAUs were established through a democratic process. This indicates a strong emphasis on fairness in the formation of these associations, ensuring that the member has an active role in decision-making.

A detailed zone / unit-wise breakdown of these responses is provided in **Table 15** below:

Table-15: WUA Formed Democratically

Zone/Unit	Respondents Aware of WUAs	Yes	No
Punjab	1395	97%	3%
KP	706	94%	6%
Balochistan	377	92%	8%
GB	169	88%	12%
AJK	177	90%	10%
ICT	2	100%	0%
Overall	2826	94%	6%

Out of a total of 2,826 farmers who were aware of the formation of Water Users' Associations, 87% farmers informed that they understood the role and functions of the WAUs. This high-level awareness suggests that the efforts made by the OFWM department to inform farmers about the WUAs' responsibilities have been effective.

A detailed zone / unit-wise breakdown is provided in **Table 16** below:

Table-16: OFWM Provide Awareness About WUA Functions/Role

Zone/Unit	Respondents Aware of WUAs	Yes	No
Punjab	1395	95%	5%
KP	706	81%	19%
Balochistan	377	88%	12%
GB	169	63%	37%
AJK	177	84%	16%
ICT	2	100%	0%
Overall	2826	87%	13%

4.2. Functioning of WUAs

Among the 3,310 member respondents, 46% were located at the head of WC reaches, 29% at middle reaches and 25% at tail reaches. This distribution provides insight into the geographic engagement of farmers within the WUAs.

A detailed zone / unit-wise breakdown is provided in **Table 17**.

Table-17: Distribution of Farmer's Located at Watercourse

Zone/Unit	Total Respondents	Head	Middle	Tail
		%	%	%
Punjab	1500	39%	31%	30%
KP	883	58%	23%	19%
Balochistan	510	51%	38%	11%
GB	211	42%	24%	34%
AJK	199	49%	29%	22%
ICT	7	100%	0%	0%
Overall	3310	46%	29%	25%

Of the 2,826 member respondents, 90% were found as water users of lined watercourses.

Zone wise / unit wise detail may be seen in **Table 18** below.

Table-18: Farmer's are Water Users' of Lined Watercourses

Zone/Unit	Member Respondents	Yes	No
Punjab	1395	97%	3%
KP	706	76%	24%
Balochistan	377	86%	14%
GB	169	92%	8%
AJK	177	97%	3%
ICT	2	100%	0%
Overall	2826	90%	10%

About 92% of the farmers aware of WUAs reported that WUAs were functioning properly.

A detailed zone / unit-wise breakdown is provided in **Table 19**.

Table-19: Water Users Association Functional/Operational

Zone/Unit	Total Respondents Aware of WUAs	Yes	No
Punjab	1395	97%	3%
KP	706	88%	12%
Balochistan	377	74%	26%
GB	169	91%	9%
AJK	177	96%	4%
ICT	2	100%	0%
Overall	2826	92%	8%

Only 229 (8%) respondents reported that WUAs were not functioning out of which 171 reported that these were not functioning due to being farmers much apart from the WCs, 113 reported not functioning due to social conflicts and 16 reported due to other reasons.

A detailed zone / unit-wise breakdown is provided in **Table 20**.

Table-20: Reasons of Non-Functional/Operational WUA (Multiple Responses)

Zone/Unit	Respondents Reporting WUAs non-functional	Farms are located much apart	Farmers Internal/social conflicts	Others reasons
Punjab	39	33	26	0
KP	79	56	50	0
Balochistan	90	82	16	16
GB	14	0	14	0
AJK	7	0	7	0
ICT	0	0	0	0
Overall	229	171	113	16

Out of total 2,826 members of WUAs, 1,588 were motivated to become the member of WUAs by the fellow farmers, 362 by the big landlords and 1,238 by OFWM teams.

A detailed zone / unit-wise breakdown is provided in **Table 21**.

Table-21: Who Motivated to be a Member (Multiple Responses)

Zone/Unit	Member Respondents	Fellow farmers	Big landlord	OFWM field team
Punjab	1395	938	190	538
KP	706	367	13	344
Balochistan	377	147	117	158
GB	169	60	37	79
AJK	177	76	5	117
ICT	2	0	0	2
Overall	2826	1588	362	1238

Out of a total of 2,826 members, 17% reported to have paid membership fee, 78% reported not to have paid the fees and remaining 4% did not give any response.

A detailed zone / unit-wise breakdown is provided in **Table 22**.

Table-22: Paid Membership Fees

Zone/Unit	Total Member Respondents	Yes	No	No Response
Punjab	1395	27%	69%	4%
KP	706	2%	91%	7%
Balochistan	377	24%	73%	3%
GB	169	0%	100%	0%
AJK	177	0%	100%	0%
ICT	2	0%	100%	0%
Overall	2826	17%	79%	4%

4.3. WUAs Meetings

Half (49%) of the member respondent farmers informed that meetings by WUAs were held, 25% reported no meeting were held and 26% were of the view that these meetings were held Occasionally.

A detailed zone / unit-wise breakdown is provided in **Table 23**.

Table-23: Meetings Held by WUA

Zone/Unit	Total Member Respondents	Yes	No	Occasionally
Punjab	1395	52%	32%	16%
KP	706	41%	19%	40%
Balochistan	377	45%	29%	26%
GB	169	52%	9%	39%
AJK	177	62%	6%	32%
ICT	2	0%	0%	100%
Overall	2826	49%	25%	26%

Out of a total of 2,826 member respondents, 35% reported that they always participated in the meetings, 63% participated occasionally and 2% never participated.

A detailed zone / unit-wise breakdown is provided in **Table 24**.

Table-24: Participation of WUA's Members in Meetings

Zone/Unit	Total Member Respondents	Always	Occasionally	Never
Punjab	1395	26%	72%	2%
KP	706	44%	56%	0%
Balochistan	377	49%	41%	10%
GB	169	27%	73%	0%
AJK	177	42%	58%	0%
ICT	2	0%	100%	0%
Overall	2826	35%	63%	2%

When asked about the frequency of the meetings, 7% of respondents reported that the meetings were held every month, 4% told quarterly, 3% once a year and the remaining 86% informed that these meetings used to be held as and when need arose.

A detailed zone / unit-wise breakdown is provided in **Table 25**.

Table-25: Frequency of WUA's Meetings

Zone/Unit	Total Member Respondents	Every Month	Quarterly	Once a Year	As per need
Punjab	1395	12%	5%	3%	80%
KP	706	2%	1%	2%	95%
Balochistan	377	5%	5%	2%	88%
GB	169	1%	12%	8%	79%
AJK	177	2%	6%	0%	92%
ICT	2	0%	0%	0%	100%
Overall	2826	7%	4%	3%	86%

When asked about the attendance of the meetings, 68% of respondents reported that they attended meetings regularly, whereas 5% never attended these meetings and 27% attended the meetings occasionally.

A detailed zone / unit-wise breakdown is provided in **Table 26**.

Table-26: Participation of Majority Members in WUA's Meetings

Zone/Unit	Total Member Respondents	Yes	No	Occasionally
Punjab	1395	82%	6%	12%
KP	706	53%	3%	44%
Balochistan	377	62%	7%	31%

Zone/Unit	Total Member Respondents	Yes	No	Occasionally
GB	169	42%	5%	53%
AJK	177	57%	0%	43%
ICT	2	0%	0%	100%
Overall	2826	68%	5%	27%

About 89% of member respondents informed the WUAs were established through the democratic process, 2% reported that no democratic process was adopted in their establishment and 9% were of the view that to some extent their establishment was through democratic process.

A detailed zone / unit-wise breakdown is provided in **Table 27**.

Table-27: Decisions made Democratically in WUA's Meetings

Zone/Unit	Total Member Respondents	Yes	No	To Some Extent
Punjab	1395	92%	2%	6%
KP	706	86%	1%	13%
Balochistan	377	77%	9%	14%
GB	169	90%	0%	10%
AJK	177	96%	0%	4%
ICT	2	100%	0%	0%
Overall	2826	89%	2%	9%

4.4. Dispute Resolution by WUAs

About 95% of member farmers responded that they did not face any dispute. Only 5% faced disputes.

A detailed zone / unit-wise breakdown is provided in **Table 28** below.

Table-28: Dispute Faced During Watercourse Improvement

Zone/Unit	Total Member Respondents	Yes	No
Punjab	1395	8%	92%
KP	706	2%	98%
Balochistan	377	7%	93%
GB	169	0%	100%
AJK	177	0%	100%
ICT	2	0%	100%
Overall	2826	5%	95%

About 60% of member respondents reported that WUAs were always helpful in resolving farmers problems/disputes, 33% responded that the disputes were resolved to some extent and the remaining 7% were of the view that the disputes were never resolved.

A detailed zone / unit-wise breakdown is provided in **Table 29** below.

Table-29: WUA Helps in Solving Farming Problems / disputes

Zone/Unit	Total Member Respondents	Always	To Some Extent	Never
Punjab	1395	59%	30%	11%
KP	706	61%	35%	4%
Balochistan	377	47%	51%	2%
GB	169	72%	28%	0%
AJK	177	84%	16%	0%
ICT	2	0%	100%	0%
Overall	2826	60%	33%	7%

Out of 2,826 member respondents, 152 (5%) respondents faced 297 disputes out of which 60% were always solved, 33% solved to some extent and 7% never been solved.

A detailed zone / unit-wise breakdown is provided in **Table 30** below.

Table-30: Farmers Faced Disputes and Disputes Solved

Zone/Unit	Farmers Faced Disputes		Disputes Solved			
	Yes	No	No of Disputes	Always	To Some Extent	Never
Punjab	112 (8%)	1283 (92%)	238	59%	30%	11%
KP	14 (2%)	692 (98%)	27	61%	35%	4%
Balochistan	26 (7%)	351 (93%)	32	47%	51%	2%
GB	0 (0)	169 (100%)	0	72%	28%	0%
AJK	0 (0)	177 (100%)	0	84%	16%	0%
ICT	0 (0)	2 (100%)	0	0%	0%	0%
Overall	152 (5%)	2674 (95%)	297	60%	33%	7%

Out of 152 respondents faced disputes, 26% related to Land Acquisition, 63% on distribution of Naccas, 8% regarding funding for accounts and 3% on water theft.

A detailed zone / unit-wise breakdown is provided in **Table 31** below.

Table-31: Reasons of Disputes

Zone/Unit	Total Respondents	Land Acquisition	Distribution of naccas	Funding for accounts	Water Theft
Punjab	112	23%	67%	10%	0%
KP	14	10%	70%	0%	20%
Balochistan	26	52%	39%	0%	9%
GB	0	0%	0%	0%	0%
AJK	0	0%	0%	0%	0%
ICT	0	0%	0%	0%	0%
Overall	152	26%	63%	8%	3%

About 53% of disputes were solved by WUAs, 42% by OFWM department and 5% by Irrigation Department. Dispute arose only in Punjab and Balochistan, in other zones / units, there arose no dispute at all.

A detailed zone / unit-wise breakdown is provided in **Table 32** below:

Table-32: Who Resolved the Disputes

Zone/Unit	Total Cases Resolved	Resolved by		
		WUA	OFWM	Irrigation Department
Punjab	238	51%	42%	7%
KP	27	64%	36%	0%
Balochistan	32	58%	42%	0%
GB	0	0%	0%	0%
AJK	0	0%	0%	0%
ICT	0	0%	0%	0%
Overall	297	53%	42%	5%

5. BASELINE OF WATERCOURSES UNDER COMPONENT C2

The baseline assessment of watercourses aimed to measure existing conditions, agricultural productivity, and farm-level economic indicators to evaluate improvements resulting from project interventions.

Key Findings - Concise baseline indicators summary.

- **Land Use Intensity:** Average of 88.3%, ranging from 71.5% (Balochistan) to 94.1% (Punjab).
- **Cropping Intensity:** Average of 157%, highest in Punjab (188.9%), lowest in KP (102.3%).
- **Crop Yields (averages per acre):** Wheat (30.5 maunds), Rice (28.2 maunds), Cotton (26.2 maunds), Sugarcane (728.8 maunds).
- **Farm Income:** Gross income averaged PKR 94,682 per acre, net income PKR 50,293 per acre.
- **Employment Generation:** Average of 36.3 man-days per crop acre.

The baseline conditions indicate substantial variation across provinces. High cropping intensities and yields in Punjab contrast lower intensities in KP and Balochistan, indicating targeted interventions needed to address regional disparities.

By the end of June 2024, total number of completed watercourses was 14,443 for which baseline sample calculates / requires as 722 (**Table 33**) @ 5% under revised methodology. However, the actual sample size taken for baselines is 744 which is obviously above the required one. A complete profile of these 744 sample baseline watercourses is given below:

5.1. Profile of Sample Watercourses

For study, profile of sample Watercourses, Monitoring Template MT-01 was used (**ANNEX-D**).

5.1.1. Baseline Sample Size

Up to end of June 2024, total Watercourses improved are 14,443. The required Sample size under the revised methodology for this watercourses @ 5%, calculates 722 watercourses, however, actual baseline sample drawn is 744 watercourses which is notably greater than the required sample as mentioned above in **Table 8**.

A detailed zone / unit-wise distribution of this sample is provided in **Table 33**.

Table-33: Baseline Sample Size required and conducted

Zone/Unit	Mid-term Lined WC	% Sample Required	Sample Required	Baseline Surveys Conducted			
				BLS-1	BLS-2	BLS-3	Total
Punjab	4,487	5%	255	19	146	85	250
KP	3,336	5%	164	17	135	53	205
Balochistan	5,202	5%	226	11	50	142	203
GB	809	5%	46	1	0	39	40
AJK	608	5%	29	4	32	3	39
ICT	41	5%	2	2	5	0	7
Overall	14,483	5%	722	54	368	322	744

5.1.2. Sample Respondent Farmers

At the second stage, on each watercourse, respondent farmers were selected at random; 2 each at head, middle and tail reaches of each watercourse. However, the number of farmers on a watercourse was less than 6, all the farmers were selected. The total number of farmers interviewed in Baseline surveys was 3,310 and average respondents per watercourse were 4.4 detail of which is given in **Table 34** below.

Table-34: Respondent Sample Farmers on 744 Sample Watercourses

Zone/Unit	Total WC	Total Baseline	Average Respondents per WC
Punjab	250	1500	6.0
KP	205	883	4.3
Balochistan	203	510	2.5
GB	40	211	5.3
AJK	39	199	5.1
ICT	7	7	1.0
Total	744	3310	4.4

5.1.3. Type of Baseline Sample Watercourses

There are three types of watercourses to be lined under the project. These are (1) regular (new) watercourses, (2) 20 years old lined watercourses and (3) additional watercourses to be extended from 30% to 50%. Out of the 744 Sample watercourses, 526 are regular (New), 8 are 20 Years old and 210 come under additional lining.

Zone / Unit wise break up is shown in **Table 35** below.

Table-35: Types of Sample Watercourses

Zone / Unit	Regular (New)	20 years old	Additional Lining	Total
Punjab	53	0	197	250
KP	193	0	12	205
Balochistan	202	1	0	203
GB	40	0	0	40
AJK	31	7	1	39
ICT	7	0	0	7
Overall	526	8	210	744

5.1.4. Type of Lining of Baseline Sample Watercourses

There are seven major types of lining adopted under the Project. Rectangular /Bricks lining, PCP lining, PVC Pipe lining, PCC Pipe lining, HDPE Pipe lining, Stone Masonry lining and mixed lining. Out of a total of 744 Endline sample watercourses, 30 are rectangular/brick-lined, 347 are PCP-lined, 185 are PVC pipe-lined, 74 are PCC pipe-lined, 77 are HDPE pipe-lined, 1 is stone masonry-lined, and 30 have mixed lining types.

Zone / Unit wise sample distribution has been shown in **Table 36** below.

Table-36: Sample Watercourses According to Type of Lining

Zone/Unit	Total Sample WC	Rectangular /Bricks	PCPL	PVC Pipe	PCC	HDPE	Stone Masonry	Mixed Type
Punjab	250	0	250	0	0	0	0	0
KP	205	1	81	45	72	4	0	2
Balochistan	203	29	0	133	0	41	0	0
GB	40	0	0	0	1	17	1	21
AJK	39	0	16	0	1	15	0	7
ICT	7	0	0	7	0	0	0	0
Overall	744	30	347	185	74	77	1	30

5.1.5. Water Source of Baseline Sample Watercourses

Mainly there are three sources of water to the watercourses in the Project Area: Perennial Canals, Non-Perennial Canals and Non-Canal sources. In the sample drawn, 154 watercourses take water from the Perennial Canal, 165 watercourses from Non-Perennial Canal and 425 Watercourses from other (non-canal) sources.

Zone / Unit wise break up is given in **Table 37** below.

Table-37: Impact/Endline Sample Watercourses According to Water Source

Zone/Unit	Total Sample WC	Perennial Canal WC	Non-Perennial Canal WC	Total Canal WC	Non-Canal Water
Punjab	250	120	130	250	0
KP	205	33	9	42	163
Balochistan	203	1	25	26	177
GB	40	0	0	0	40
AJK	39	0	1	1	38
ICT	7	0	0	0	7
Overall	744	154	165	319	425

5.1.6. Water Source of Non-Canal Baseline Watercourses

Non-Canal sources include Tube wells, Nallahs, Streams, springs, Lift pumps, Water Storage Tanks etc. Out of total 425 non-canal watercourses, 304 (72%) take water from tube wells, 41 (10%) from Nallahs, 43 (10%) from streams, 13 (3%) from springs, 3 from lift pump, 7 from WSTs and 14 from other sources.

Zone / Unit wise and source wise detail of the baseline sample non-canal watercourses according to water source is given in **Table 38**.

Table-38: Non-Canal Sample Watercourses According to Water Source

Zone/Unit	Total Non-Canal Watercourses	Source of Water						
		Tube wells	Nallahs	Streams	Springs	Lift pump	WST/WHS	Others
Punjab	0	0	0	0	0	0	0	0
KP	163	115	8	15	6	2	7	10
Balochistan	177	175	0	2	0	0	0	0
GB	40	0	11	24	5	0	0	0
AJK	38	14	19	2	2	1	0	0
ICT	7	0	3	0	0	0	0	4
Overall	425	304	41	43	13	3	7	14

5.1.7. Location of Baseline Sample Canal Watercourses

Location wise distribution of sample watercourse on head, middle and tail of the minors / distributaries is given in **Table 39** below. Out of total 319 watercourses flowing from canals, 93 (29%) are located at head, 102 (32%) in the middle and 124 (39%) at tail of their minors / distributaries.

Table-39: Location of Sample Canal WC on Minor / Distributary

Zone/Unit	Sample Canal WC	Head	Middle	Tail
Punjab	250	52	85	113
KP	42	23	10	9
Balochistan	26	17	7	2
GB	0	0	0	0
AJK	1	1	0	0
ICT	0	0	0	0
Overall	319	93	102	124

5.1.8. Quality of Ground Water

Out of 744 sample watercourses, 583 (78%) fell in the sweet water area and 161 (22%) in Brackish water zone.

Zone / Unit wise break up is given in **Table 40** below.

Table-40: Quality of Ground Water in Sample Watercourses

Zone/Unit	Total Sample Watercourses	Sweet Water	Brackish Water
Punjab	250	132	118
KP	205	164	41
Balochistan	203	201	2
GB	40	40	0
AJK	39	39	0
ICT	7	7	0
Overall	744	583	161

5.1.9. Culturable Command Area on Sample Watercourses

Total Culturable Command Area (CCA) of the sample watercourses is 122,023 acres or 164 acres per sample watercourse.

Zone / unit wise detail is given in **Table 41** below.

Table-41: Culturable Command Area (CCA) on Sample WC

Zone/Unit Wise	Total Sample WC	Total CCA	Per WC Average CCA
Punjab	250	95,850	383.4
KP	205	9,020	44.0
Balochistan	203	12,911	63.6
GB	40	3,520	88.0
AJK	39	698	17.9
ICT	7	24	3.4
WC Type Wise			
Regular (New) WC	526	45,758	87
20 Years Old WC	8	188.9	24
Additional Lined WC	210	76,076	362
Overall	744	122,023	164

5.2. Profile of Sample Farmers

5.2.1. Distribution According to Size of Holding and Tenurial Status

During the selection, due consideration was given to the farm sizes and tenure of the farmers. Distribution of respondent growers according to size of holdings is given in **Table 42** and that of tenure in **Table 43**.

Table-42: Distribution of Farmers According to Size of Holding

Zone/Unit	Total Respondents	Distribution of Sample Farmers According to Size of Holding		
		Less than 12.5 acres	12.5 to 25 acres	More than 25 acres
Punjab	1500	1103 (74%)	259 (17%)	138 (9%)
KP	883	812 (92%)	61 (7%)	10 (1%)
Balochistan	510	413 (81%)	45 (9%)	52 (10%)
GB	211	211 (100%)	0	0
AJK	199	199 (100%)	0	0
ICT	7	7 (100%)	0	0
Grand Total	3310	2745 (83%)	365 (11%)	200 (6%)

Table-43: Distribution of Sample Farmers According to Tenure

Zone/Unit	Total Respondents	Distribution of Sample Farmers According to Tenure		
		Owners	Owner / Tenants	Tenants
Punjab	1500	1320 (88%)	75 (5%)	105 (7%)
KP	883	715 (81%)	44 (5%)	124 (14%)
Balochistan	510	464 (91%)	31 (6%)	15 (3%)
GB	211	211 (100%)	0 (0%)	0 (0%)
AJK	199	199 (100%)	0 (0%)	0 (0%)
ICT	7	7 (100%)	0 (0%)	0 (0%)
Grand Total	3310	2916 (88%)	150 (5%)	244 (7%)

Since the ME&IE teams have to visit each of the selected respondents two times (i.e., at the time of baseline and end-line impact surveys), the availability of the respondents in the village was also considered while taking the respondent as sample.

5.2.2. Location of the Respondents at the Watercourses

Location of the respondents at the watercourses was also kept in view while selecting the sample. About 41% were at the head of the watercourses, 33% in the middle reaches and the rest 26% were located at tail reaches.

Details are given in **Table 44** below.

Table-44: Farmer's Location on Watercourses

Zone/Unit	Total Respondents	Head	Middle	Tail
Punjab	1500	452 (30%)	506 (34%)	542 (36%)
KP	883	409 (46%)	288 (33%)	186 (21%)
Balochistan	510	186 (36%)	232 (46%)	92 (18%)
GB	211	111 (53%)	57 (27%)	43 (20%)
AJK	199	183 (92%)	8 (4%)	8 (4%)
ICT	7	7 (100%)	0 (0%)	0 (0%)
Grand Total	3310	1348 (41%)	1091 (33%)	871 (26%)

5.2.3. Average Farm Size at Sample Farms

In agriculture farm size or size of holding means average farm area operated by the farmers (either owned or rented in by him). Thus, the size of holding is calculated as area owned plus area rented in minus area rented out. Zone / Unit wise average farm size or size of holding of our respondent farmers is shown in **Table 45** and depicted in **Figure 3**. It may be seen from **Table 45** that the average farm size among the sample farms is 9.49 acres in Punjab, 5.11 acres in KP, 10.79 acres in Balochistan, 6.96 acres in GB, 1.56 acres in AJK and 3.19 acres in ICT and 7.87 acres on an overall basis.

Table-45: Total and Average Farm Area or Size of Holding (Acres) on Sample Farms

Zone / Unit	Total Farm Area	Number of Farmers	Average Farm Size
Punjab	14234.8	1500	9.49
KP	4512.5	883	5.11
Balochistan	5502.6	510	10.79
GB	1469.1	211	6.96
AJK	311.0	199	1.56
ICT	22.3	7	3.44
Grand Total	26052.3	3310	7.87

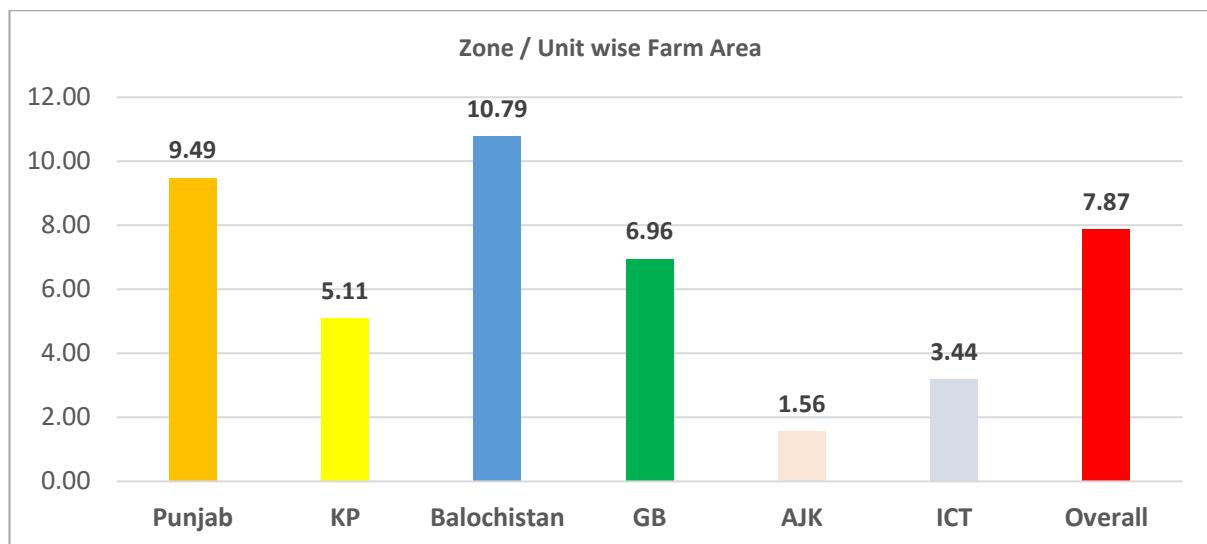


Figure 3: Average Farm Area of Watercourse Sample Farms

5.3. Analysis of Agricultural Indicators on Sample Farmers

5.3.1. Zone Wise Farm Area, Cultivated Area and Cropped Area

Farm Area is defined as area owned plus area rented in minus area rented out. All the farm area of a farmer is not necessarily cultivated by him. A part of the farmland or farm area is not often available for cultivation. This land may include land for human residences, land for rearing the livestock, land for water ponds meant for watering the farm livestock, land used for watercourses and paths and some other land not available for cultivation or non-cultivable lands. Thus, by definition, cultivated areas are always less than or equal to the Farm area.

Moreover, it is quite possible that during the year, all the cultivated areas might not be planted and cropped and some of it is left fallow (unplanted) due to shortage of water or non-availability of some other critical factors. On the other hand, it is also possible that the farmer might be getting two or even three crops from the same tract of cultivated land during the year if sufficient water is available to him to grow the additional crops. Thus, by definition, the cropping area may be less than, equal to or greater than the cultivated area.

During the baseline surveys, information on farm areas, cultivated area and cropped area has been collected from the sample respondent farmers and their Zone wise detail is given in **Table 46** below.

Table 46: Zone wise Total Farm Area, Cultivated Area and Cropped Area of Sample Farms

Zone/Unit	Farm Area	Cultivated Area		Cropped Area
		Acres		
Punjab	14234.8		13390	25297.4
KP	4512.5		4118	4212.7
Balochistan	5502.6		3932	4455.0
GB	1469.1		1273	1673.8
AJK	311.0		280	469.8
ICT	22.3		18	26.8
Overall	26052.3		23011.8	36135.4

5.3.2. Land Utilization on Sample Farms

The indicator used for land utilization is land use intensity, which is defined as the ratio of cultivated area to farm area. This is often expressed as percentage of cultivated areas to the farm area. Since the cultivated area is always less than or equal to farm area, thus, by definition, land use intensity (the ratio between the cultivated area and farm area) is always less than or equal to unity or 100%. It can never exceed unity or 100%. While analyzing the land use pattern of the respondent sample farms, it has been found that land use intensity in baseline surveys has varied from 71.5% in Balochistan to 94.1% in the Punjab and average at 88.3% for project on the whole. Zone / Unit wise break up / detail is given in **Table 47** and depicted in **Figure 4**.

Table 47: Land Use Intensities on Sample Farms

Zone/Unit	Total Farm Area	Total Cultivated Area	Land Use Intensity
	Acres		%
Punjab	14234.8	13390	94.1%
KP	4512.5	4118	91.3%
Balochistan	5502.6	3932	71.5%
GB	1469.1	1273	86.7%
AJK	311.0	280	90.1%
ICT	22.3	18	80.3%
Grand Total	26052.3	23011.8	88.3%

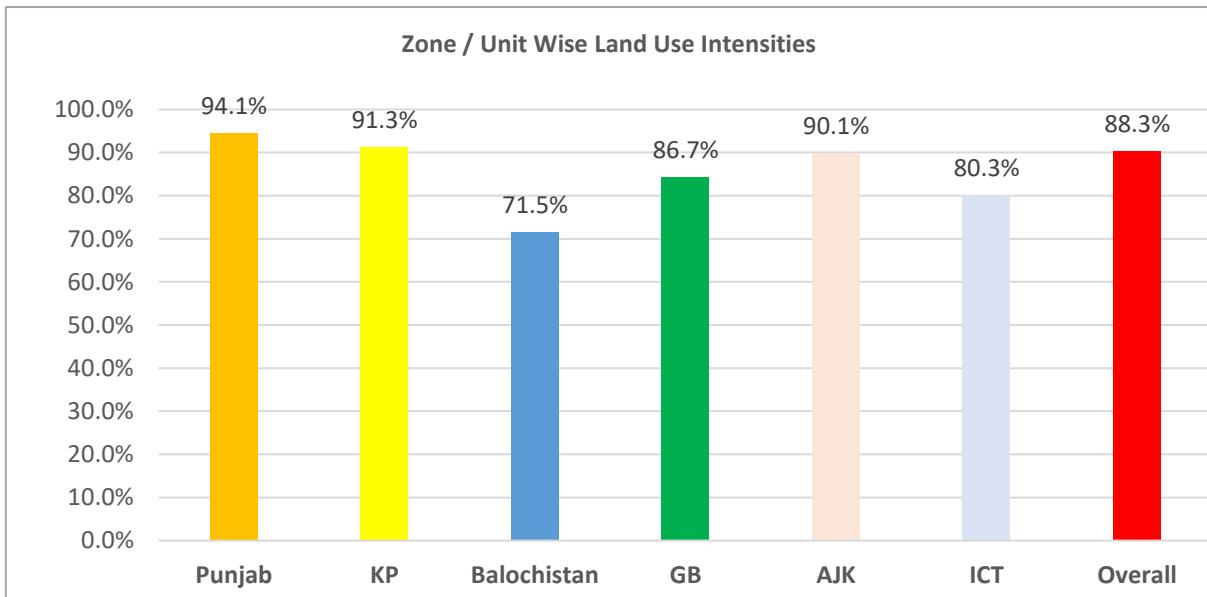


Figure 4: Zone / Unit Wise Land Use Intensities on Sample Farms

5.3.3. Land Utilization in Canal and Non-canal command Areas

Land use intensities have also been calculated for canal command and non-canal command areas separately. For canal command areas it calculates as 92.8% and for non-canal command areas as 80.7%. Zone / Unit wise land use intensities have been shown in **Table 48** below. This comparison has also been provided in **Figure 5**.

Table 48: Land Utilization in Canal Command and Non-Canal Command Areas

Zone /Unit	Canal Command Area			Non-Canal Command Area		
	Farm Area (Acres)	Cultivated Area (Acres)	Land Use Intensity (%)	Farm Area (Acres)	Cultivated Area (Acres)	Land Use Intensity (%)
Punjab	14234.8	13390.4	94.1%	0.0	0.0	0.0%
KP	879.9	838.7	95.3%	3632.6	3279.4	90.3%
Balochistan	1309.6	1016.3	77.6%	4192.9	2915.8	69.5%
GB	0.0	0.0	0.0%	1469.1	1273.2	86.7%
AJK	0.0	0.0	0.0%	311.0	280.1	90.1%
ICT	0.0	0.0	0.0%	22.3	17.9	80.3%
Overall	16424.4	15245.4	92.8%	9628.0	7766.4	80.7%

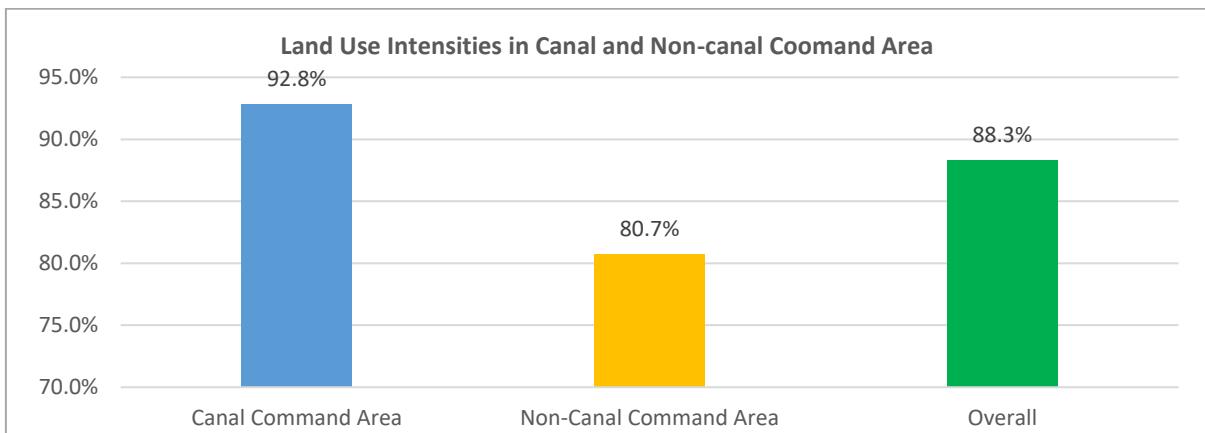


Figure 5: Canal and Non-Canal Command Area wise Land Use Intensities on Sample Farms

5.3.4. Cropping Intensities on Sample Farms

Another indicator used to measure agricultural efficiency is cropping intensity. Cropping Intensity is defined as the ratio of cropped area to cultivated area. This is often expressed as percentage of cropped area to the cultivated area. Since the cropped area can be less than or equal to or more than the cultivated area, thus, by definition, cropping intensity (the ratio between the cropped area and cultivated area) may be less than or equal to or more than unity or 100%. Normally its upper limit is 2 or 200% as two crops can be harvested in one year. However, with the advent of modern technology and evolution of short duration crop varieties, it has become possible now to have three crops in one year. Thus, now a day its upper limit may extend beyond 2 or 200%. However, it can never exceed 3 or 300%. While analyzing the cropping pattern of the respondent sample farms, it has been found that cropping intensity in baseline surveys has varied from 102.3% in KP to 188.9% in the Punjab and averaged 157.0% for project on the whole. Zone / Unit wise cropping intensities have been given in Table 49 and shown in Figure 6.

Table 49: Impact of WC Improvement on Cropping Intensities on Sample Farms

Zone/Unit	Cultivated Area		Cropping Intensity %
	Acres		
Punjab	13390.4	25297.4	188.9%
KP	4118.1	4212.7	102.3%
Balochistan	3932.1	4455.0	113.3%
GB	1273.2	1673.8	131.5%
AJK	280.1	469.8	167.7%
ICT	17.9	26.8	149.7%
Overall	23011.8	36135.4	157.0%

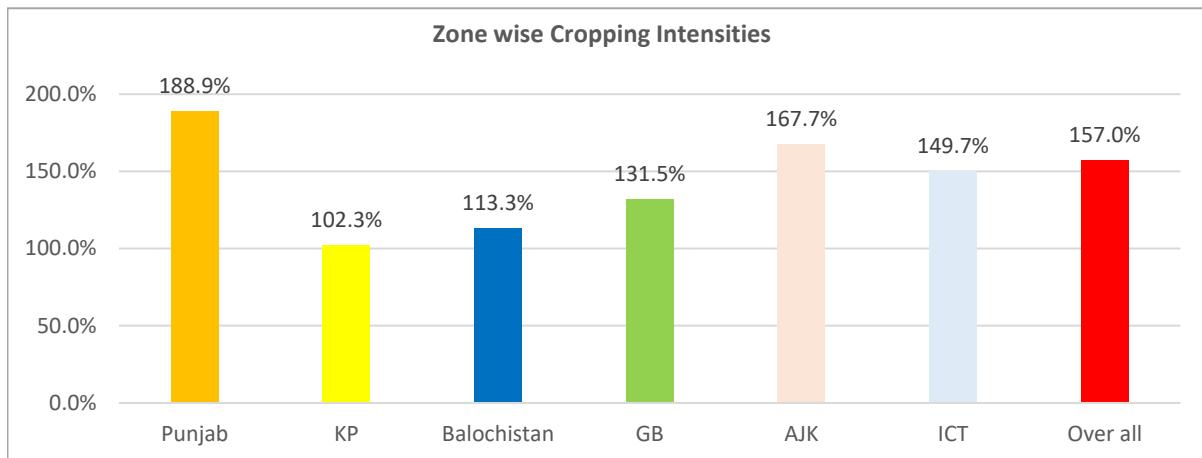


Figure 6: Zone / Unit Wise Cropping Intensities on Sample Farms

5.3.5. Cropping Intensities in Canal Command and Non-Canal Command Areas

Cropping intensities have also been calculated for canal command and non-canal command areas separately. For canal command areas it calculates as 179.7% and for non-canal command areas as 112.5%. Zone / Unit wise land use intensities have been shown in **Table 50** below. This comparison has also been given in **Figure 7**.

Table 50: Cropping Intensities in Canal Command and Non-Canal Command Areas

Zone / Unit	Canal Command Area			Non-Canal Command Area		
	Cultivated Area	Cropped Area	Cropping Intensity	Cultivated Area	Cropped Area	Cropping Intensity
Punjab	13390.40	25297.39	188.9%	0	0	0.0%
KP	838.70	903.12	107.7%	3279	3310	100.9%
Balochistan	1016.30	1195.50	117.6%	2916	3260	111.8%
GB	0.00	0.00	0.0%	1273	1674	131.5%
AJK	0.00	0.00	0.0%	280	470	167.7%
ICT	0.00	0.00	0.0%	18	27	149.7%
Overall	15245.40	27396.01	179.7%	7766.4	8739.4	112.5%

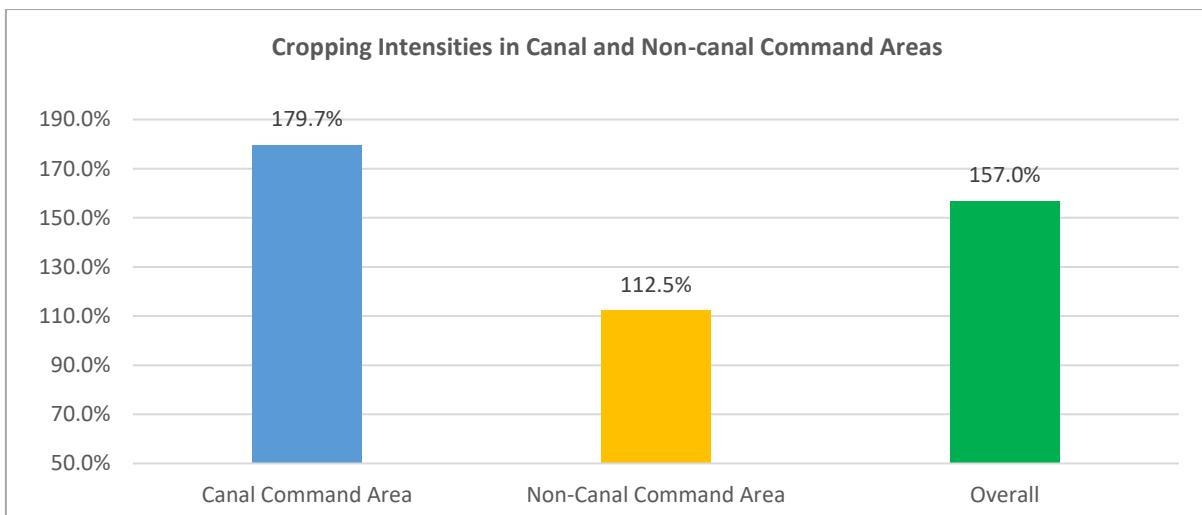


Figure 7: Canal and Non-Canal Command Area wise Cropping Intensities on Sample Farms

5.3.6. Crop Yields on Sample Farms

Increased water availabilities either add to the cultivated area which is reflected in increased land use intensities, or it increases cropping intensities (which have already been shown in sections 5.3.2 through 5.3.5 above) reflecting crop area under various crops or it increases the productivity of land often indicated by increases in crop yields or the crop production per unit of land; say maunds per acre or quintal per hectare. In this section, zone wise crop yields noted on the sample farms have been analyzed and shown in **Table 51** and overall yields have been depicted in **Figures 8 and 9** below.

Table 51: Crop Yields on Sample Farms - Zone Wise

Crops	Maunds (40 Kgs) per Acre						
	Overall	Punjab	KP	Balochistan	GB	AJK	ICT
Wheat	30.5	32	25	27	27	28	29
Rice	28.2	28	24	32	0	27	0
Cotton	26.2	26	27	26	0	0	0
Maize	48.0	82	21	37	35	32	33
Sugarcane	728.8	746	607	649	0	0	0
Oil Seeds	17.1	24	17	9	14	13	0
Pulses	5.4	5	6	7	6	6	0
Tobacco	58.7	71	29	63	0	0	0
Okra	111.1	90	84	0	0	0	120
Onions	166.6	167	165	0	0	0	0
Potato	193.3	251	143	0	160	0	0
Tomato	99.3	0	72	118	0	0	101
Other Vegetables	75.4	63	39	133	43	0	54
Apple	93.0	0	0	93	0	0	0
Peach	100.2	0	89	110	0	0	0
Other Fruits	96.1	121	60	107	72	0	0
Rabi Fodder	383.5	394	381	364	340	370	0
Kharif Fodder	357.2	358	317	0	0	441	0

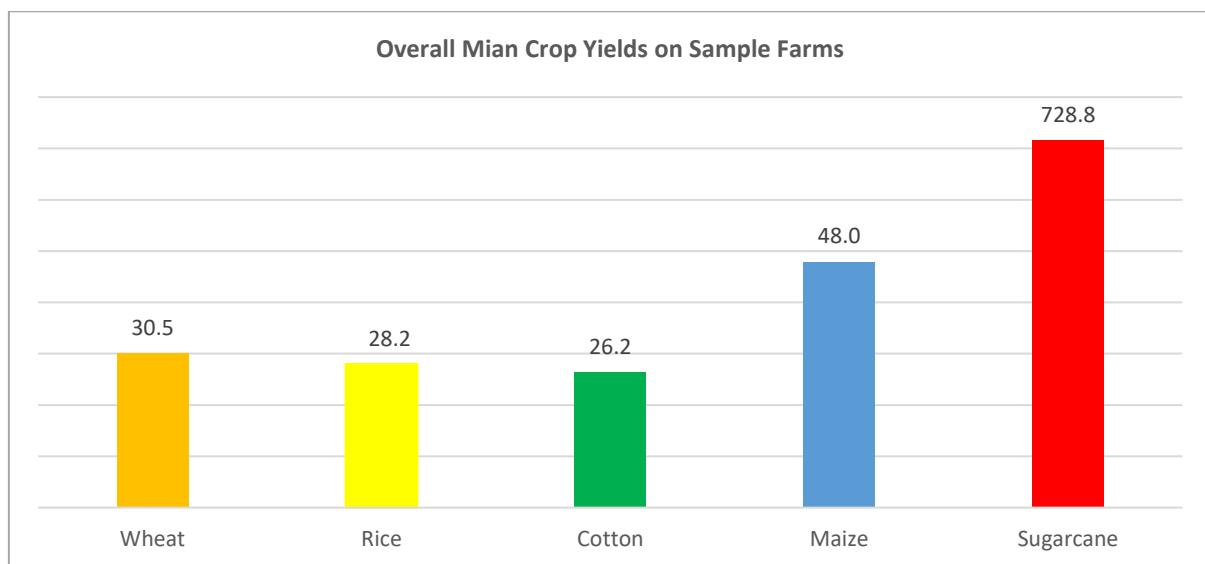


Figure 8: Overall Main Crop Yields (in maunds per acre) on Sample Farms

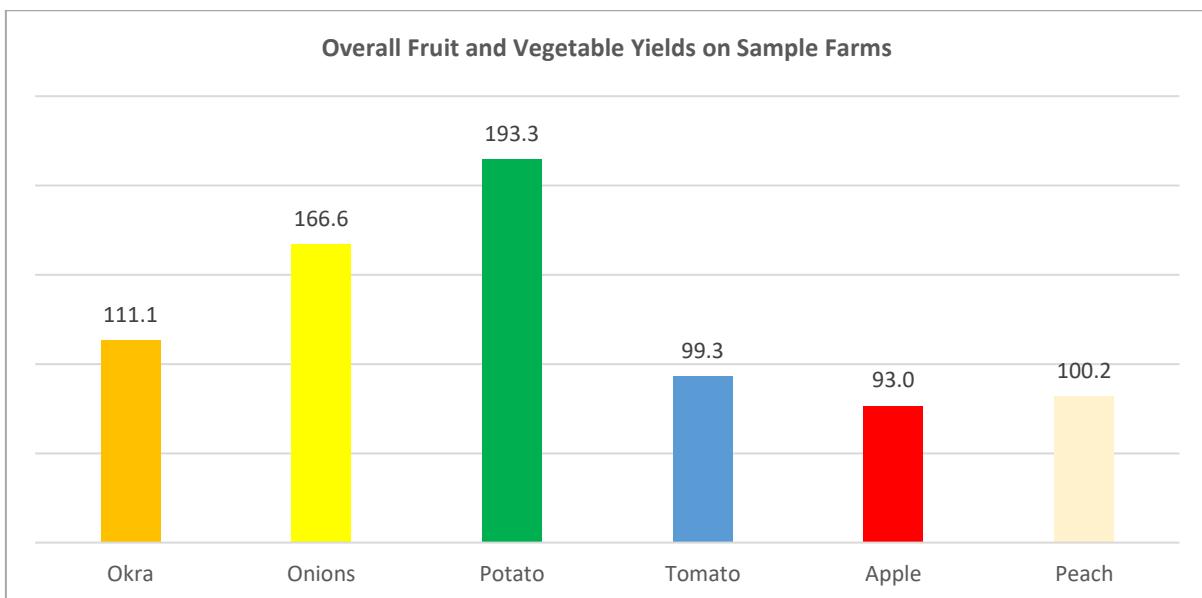


Figure 9: Overall Fruit and Vegetable Yields (in maunds per acre) on Sample Farms

5.3.7. Crop Area on Sample Farms

In this section, zone wise / unit wise cropped area has been estimated. Total crop area on sample farms is estimated as 36,135 acres, out of which 25,297 acres (70.0%) is Punjab, 4,213 acres (11.7%) in KP, 4,455 acres (12.3%) in Balochistan, 1,674 acres (4.6%) in GB, 470 acres (1.3%) in AJK and 27 acres (0.1%) in ICT. Zone wise and Crop wise details are given in **Table 52** and depicted in **Figures 10 and 11**.

Table 52: Crop Area on Sample Farms – Zone wise

Crop	Overall	Punjab	KP	Balochistan	GB	AJK	ICT
	Area in Acres						
Wheat	14,760	10,777	2,132	1,083	569	192	8
Rice	5,521	4,554	51	909	-	8	-
Cotton	5,098	4,807	16	276	-	-	-
Maize	2,052	784	662	71	286	241	8
Sugarcane	1,447	1,265	169	13	-	-	-
Oil Seeds	572	253	42	187	77	13	-
Pulses	1,598	1,138	350	80	23	7	-
Tobacco	166	94	42	30	-	-	-
Okra	12	3	1	-	-	-	9
Onions	156	126	29	-	-	-	-
Potato	889	354	152	-	383	-	-
Tomato	249	-	101	147	-	-	1
Other Vegetables	258	106	34	71	46	-	1
Apple	543	-	-	543	-	-	-
Peach	360	-	169	192	-	-	-
Other Fruits	1,103	25	101	759	218	-	-
Rabi Fodder	840	531	139	94	72	5	-
Kharif Fodder	512	481	25	-	-	6	-
Overall	36,135	25,297	4,213	4,455	1,674	470	27

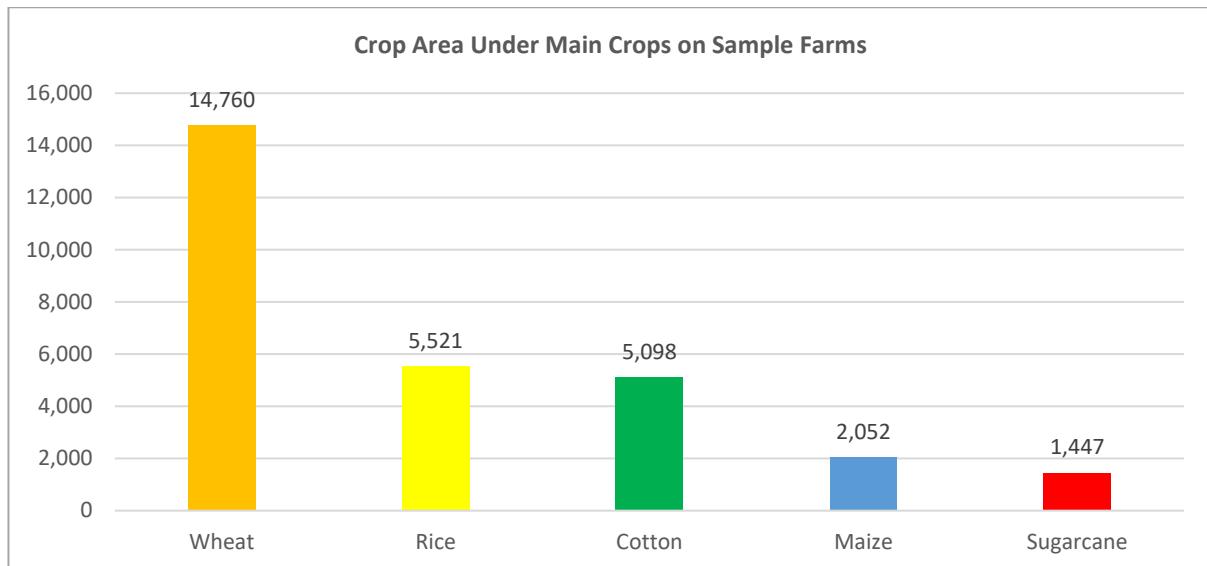


Figure 10: Crop Area Under Major Crops on Sample Farms

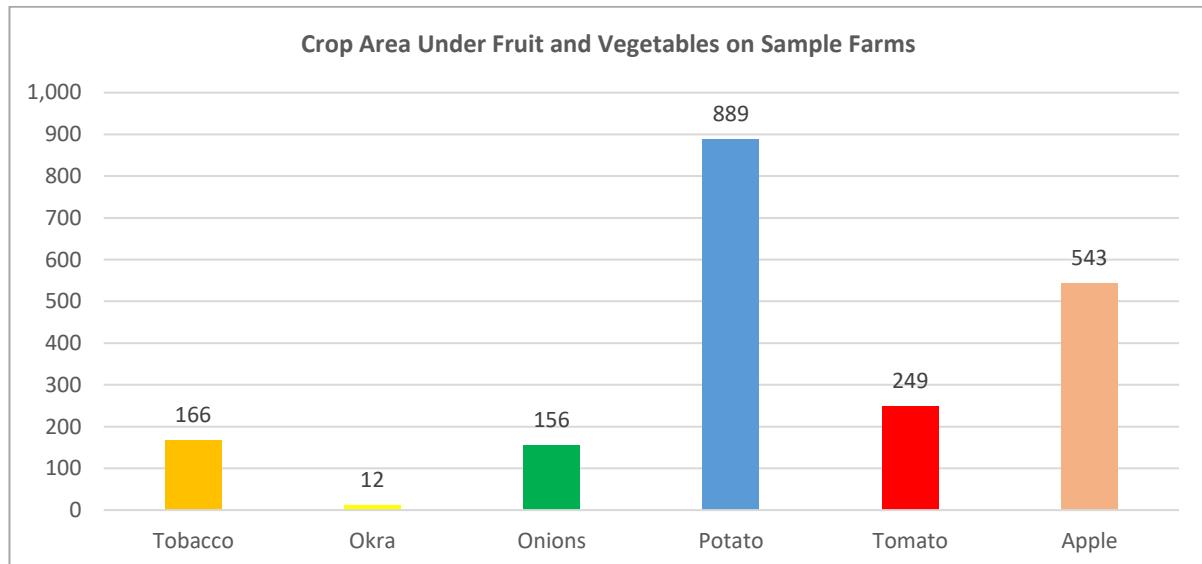


Figure 11: Crop Area (acres) under Fruit and Vegetables on Sample Farms

5.3.8. Cropping Pattern on Sample Farms

The cropping pattern refers to the proportion of land under different crops. It is expressed as per cent share of different crops in total crop area under all crops. Thus, cropping patterns have also been calculated from the data collected through baseline surveys, so that changes in proportions of area under various crops may also be estimated as a result of various interventions. Zone / unit wise cropping patterns on sample farms are given in **Table 53**. On an overall basis 40.8% area is under wheat, 15.3% under rice, 14.1% under cotton, 5.7% under maize, 4.0% under sugarcane, 6.5% under other minor crops and the rest 13.6% under other crops. Zone-wise detail may be seen in **Table 53**.

Table 53: Cropping Pattern (Crops Share) on Sample Farms - Zone wise

Crop	Overall	Punjab	KP	Balochistan	GB	AJK	ICT
	Crop wise Percent share Total Area						
Wheat	40.8%	42.6%	50.6%	24.3%	34.0%	40.8%	31.5%
Rice	15.3%	18.0%	1.2%	20.4%	0.0%	1.7%	0.0%
Cotton	14.1%	19.0%	0.4%	6.2%	0.0%	0.0%	0.0%
Maize	5.7%	3.1%	15.7%	1.6%	17.1%	51.2%	30.3%
Sugarcane	4.0%	5.0%	4.0%	0.3%	0.0%	0.0%	0.0%
Oil Seeds	1.6%	1.0%	1.0%	4.2%	4.6%	2.7%	0.0%
Pulses	4.4%	4.5%	8.3%	1.8%	1.4%	1.4%	0.0%
Tobacco	0.5%	0.4%	1.0%	0.7%	0.0%	0.0%	0.0%
Okra	0.03%	0.01%	0.02%	0.0%	0.0%	0.0%	32.7%
Onions	0.4%	0.5%	0.7%	0.0%	0.0%	0.0%	0.0%
Potato	2.5%	1.4%	3.6%	0.0%	22.9%	0.0%	0.0%
Tomato	0.7%	0.0%	2.4%	3.3%	0.0%	0.0%	2.9%
Other Vegetables	0.7%	0.4%	0.8%	1.6%	2.8%	0.0%	2.6%
Apple	1.5%	0.0%	0.0%	12.2%	0.0%	0.0%	0.0%
Peach	1.0%	0.0%	4.0%	4.3%	0.0%	0.0%	0.0%
Other Fruits	3.1%	0.1%	2.4%	17.0%	13.0%	0.0%	0.0%
Rabi Fodder	2.3%	2.1%	3.3%	2.1%	4.3%	1.0%	0.0%
Kharif Fodder	1.4%	1.9%	0.6%	0.0%	0.0%	1.2%	0.0%
Overall	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

5.3.9. Crop Production of Sample Farms

Cumulative effect of Watercourses Improvement is reflected in total production of various crops as Production is the product of area and per acre crop yields. Thus, in this baseline report, production of various crops has also been calculated on sample farms so that at a later stage it may be compared with that in impact surveys in order estimate Watercourses improvement impact. Thus, the zone wise production of various crops has been calculated and given in **Table 54** below. Crop-wise production has also been shown graphically in **Figures 12 and 13**.

Table 54: Crop Production on Sample Farms in Baseline - Zone wise

Crops	Overall	Punjab	KP	Balochistan	GB	AJK	ICT
	Production in Maunds (40 Kgs)						
Wheat	449,863	347,009	52,225	29,608	15,365	5,414	241
Rice	155,629	125,564	1,226	28,628	-	212	-
Cotton	133,435	125,930	416	7,089	-	-	-
Maize	98,416	64,031	13,898	2,637	10,006	7,576	267
Sugarcane	1,054,372	943,476	102,228	8,667	-	-	-
Oil Seeds	9,777	6,071	695	1,768	1,078	165	-
Pulses	8,671	5,692	2,238	561	141	39	-
Tobacco	9,745	6,599	1,237	1,909	-	-	-
Okra	1,350	226	71	-	-	-	1,053
Onions	25,989	21,123	4,866	-	-	-	-
Potato	171,740	88,806	21,687	-	61,247	-	-
Tomato	24,722	-	7,296	17,348	-	-	78
Other Vegetables	19,449	6,666	1,303	9,462	1,979	-	38
Apple	50,464	-	-	50,464	-	-	-
Peach	36,069	-	14,997	21,072	-	-	-
Other Fruits	106,020	3,060	6,066	81,227	15,666	-	-
Rabi Fodder	322,344	209,133	52,997	34,007	24,471	1,736	-
Kharif Fodder	182,707	172,215	8,006	-	-	2,486	-

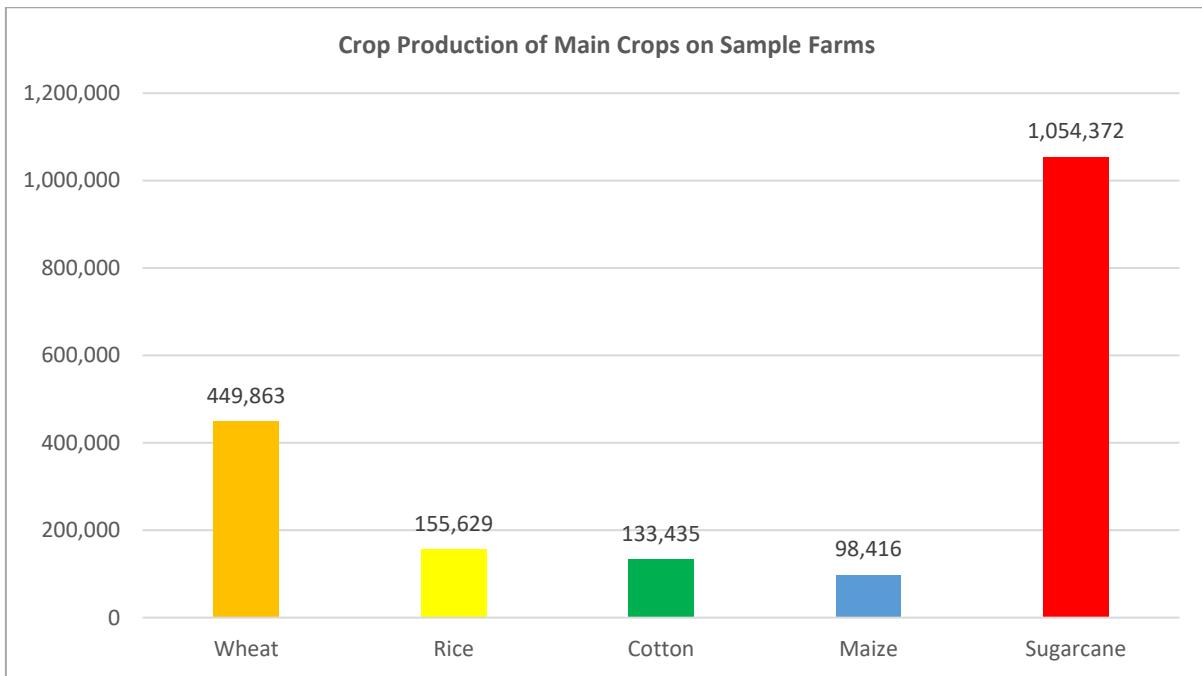


Figure 12: Crop Production (maunds) of Main Crops on Sample Farms

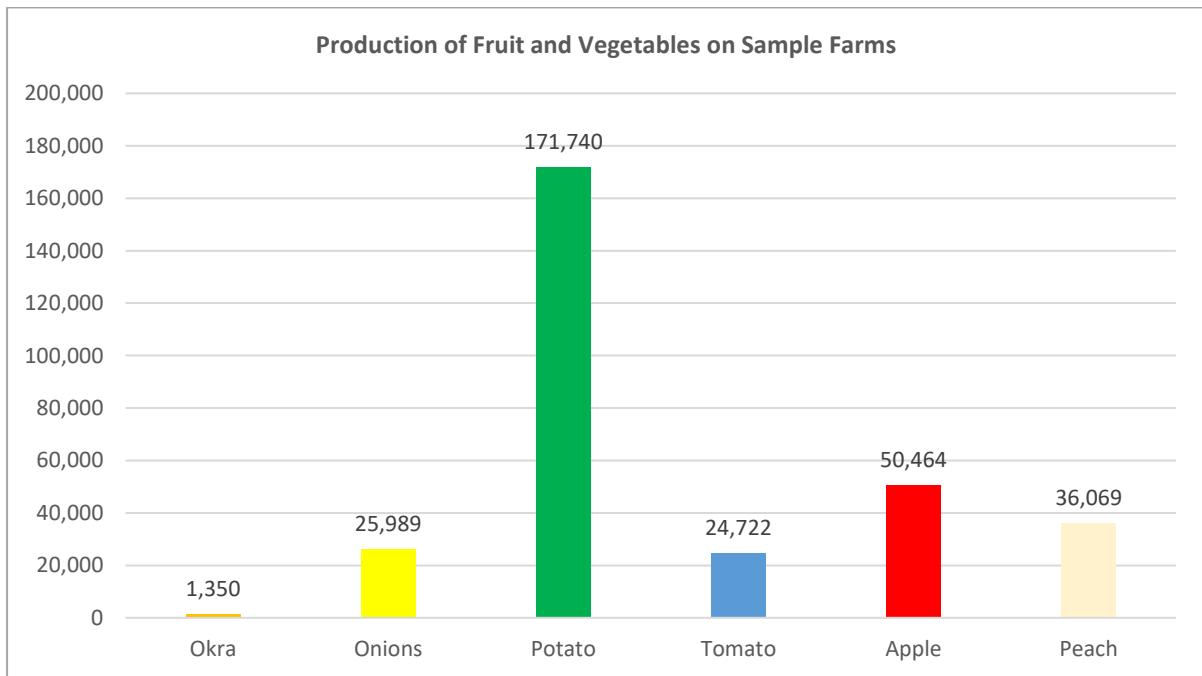


Figure 13: Production of Fruit and Vegetables (maunds) Sample Farms

5.3.10. Agriculture Employment on Sample Farms

During the baseline surveys information on agriculture employment has also been collected and analyzed to get its estimates. Total labor man days on Sample farms has been estimated as at the farms as 36.3 Man days per acre and as 397 Man days per farm. Crop-wise detail is given in **Table 55**.

Table 55: Agriculture Employment on Sample Farms

Crops	Overall	Punjab	KP	Balochistan	GB	AJK	ICT
	Agricultural Employment in Man Days						
Wheat	381,990	278,901	55,167	28,017	14,728	4,960	218
Rice	174,460	143,892	1,597	28,719	-	252	-
Cotton	300,953	283,728	920	16,305	-	-	-
Maize	92,978	35,537	29,990	3,230	12,955	10,899	368
Sugarcane	82,956	72,528	9,662	766	-	-	-
Oil Seeds	6,011	2,659	443	1,967	809	133	-
Pulses	13,745	9,790	3,007	690	202	57	-
Tobacco	7,579	4,273	1,923	1,383	-	-	-
Okra	663	138	46	-	-	-	479
Onions	10,098	-	8,189	1,909	-	-	-
Potato	58,062	23,141	9,909	-	25,012	-	-
Tomato	11,240	-	4,566	6,639	-	-	35
Other Vegetables	10,486	4,319	1,370	2,898	1,871	-	28
Apple	35,395	-	-	35,395	-	-	-
Peach	25,421	-	11,897	13,524	-	-	-
Other Fruits	66,187	1,518	6,066	45,548	13,055	-	-
Rabi Fodder	24,878	15,725	4,115	2,769	2,130	139	-
Kharif Fodder	10,052	9,445	497	-	-	111	-
Total	1,313,156	893,781	143,084	187,849	70,762	16,551	1,129
Average per acre	36.3	35.3	34.0	42.2	42.3	35.2	42.1
Average per farm	397	596	162	368	335	83	161

5.3.11. Farm Household Income at Sample Farms

Gross income per acre on the sample farms varies from PKR 46,275 in case of pulses to PKR 511,500 in case of tobacco. And net income varies from PKR 25,018 in case of pulses to PKR 294,103 in case of tobacco. The details of other crops of gross and net incomes may be seen in **Table 56 below**.

Table 56: Farm Gross and Net Income on Sample Farms

Crops	Gross Income	Cost of Production	Net Income
	Rupees per Acre		
Wheat	69,428	31,520	37,908
Rice	86,432	46,860	39,572
Cotton	76,440	43,275	33,165
Maize	91,885	52,645	39,240
Sugarcane	146,188	66,124	80,063
Oil Seeds	69,041	24,782	44,259
Pulses	46,275	21,256	25,018
Tobacco	511,500	217,397	294,103
Okra	183,740	126,243	57,497
Onions	135,876	79,711	56,165
Potato	289,787	121,871	167,916
Tomato	143,714	68,862	74,852
Other Vegetables	129,438	37,927	91,511
Apple	175,375	67,930	107,445
Peach	236,500	71,579	164,921
Other Fruits	241,500	123,925	117,575
Rabi Fodder	109,506	20,381	89,124
Kharif Fodder	83,018	11,448	71,570
Average	94,682	44,389	50,293

5.3.12. Area benefited and Gross and Net Income under Completed Schemes

In the previous sub sections of this Chapter, we have been evaluating the baseline area and per acre gross and net incomes of the 3,310 sample farms located on 744 sample watercourses. In this sub section, sample results have been super imposed on all the farms located on all 14,443 improved watercourses. Total farms area cultivated area and crop area of all farms located on these 14,443 improved watercourses has been estimated around 2,133,278 acres, 1,924,067 acres and 3,269,106 acres. Gross and net incomes of all the farms on 14,443 improved watercourses has been estimated at 309.525 and 164.413 billion rupees respectively. Zone wise / unit wise detail is given in **Table 57**. These baseline estimates would help us in determining the project benefits and carrying out economic analysis after the impact surveys are completed.

Table 57: Area Benefited and Gross and net Income of the farms under completed Watercourses

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

5.4. Spot Checking of Watercourses

During various baseline surveys, the ME&IE teams spot checked all the 744 watercourses sampled for their construction quality and other engineering and environmental parameters. Results of spot checking are given below.

5.4.1. Profile of Spot-Checked Watercourses

Out of the 744 watercourses, 30 were rectangular or brick-lined, 347 were PCP-lined, and 367 were pipelined. The pipelining included such as PVC, PCC, HDPE, and mixed lining. Lining type wise and Zone/Unit wise sample distribution of the spot-checked watercourses is shown in **Table 58** below.

Table 58: Spot Checking of Watercourses Distributed by Type of Lining

Zone/Unit	Total Water-courses Spot Checked	Type of Lining					
		Rectangular/ Bricks Lined	PCP Lined	Pipelined			
				PVC	PCC	HDPE	Mixed
Punjab	250	0	250	0	0	0	0
KP	205	1	81	45	72	4	2
Balochistan	203	29	0	133	0	41	0
GB	40	0	0	0	1	17	22
AJK	39	0	16	0	1	15	7
ICT	7	0	0	7	0	0	0
Overall	744	30	347	185	74	77	31
							367

5.4.2. Results of Spot-Checking Watercourses

Spot checking was conducted systematically to verify the physical progress and quality compliance of infrastructure improvement activities, including watercourses.

5.4.2.1. Spot Checking - Trees on Watercourses

On all 744 spots checked watercourses, 5,388 trees were cut down during the process of their improvement. As per rule, at least three times (16,164) trees were required to be planted in place of 5,388 cut down trees, however, during the spot check it was observed that only 9,258 saplings (57% of the required ones) were planted out of which, 2,844 (31%) were survived after one year of their plantation. Zone wise / Unit wise detail of cut down trees, saplings planted, trees survived are given in **Table 59**.

Table 59: Trees cut down, Planted, and Survived at Watercourses

Zone/Unit	Cut Down	Saplings Planted	Survived Trees	Protection Arrangement Made (%)
Punjab	5264	8738	2708	77%
KP	124	310	86	66%
Balochistan	0	180	40	82%
GB	0	0	0	0
AJK	0	0	0	0%
ICT	0	30	10	80%
Overall	5388	9258	2844	77%

5.4.2.2. Spot Checking - Brick Lined Watercourses

While spot checking engineering parameters on Rectangular / Brick Lined Watercourses, overall, their compliance was satisfactory. However, lining length as per design was found on 81% watercourses, however, full length improved water courses were extremely low i.e., only 23%. Details are given in **Table 60**.

Table-60: Results of Rectangular / Brick Lined Watercourses' Spot Checking

Sr. #	Spot check Items	Yes	No
1	Removal of vegetation from watercourse properly?	82%	18%
2	Aligning according to design?	89%	11%
3	Proper compaction of soil?	85%	15%
4	Actual discharge (as per Irrigation Department) (LPS)?	94%	6%
5	Is the water supply adequate?	83%	17%
6	Is there any additional water supply (via Tube Well / lift machine) at watercourse?	0%	100%
7	Lining length is as per design?	81%	19%
8	Is the thickness of walls as per design?	95%	5%
9	Depth of watercourse is as per design?	95%	5%
10	Width of watercourse is as per design?	79%	21%
11	Is the thickness of plaster at wall adequate?	83%	17%
12	Is the thickness of bed adequate?	89%	11%
13	Is the thickness of the mortar at wall adequate?	92%	8%
14	Is a free board height as per design?	87%	13%
15	Is back collar mortar adequate?	63%	37%
16	Quality of Plaster?	Percent	
16.1	Good	19%	
16.2	Satisfactory	69%	
16.3	Not Satisfactory	12%	
17	Back filling of the lining portion?	Percent	
17.1	Good	17%	
17.2	Satisfactory	54%	
17.3	Not Satisfactory	29%	
18	Type of mogha/outlet	Percent	
18.1	Open	37%	
18.2	Closed	29%	
18.3	Closed pipe	34%	
18.4	Closed pump	0%	
19	Rehabilitation of katcha/earthen portion of watercourse	Full length improved	Only lined Portion
		23%	77%

5.4.2.3. Spot Checking of PCP Lining Watercourses

On Parabolic (PCPL) Watercourses, compliance of most of the parameters was found satisfactory. However, lining length as per design was found on 77% watercourses and full-length improved water courses were extremely low i.e., only 19%. Details are given in **Table 61**.

Table 61: Results of Parabolic (PCPL) Watercourses" Spot Checking

Sr. #	Spot check Items	Yes	No
1	Removal of vegetation from watercourse properly?	52%	48%
2	Actual discharge (as per Irrigation Department)?	98%	2%
3	Is the water supply adequate?	86%	14%
4	Is there any additional water supply (via Tube Well / lift machine) at watercourse?	78%	22%
5	Lining length is as per design?	77%	23%
6	Filling of joints of the parabolic segments?	71%	29%
		As per Design	Not as per Design
7	Slope of the parabolic segments?	89%	11%
		Good	Poor
8	Quality of pre-cast parabolic segments?	84%	16%
9	Back filling of pre-cast parabolic slabs?	66%	34%
10	Type of mogha/outlet	Percent	
10.1	Open Flume	23%	
10.2	AOSM	36%	
10.3	Pipe Cum AOSM	28%	
10.4	Scratchy Type	6%	
10.5	Closed Pump	7%	
		Full length improved	Only lined Portion
19	Rehabilitation of katcha /earthen portion of watercourse	19%	81%

5.4.2.4. Spot Checking of Pipelined Watercourses

The quality of pipe was found good in 58% of cases, satisfactory in 39% cases and poor in 3% cases only. Pipeline length was found to be as per design in 95% cases, bends and flanges were as per design in 72% cases, tees were as per design in 67% cases and sockets were 59%. Information on other parameters is given in **Table 62**.

Table-62: Results of Pipelined Watercourses' Spot Checking

Sr. #	Spot Check Items	Yes	No
1	Excavation of trenches for water supply pipelines are as per specifications?	93%	7%
2	Does water supply adequate?	99%	1%
3	Is pipeline length as per design?	95%	5%
4	Bends as per design?	72%	28%
5	Are sockets as per design?	59%	41%
6	Are air Valve as per design?	39%	61%
7	Reducers are as per design?	41%	59%
8	Are the flanges as per design?	72%	28%
9	Tee are as per design?	67%	33%
10	Are Non-Return Valves as per design?	27%	73%
11	Cost Iron Sluice Valve are as per design?	51%	49%
12	Type of mogha/outlet?	Percent	
12.1	Open	0%	
12.2	Closed	4%	
12.3	Closed pipe	71%	
12.4	Closed pump	25%	
13	Quality of Pipeline?	Percent	
13.1	Good	58%	
13.2	Satisfactory	39%	
13.3	Not Satisfactory	3%	

Recommendations:

Spot checking revealed significant opportunities for improvement, especially in tree plantation and full-length infrastructure improvements. Enhanced monitoring, stricter enforcement of construction standards, and improved coordination between project teams and farmers are recommended to address these gaps.

6. BASELINE OF WATER STORAGE TANKS: COMPONENT C3

Baseline assessment for WSTs aimed to measure current irrigation infrastructure status and associated agricultural productivity, which will later allow evaluating the impact of WST construction.

Key Findings - Concise baseline indicators summary.

- **Land Use Intensity:** Average 79.6%, highest in Punjab (91.7%), lowest in Balochistan (68.9%).
- **Cropping Intensity:** Average of 116.5%, highest in Punjab (159.2%), lowest in KP (98.4%).
- **Crop Yields:** Wheat (29.3 maunds/acre), Rice (27 maunds/acre), Cotton (26.2 maunds/acre), Sugarcane (745.9 maunds/acre).
- **Farm Income:** Gross income averaged PKR 118,818 per acre, net income PKR 66,961 per acre.
- **Employment Generation:** Average of 37.85 man-days per crop acre.

The baseline results for WSTs demonstrate regional variations in agricultural productivity and economic outcomes. This highlights a clear need for interventions focused on improving land use and cropping intensities, especially in lower-performing regions like KP and Balochistan.

By the end of June 2024, the total number of completed WSTs was 5,915 for which baseline sample @ 5% calculates /required as 296 (**Table 63**), however, actual sample size taken for baselines is 347 which is obviously above than the required one. Baseline sample WSTs profile and results of the 347 WSTs are described below in detail.

6.1. Profile of Sample WSTs/Farmers

6.1.1. Sample Size

By the end of June 2024, a total of 5,915 WSTs were constructed. Under the revised methodology, the required sample size for these WSTs at 5% is calculated to be 296. However, the actual sample drawn in two phases is 347 WSTs, significantly exceeding the required sample size.

The zone / Unit wise distribution of this sample is shown in **Table 63**.

Table-63: Sample Size for Monitoring Evaluation WST

Zone/Unit	Constructed WSTs by End June 2024	% Sample Required	Sample Required	Actual Sample Drawn
Punjab	1121	5%	56	80
KP	1225	5%	61	79
Balochistan	2670	5%	134	148
GB	455	5%	23	15
AJK	444	5%	22	25
Overall	5,915	5%	296	347

6.1.2. Area Operated Under Sample WSTs

In agriculture Farm Size or Size of Holding means average farm area operated by the farmers (either owned or rented in by him). Thus, the Size of Holding is calculated as Area Owned plus Area Rented In minus Area Rented out. The total area operated under these 347 WSTs is 3,674 acres or 11 acre per WST. Zone / Unit wise total and average farm size or size of holding or operated area of our 347 WSTs' respondent farmers is shown in **Table 64** and depicted in **Figure 14**. It may be seen from **Table 64** that the average farm size among the sample farms is

11 acres in Punjab, 12 acres in KP, 9 acres in Balochistan, 13 acres in GB, 14 acres in AJK and 11 acres on an overall basis.

Table 64: Area Operated under Sample WSTs

Zone / Unit	No. of WST	Total Area Operated (Acres)	Average Area Operated (Acres)
Punjab	80	848.0	11
KP	79	949.3	12
Balochistan	148	1332.0	9
GB	15	195.0	13
AJK	25	350.0	14
Overall	347	3674.3	11

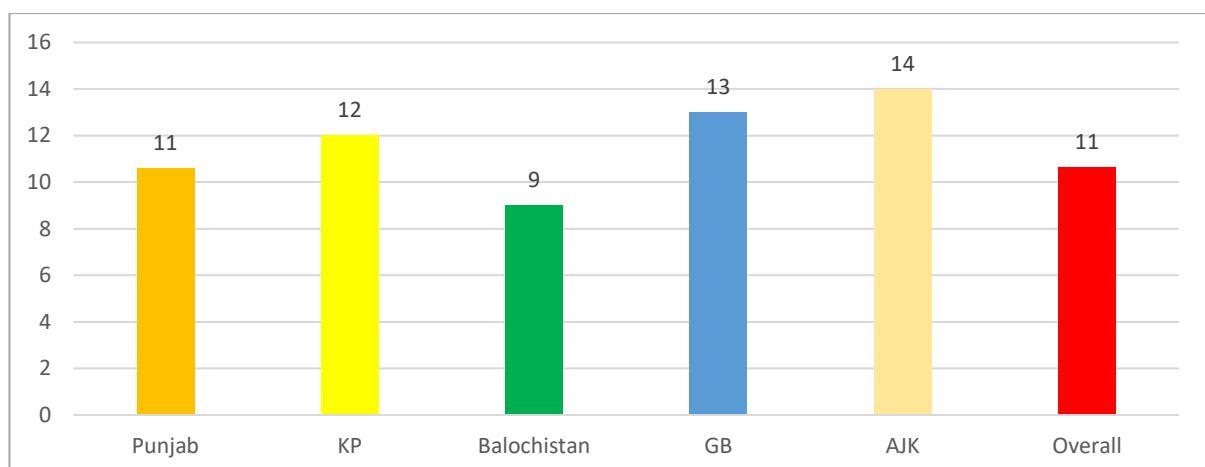


Figure 14: Average Size of Holding of Sample WSTs' Farms

6.1.3. Sources of Irrigation Water for WSTs

Like watercourses, WSTs have also many sources of water. These sources include Perennial canals, non-perennial canals, Tube wells, Tail water recovery ditches, Nullah, Streams, springs and Dug wells etc. However, unlike watercourses, WSTs have multiple sources of water i.e., one WST may have two or more than two water sources. Most common water source is tube well. Out of 347 sample WSTs, 250 draw water from tube wells, 24 from perennial canals, 16 from non-perennial canals and 57 from other sources. Source wise and zone /unit wise distribution is given in Table 65 below.

Table-65: Source of Irrigation Water of Water Storage Tanks (Multiple Sources)

Zone / Unit	Total Responses	Peren-nial Canal	Non-perennial canal	Tube well	Tail Water Recovery Ditch	Nullah	Streams	Spring	Dug well
Punjab	80	24	7	49	0	0	0	0	0
KP	79	0	0	54	1	6	4	6	8
Balochistan	148	0	9	136	0	0	3	0	0
GB	15	0	0	0	0	0	15	0	0
AJK	25	0	0	11	0	8	3	3	0
Overall	347	24	16	250	1	14	25	9	8

6.1.4. Topography of WSTs

During the survey, information on land topography of the WST areas was also collected. On an overall basis, 79% of WSTs were located on even surfaces, 18% on uneven surfaces and the rest 3% on slightly sloped surfaces. Information on zone / unit wise topography of the area where WSTs were located is given in **Table 66**.

Table-66: Land Topography of the Area Served by Sample Water Storage Tanks

Zone / Unit	Total Responses	Even	Un-Even	Slightly Sloped
Punjab	80	66 (83%)	14 (17%)	0 (0%)
KP	79	62 (79%)	13 (16%)	4 (5%)
Balochistan	148	112 (76%)	30 (20%)	6 (4%)
GB	15	13 (84%)	1 (9%)	1 (7%)
AJK	25	21 (84%)	3 (12%)	1 (4%)
Overall	347	274 (79%)	61 (18%)	12 (3%)

6.1.5. Feedback Information on WSTs

During the survey it was noted that the procedure for processing applications for the WSTs was 100% prompt, the process of survey & design was 100% fast tracked and the behavior of 85% OFWM staff was friendly and supportive in dealing with the WSTs cases. Ninety-two (92) percent of farmers reported that the maintenance of WSTs is easy. Details of feedback are given in **Table 67**.

Table-67: Feed Back on Water Storage Tanks Construction

Zone/Unit	Total Respondents	Processing Applications	Survey & Design Process	Behavior of OFWM Staff		Maintenance of WST	
		Prompt	Fast track	Friendly / Supportive	Professional & Interactive	Easy	Difficult
Punjab	80	100%	100%	65%	35%	82%	18%
KP	79	100%	100%	100%	0%	100%	0%
Balochistan	148	100%	100%	61%	39%	78%	22%
GB	15	100%	100%	100%	0%	100%	0%
AJK	25	100%	100%	100%	0%	100%	0%
Overall	347	100%	100%	85%	15%	92%	8%

6.1.6. Perception of Farmers on Cropping Intensity and Crop Yields

About 232 (67%) percent farmers have a perception that WSTs have positive impact on Cropping intensity to the extent of 23% and 226 (65%) farmers were of the view that WSTs increase crop yields to the extent of 27%. Zone / Unit wise farmers' perceptions are shown in **Table 68** below.

Table-68: Farmer's Perception on Increase in Cropping Intensity and Crop Yields

Zone/Unit	Total Respondents	On Cropping Intensity			On Crop Yield Per Acre		
		Yes	No	Average Increase	Yes	No	Average Increase
Punjab	80	76%	24%	25%	80%	20%	32%
KP	79	97%	3%	23%	83%	17%	28%
Balochistan	148	69%	31%	19%	66%	34%	23%
GB	15	100%	0%	30%	100%	0%	25%
AJK	25	0%	100%	20%	0%	100%	0%
Overall	347	67% (232)	33% (115)	23%	65% (226)	35% (121)	27%

6.1.7. Perception of Farmers in Cultivated Area and No of Irrigations

When the farmers were asked about the impact of Water Storage Tanks on the increase in cultivated areas and number of irrigations, 163 (47%) of them responded that WSTs increase the cultivated area while 330 (95%) were of the view that number of irrigations also increases. Zone Unit wise responses of the farmers are summarized in **Table 69**.

Table-69: Farmer's Perception on Increase in Cultivated Area and No of Irrigations

Zone/Unit	Total Respondents	On Cultivated Area		On No of Irrigation	
		Yes	No	Yes	No
Punjab	80	79%	21%	100%	0%
KP	79	84%	16%	100%	0%
Balochistan	148	73%	27%	76%	24%
GB	15	0%	100%	100%	0%
AJK	25	0%	100%	100%	0%
Overall	347	47% (163)	53% (184)	95% (330)	5% (17)

6.1.8. Average Sample Respondents per WST

On the above 347 WSTs there were a total of 347 growers or one grower per WST. Zone / Unit wise detail of 347 respondent growers is given in **Table 70** below.

Table-70: Baseline and Impact Sample Respondents

Zone/Unit	Total WSTs	Total Respondents	Average Respondents /WST
Punjab	80	80	1
KP	79	79	1
Balochistan	148	148	1
GB	15	15	1
AJK	25	25	1
Total	347	347	1

6.1.9. Distribution Sample WST Farms according to Farm Size and Tenancy

During the selection, due consideration was given to the farm sizes and tenure of the farmers. Distribution of respondent growers according to size of holdings is given in **Table 71** and that of tenure in **Table 72**.

Table-71: Distribution of Farmers According to Size of Holding

Zone/Unit	Total Respondents	Distribution of Sample Farmers According to Size of Holding		
		Less than 12.5 acres	12.5 to 25 acres	More than 25 acres
Punjab	80	57 (69%)	17 (23%)	6 (8%)
KP	79	60 (76%)	15 (19%)	4 (5%)
Balochistan	148	78 (53%)	12 (8%)	58 (39%)
GB	15	12 (80%)	2 (13%)	1 (7%)
AJK	25	21 (84%)	3 (12%)	1 (4%)
Overall	347	228 (66%)	49 (14%)	70 (20%)

Table-72: Distribution of Farmers According to Tenure

Zone/Unit	Total Respondents	Distribution of Sample Farmers According to Tenure		
		Owners	Owner / Tenants	Tenants
Punjab	80	75 (94%)	5 (6%)	0 (0%)
KP	79	64 (81%)	6 (8%)	9 (11%)
Balochistan	148	135 (91%)	6 (4%)	7 (5%)
GB	15	14 (93%)	0 (0%)	1 (7%)
AJK	25	24 (96%)	0 (0%)	1 (4%)
Overall	347	312 (90%)	17 (5%)	18 (5%)

Since the M&E teams have to visit each of the selected farmers two times (i.e., at the time of baseline and end line impact survey), the availability of the respondent farmers in the village was also considered while taking the household as sample.

6.2. Analysis of Agricultural Indicators on Sample Farmers

6.2.1. Zone Wise Farm Area, Cultivated Area and Cropped Area

Farm Area is defined as area owned plus area rented in minus area rented out. All the farm area of a farmer is not necessarily cultivated by him. A part of the farmland or farm area is not often available for cultivation. This land may include land for human residences, land for rearing the livestock, land for water ponds meant for watering the farm livestock, land used for watercourses and paths and some other land not available for cultivation or non-cultivable lands. Thus, cultivated areas are always less than or equal to the Farm area.

Moreover, it is quite possible that during the year, all the cultivated areas might not be planted and cropped and some of it is left fallow (unplanted) due to shortage of water or non-availability of some other critical factors. On the other hand, it is also possible that the farmer might be getting two or even three crops from the same tract of cultivated land during the year if sufficient water is available to him to grow the additional crops. Thus, by definition the cropping area may be less than, equal to or greater than the cultivated area.

During the Baseline surveys, information on farm areas, cultivated area and cropped area has been collected from the sample respondent farmers and their Zone wise detail is given in **Table 73 below**.

Table-73: Zone wise Total Farm Area, Cultivated Area and Cropped Area of Sample Farms

Zone/Unit	Farm Area	Cultivated Area		Cropped Area
		Acres		
Punjab	848.0	777.2		1237.14
KP	949.3	818.3		805.16
Balochistan	1332.0	917.4		915.44
GB	195.0	145.5		170.43
AJK	350.0	266.2		277.86
Overall	3674	2924.6		3406.03

6.2.2. Land Utilization on Sample Farms

The indicator used for land utilization is land use intensity, which is defined as the ratio of cultivated area to farm area. This is often expressed as percentage of cultivated areas to the farm area. Since the cultivated area is always less than or equal to farm area, thus, by definition, land use intensity (the ratio between the cultivated area and farm area) is always less than or equal to unity or 100%. It can never exceed unity or 100%. While analyzing the land use pattern of the respondent sample farms, it has been found that land use intensity in baseline surveys has varied from 68.9% in Balochistan to 91.7% in the Punjab and averaged at 79.6% for all sample farms on the whole. Zone / Unit wise break up / detail is given in **Table 74** and depicted in **Figure 15**.

Table-74: Land Use Intensities on Sample Farms

Zone/Unit	Total Farm Area	Total Cultivated Area		Land Use Intensity
		Acres	%	
Punjab	848.0	777.2	91.7%	
KP	949.3	818.3	86.2%	
Balochistan	1332.0	917.4	68.9%	
GB	195.0	145.5	74.6%	
AJK	350.0	266.2	76.0%	
Grand Total	3674	2924.6	79.6%	

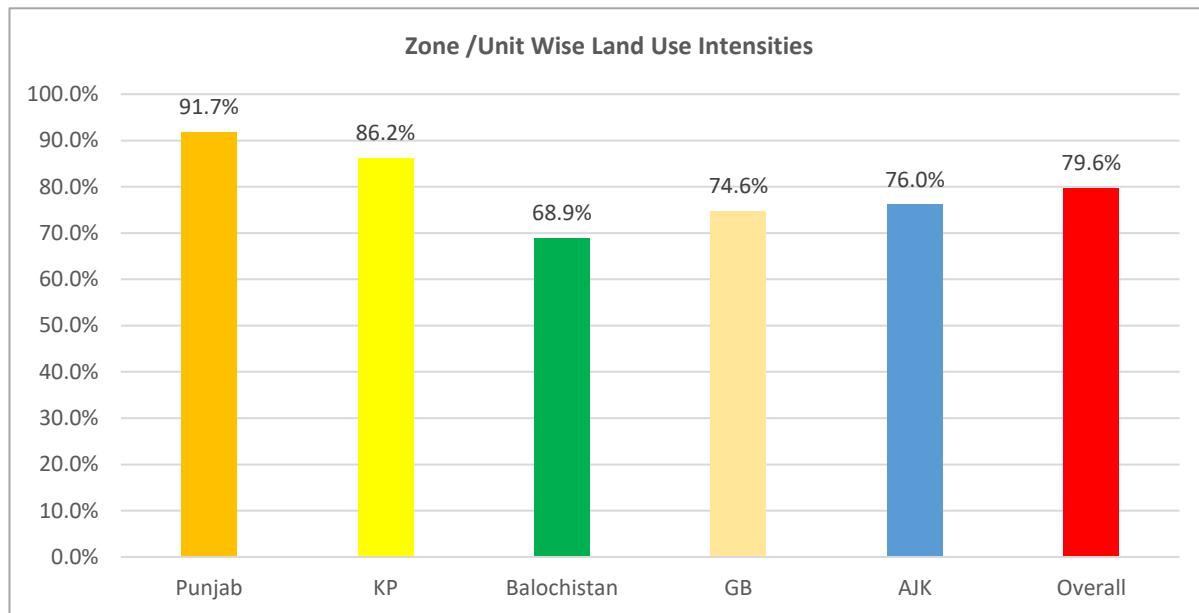


Figure 15: Zone / Unit Wise Land Use Intensities on Sample Farms

6.2.3. Cropping Intensities on Sample Farms

Another indicator used to measure agricultural efficiency is cropping intensity. Cropping Intensity is defined as the ratio of cropped area to cultivated area. This is often expressed as percentage of cropped area to the cultivated area. Since the cropped area can be less than or equal to or more than the cultivated area, thus, by definition, cropping intensity (the ratio between the cropped area and cultivated area) may be less than or equal to or more than unity or 100%. Normally its upper limit is 2 or 200% as two crops can be harvested in one year. However, with the advent of modern technology and evolution of short duration crop varieties, it has become possible now to have three crops in one year. Thus, now a day its upper limit may extend beyond 2 or 200%. However, it can never exceed 3 or 300%. While analyzing the cropping pattern of the respondent sample farms, it has been found that cropping intensity in baseline surveys has varied from 98.4% in KP to 159.2% in the Punjab and averaged 116.5% for project on the whole. Zone wise cropping intensities have been given in **Table 75** and shown in **Figure 16**.

Table-75: Impact of WC Improvement on Cropping Intensities on Sample Farms

Zone/Unit	Cultivated Area	Cropped area	Cropping Intensity
	Acres		%
Punjab	777.2	1237.14	159.2%
KP	818.3	805.16	98.4%
Balochistan	917.4	915.44	99.8%
GB	145.5	170.43	117.1%
AJK	266.2	277.86	104.4%
Overall	2924.6	3406.03	116.5%

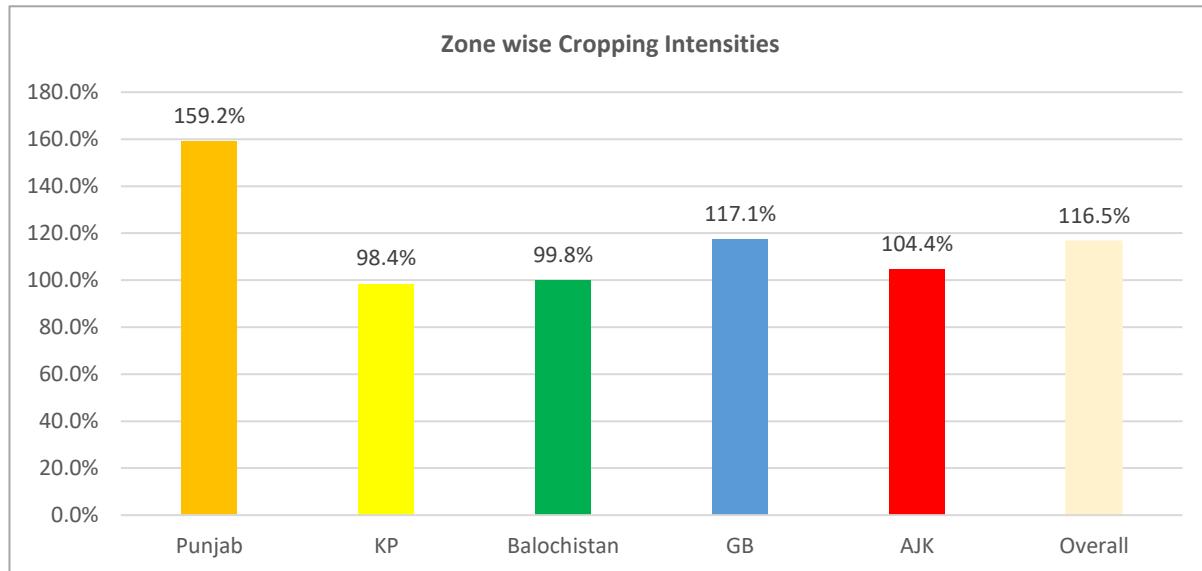


Figure 16: Zone / Unit Wise Cropping Intensities on Sample Farms

6.2.4. Crop Yields on Sample Farms

Increased water availabilities either add to the cultivated area which is reflected in increased land use intensities, or it increases cropping intensities (which have already been explained) reflecting in crop area under various crops or it increases the productivity of land often indicated by increases in crop yields or the crop production per unit of land; say maunds per acre or quintal per hectare. In this section, zone wise crop yields noted on the sample farms have been analyzed and shown in **Table 76** and overall yields have been depicted in **Figures 17 and 18** below.

Table-76: Crop Yields On Sample Farms - Zone Wise

Crops	Maunds (40 Kgs) per Acre					
	Overall	Punjab	KP	Balochistan	GB	AJK
Wheat	29	32	24	24	27	27
Rice	27	28	22	23	-	26
Cotton	26	26	-	-	-	-
Maize	53	82	20	-	35	30
Sugarcane	746	746	-	-	-	-
Pulses	6	-	6	-	-	-
Onions	158	-	158	-	-	-
Potato	160	-	-	-	160	-
Tomato	92	-	73	109	-	-
Other Vegetables	102	63	44	130	43	41
Apple	74	-	-	74	-	-
Other Fruits	69	-	58	107	72	80
Rabi Fodder	372	394	373	358	340	370
Kharif Fodder	358	358	315	-	-	475

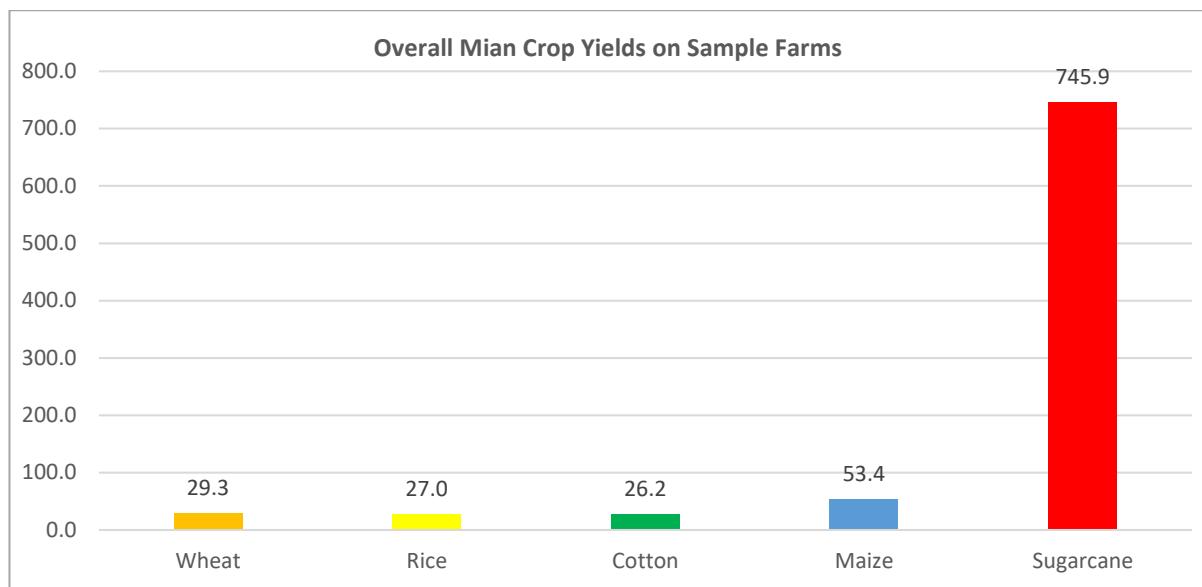


Figure 17: Overall Main Crop Yields (in maunds per acre) on Sample Farms

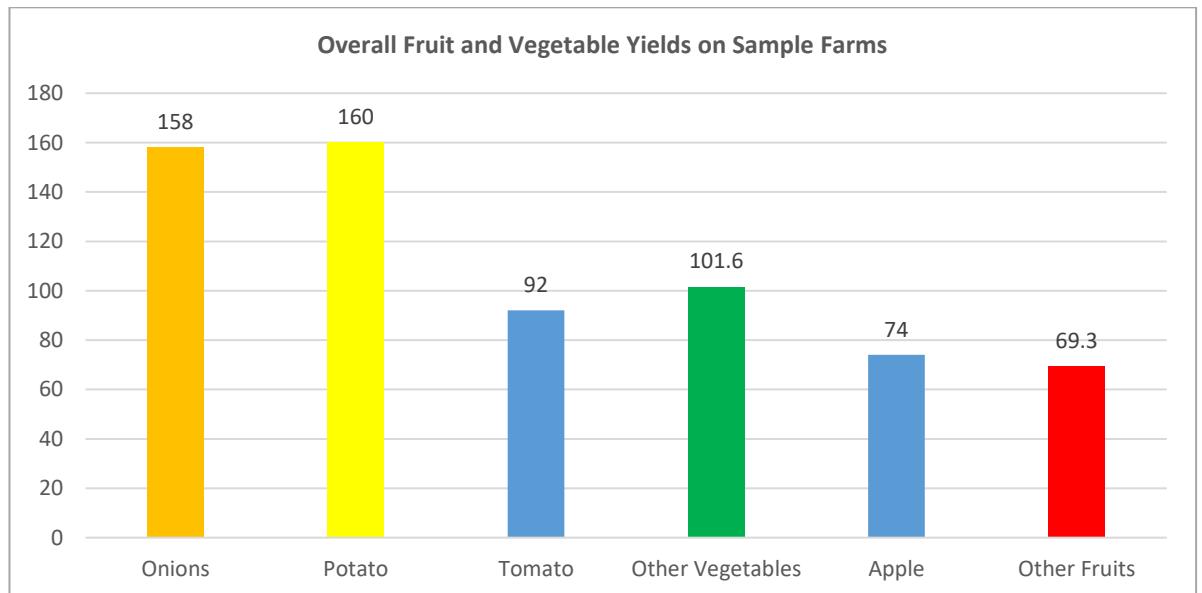


Figure 18: Overall Fruit and Vegetable Yields (in maunds per acre) on Sample Farms

6.2.5. Crop Area on Sample Farms

In this section, zone wise / unit wise cropped area has been estimated. Total crop area on sample farms is estimated as 3406.0 acres, out of which 1237.1 acres (36.3%) is in Punjab, 805.2 acres (23.6%) in KP, 915.4 acres (26.9%) in Balochistan, 170.4 acres (5.0%) in GB and 277.9 acres (8.2%) in AJK. Zone wise and Crop wise detail is given in **Table 77** and depicted in **Figures 19 and 20**.

Table-77: Crop Area on Sample Farms – Zone wise

Crop	Overall	Punjab	KP	Balochistan	GB	AJK
	Area in Acres					
Wheat	917.2	532.0	163.4	48.5	55.2	118.1
Rice	361.1	296.9	2.4	43.9	-	17.8
Cotton	38.6	38.6	-	-	-	-
Maize	307.8	148.5	65.2	-	31.9	62.2
Sugarcane	22.4	22.4	-	-	-	-
Pulses	67.6	-	67.6	-	-	-
Onions	162.6	-	162.6	-	-	-
Potato	36.0	-	-	-	36.0	-
Tomato	89.4	-	42.7	46.7	-	-
Other Vegetables	549.8	121.2	61.2	342.4	4.4	20.6
Apple	357.0	-	-	357.0	-	-
Other Fruits	309.0	-	188.4	45.8	38.2	36.7
Rabi Fodder	107.1	25.9	30.6	31.1	4.8	14.7
Kharif Fodder	80.4	51.7	20.9	-	-	7.8
Overall	3,406.0	1,237.1	805.2	915.4	170.4	277.9

Crop Area Under Main Crops on Sample Farms

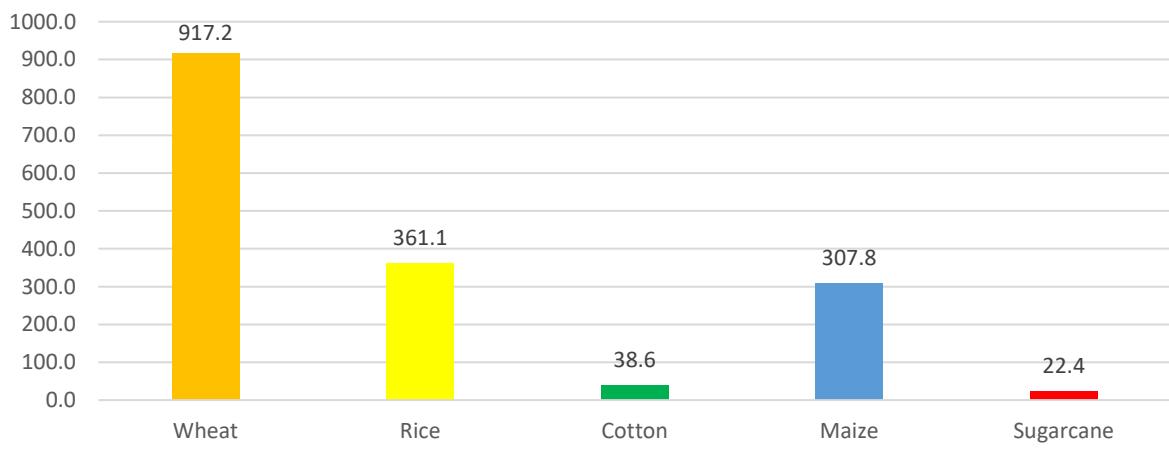


Figure 19: Crop Area Under Major Crops on Sample Farms

Crop Area Under Fruit and Vegetables on Sample Farms

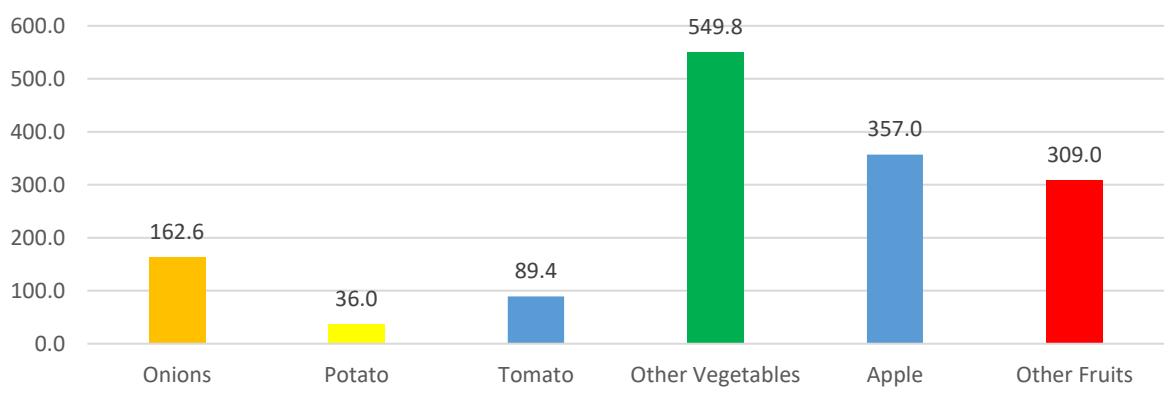


Figure 20: Crop Area (acres) under Fruit and Vegetables on Sample Farms

6.2.6. Cropping Pattern on Sample Farms

The cropping pattern refers to the proportion of land under different crops. It is expressed as per cent share of different crops in total crop area under all crops. Thus, cropping patterns have also been calculated from the data collected through baseline surveys, so that changes in proportions of area under various crops may also be estimated as a result of various interventions. Zone / unit wise cropping patterns on sample farms are given in **Table 78**. On an overall basis, 26.9% of the area is under wheat, 10.6% under rice, 1.1% under cotton, 9.0% under maize, 0.7% under sugarcane, 2.0% under pulses, 24.6% under vegetables, 19.6% under fruits and the rest 5.5% under fodder. Zone wise details may be seen in **Table 78**.

Table-78: Cropping Pattern (Crops Share) on Sample Farms - Zone wise

Crop	Overall	Punjab	KP	Balochistan	GB	AJK
	Crop wise Percent share Total Area					
Wheat	26.9%	43.0%	20.3%	5.3%	32.4%	42.5%
Rice	10.6%	24.0%	0.3%	4.8%	0.0%	6.4%
Cotton	1.1%	3.1%	0.0%	0.0%	0.0%	0.0%
Maize	9.0%	12.0%	8.1%	0.0%	18.7%	22.4%
Sugarcane	0.7%	1.8%	0.0%	0.0%	0.0%	0.0%
Pulses	2.0%	0.0%	8.4%	0.0%	0.0%	0.0%
Onions	4.8%	0.0%	20.2%	0.0%	0.0%	0.0%
Potato	1.1%	0.0%	0.0%	0.0%	21.1%	0.0%
Tomato	2.6%	0.0%	5.3%	5.1%	0.0%	0.0%
Other Vegetables	16.1%	9.8%	7.6%	37.4%	2.6%	7.4%
Apple	10.5%	0.0%	0.0%	39.0%	0.0%	0.0%
Other Fruits	9.1%	0.0%	23.4%	5.0%	22.4%	13.2%
Rabi Fodder	3.1%	2.1%	3.8%	3.4%	2.8%	5.3%
Kharif Fodder	2.4%	4.2%	2.6%	0.0%	0.0%	2.8%
Overall	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

6.2.7. Crop Production of Sample Farms

Cumulative effect of Watercourses Improvement is reflected in total production of various crops as Production is the product of area and per acre crop yields. Thus, in this baseline report, production of various crops has also been calculated so that at a later stage it may be compared with that in impact surveys in order estimate water storage Tanks Construction impact. Thus, the zone wise production of various crops has been calculated and given in **Table 79** below. Crop-wise production has also been shown graphically in **Figures 21 and 22**.

Table-79: Crop Production on Sample Farms in Baselines I&II- Zone wise

Crops	Overall	Punjab	KP	Balochistan	GB	AJK
	Production in Maunds (40 Kgs)					
Wheat	26,843	17,129	3,866	1,157	1,491	3,200
Rice	9,742	8,195	54	1,024	-	469
Cotton	1,011	1,011	-	-	-	-
Maize	16,415	12,129	1,278	-	1,115	1,892
Sugarcane	16,702	16,702	-	-	-	-
Pulses	406	-	406	-	-	-
Onions	25,697	-	25,697	-	-	-
Potato	5,754	-	-	-	5,754	-
Tomato	8,218	-	3,129	5,089	-	-
Other Vegetables	55,842	7,638	2,662	44,509	191	843
Apple	26,420	-	-	26,420	-	-
Other Fruits	21,414	-	10,833	4,898	2,749	2,934
Rabi Fodder	39,848	10,212	11,423	11,143	1,622	5,449
Kharif Fodder	28,781	18,491	6,594	-	-	3,696

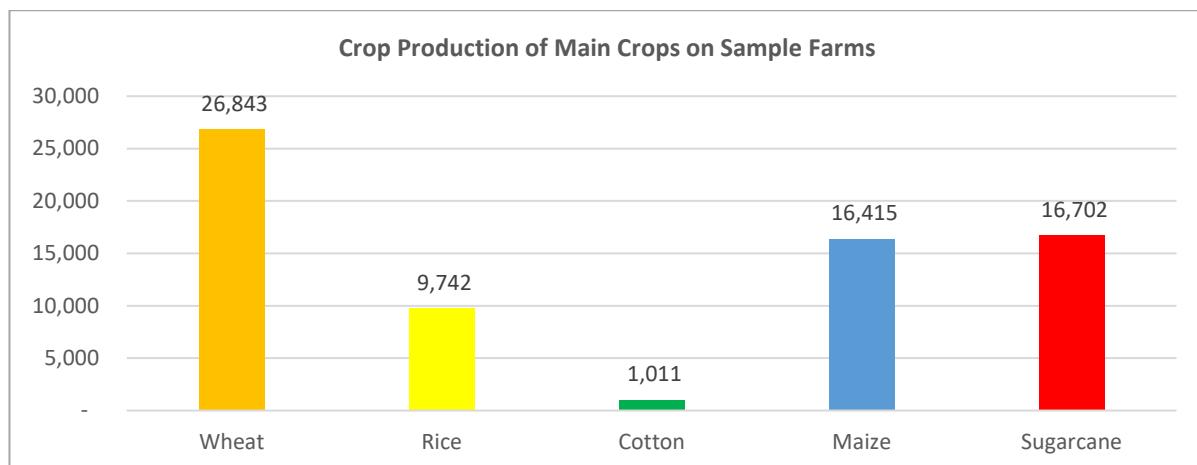


Figure 21: Crop Production (maunds) of Main Crops on Sample Farms

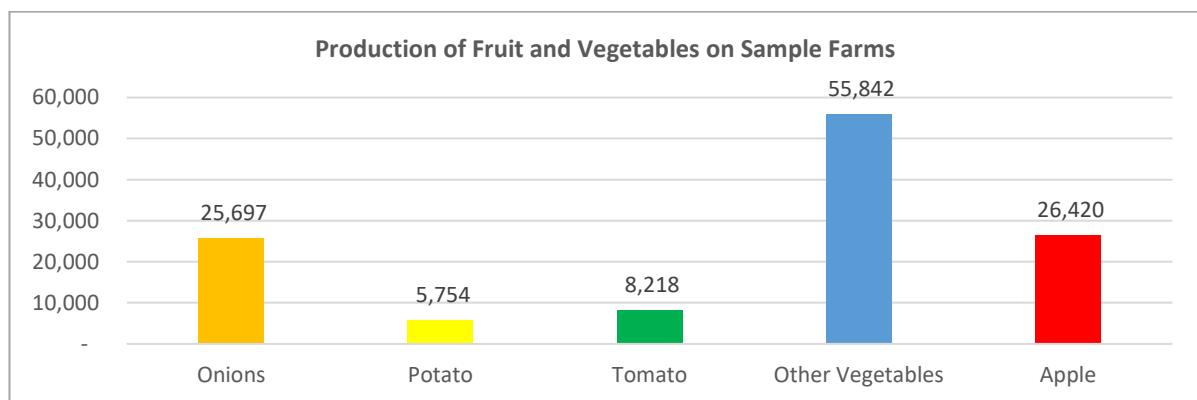


Figure 22: Production of Fruit and Vegetables (maunds) Sample Farms

6.2.8. Agriculture Employment on Sample Farms

During the baseline surveys information on agriculture employment has also been collected and analyzed to get its estimates. Total labor man days on Sample farms have been estimated at the sample farms as 38 Man days per acre and as 401 Man days per farm. Crop wise detail is given in **Table 80**.

Table-80: Agricultural Employment at Sample Farms

Crops	Overall	Agricultural Employment in Man-days				
		Punjab	KP	Balochistan	GB	AJK
Wheat	23,738	13,767	4,230	1,256	1,429	3,056
Rice	11,409	9,382	76	1,389	-	562
Cotton	2,278	2,278	-	-	-	-
Maize	13,947	6,727	2,955	-	1,444	2,820
Sugarcane	1,284	1,284	-	-	-	-
Pulses	582	-	582	-	-	-
Onions	10,529	-	10,529	-	-	-
Potato	2,350	-	-	-	2,350	-
Tomato	4,036	-	1,927	2,108	-	-
Other Vegetables	22,349	4,928	2,487	13,918	180	836
Apple	23,289	-	-	23,289	-	-
Other Fruits	18,542	-	11,304	2,746	2,291	2,201
Rabi Fodder	3,171	767	906	921	141	436
Kharif Fodder	1,579	1,015	411	-	-	153
Total	139,084	40,150	35,409	45,626	7,835	10,064
Average Per Acre	37.9	47.3	37.3	34.3	40.2	28.8
Average per Farm	400.8	501.9	448.2	308.3	522.3	402.6

6.2.9. Farm Household Income at Sample Farms

Gross income per acre on the sample farms varies from PKR 46,275 in case of pulses to PKR 241,500 in case of fruits. And net income varies from PKR 25,018 in case of pulses to PKR 117,575 in case of fruits. The details of other crops of gross and net incomes may be seen in **Table 81** below.

Table-81: Farm Gross and Net Income on Sample Farms

Crops	Gross Income		Cost of Production	Net Income
	Rupees per Acre			
Wheat	69,428		31,520	37,908
Rice	86,432		46,860	39,572
Cotton	76,440		43,275	33,165
Maize	91,885		52,645	39,240
Sugarcane	146,188		66,124	80,063
Pulses	46,275		21,256	25,018
Onion	135,876		79,711	56,165
Potato	289,787		121,871	167,916
Tomato	143,714		68,862	74,852
Other Vegetables	129,438		37,927	91,511
Apple	175,375		67,930	107,445
Other Fruits	241,500		123,925	117,575
Rabi Fodder	109,506		20,381	89,124
Kharif Fodder	83,018		11,448	71,570
Average	118,818		51,858	66,961

6.2.10. Area benefited and Gross and Net Income under Completed Schemes

In the previous sub sections of this Chapter, we evaluated the baseline area and per acre gross and net incomes of the 347 sample farms. In this sub section, sample results have been super imposed on all the farms located on all 5,915 completed Water Storage Tanks. Total farms area cultivated area and crop area of all farms located on these 5,915 completed WSTs have been estimated around 62,763 acres, 49,271 acres and 56,440 acres respectively. Gross and net incomes of all the farms on 5,915 completed WSTs has been estimated at 6.706 and 3.779 billion rupees respectively. Zone wise / unit wise detail is given in **Table 82**. These baseline estimates would help us in determining the project benefits and carrying out economic analysis after the impact surveys are completed.

Table-82: Area Benefited and Gross and net Income of the farms under completed Schemes

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

6.3. Spot Checking of Sample WSTs

While collecting information for baseline of Water Storage Tanks, 347 WSTs were also spot checked. The profile of the WSTs and results are summarized below:

6.3.1. Profile of Spot-Checked WSTs

Out of 347 spots checked WSTs, 142 (41%) were rectangular, while 205 (59%) were square in shape. Zone / Unit wise break up is given in **Table 83** below.

Table-83: Structure and Type of WST

Zone / Unit	No. of WST	Rectangular	Square
Punjab	80	80 (100%)	0 (0%)
KP	79	13 (16%)	66 (84%)
Balochistan	148	9 (6%)	139 (94%)
GB	15	15 (100%)	0
AJK	25	25 (100%)	0
Overall	347	142 (41%)	205 (59%)

6.3.2. Results of Spot Checking

About 76% (263) WSTs were completed before receiving the subsidy amount. The rest 84 (24%) were completed after receiving the subsidy from the department. Details have been given in **Table 84**.

Table-84: WST Completed by Farmers Before Subsidy Paid

Zone / Unit	No. of WST	Yes	No
Punjab	80	73 (91%)	7 (9%)
KP	79	66 (84%)	13 (16%)
Balochistan	148	87 (59%)	61 (41%)
GB	15	14 (93%)	1 (7%)
AJK	25	23 (92%)	2 (8%)
Overall	347	263 (76%)	84 (24%)

Out of a total of 347 spot checked WSTs, on over all basis, 322 (93%) have been completed as per approved standards and specifications. Zone / Unit wise detail has been given in **Table 85** below.

Table-85: WST Completed as per Approved Standards and Specifications

Zone / Unit	No. of WST	Yes	No
Punjab	80	73 (91%)	7 (9%)
KP	79	77 (97%)	2 (3%)
Balochistan	148	132 (89%)	16 (11%)
GB	15	15 (100%)	0 (0%)
AJK	25	25 (100%)	0 (0%)
Overall	347	322 (93%)	25 (7%)

Out of 347 spot checked WSTs, satisfactory Excavation Certificates were issued by the Consultants to 281 (81%) WSTs. Zone / Unit wise detail has been given in **Table 86** below.

Table-86: Issuance of Excavation Certificate by the Consultant

Zone / Unit	No. of WST	Yes	No
Punjab	80	65 (81%)	15 (19%)
KP	79	73 (92%)	6 (8%)
Balochistan	148	108 (73%)	40 (27%)
GB	15	13 (87%)	2 (13%)
AJK	25	22 (88%)	3 (12%)
Overall	347	281 (81%)	66 (19%)

Out of 347 spots checked WSTs, in the case of 170 (49%) WSTs the variations were found in the specifications of the material used. Zone / Unit wise detail has been given in **Table 87** below.

Table-87: Variation in Specifications of Material Used

Zone / Unit	No. of WST	According to Specifications	Not According to Specifications
Punjab	80	55 (69%)	25 (31%)
KP	79	44 (56%)	35 (44%)
Balochistan	148	62 (42%)	86 (58%)
GB	15	6 (40%)	9 (60%)
AJK	25	10 (40%)	15 (60%)
Overall	347	177 (51%)	170 (49%)

Out of 347 spot checked WSTs, in case of 309 WSTs, subsidy was paid as per cost estimates. Zone / Unit wise detail has been given in **Table 88** below.

Table-88: Subsidy Paid as per Cost Estimates

Zone / Unit	No. of WST	Yes	No
Punjab	80	75 (94%)	5 (6%)
KP	79	70 (89%)	9 (11%)
Balochistan	148	124 (84%)	24 (16%)
GB	15	15 (100%)	0
AJK	25	25 (100%)	0
Overall	347	309 (89%)	38 (11%)

On 347 spots checked WSTs, 574 trees were reported cut down. In their place 1,866 (more than thrice as per requirement) Saplings were planted out of which 394 (21%) survived after one year. WST protection arrangements were about 50% satisfactory and 94% WSTs were properly being maintained.

Zone and unit wise detail is given in **Table 89**.

Table-89: Trees Cut down, Planted, Survived and WST Properly Maintained

Zone / Unit	No. of WST	Cut Down Trees	Saplings Planted	Survived Trees	Protection Arrangement Made (%)	Properly Maintained WST (%)
Punjab	80	150	590	166	82%	94%
KP	79	114	422	102	79%	98%
Balochistan	148	210	506	92	88%	93%
GB	15	40	144	10	0%	85%
AJK	25	60	204	24	0%	100%
Overall	347	574	1866	394	50%	94%

Recommendations:

The spot checks highlight essential areas needing immediate improvement, particularly in reforestation practices and complete implementation of lining standards. Strengthened monitoring, enhanced enforcement of technical standards, and timely subsidy management are crucial. Targeted corrective measures and greater coordination between stakeholders are recommended to improve compliance and achieve full infrastructure benefits.

7. Waterlogging and Salinity

Waterlogging and salinity are persistent constraints to agricultural productivity in Pakistan's canal command areas. These issues are typically caused by excessive seepage from unlined or poorly maintained watercourses, over-irrigation, and inadequate surface or subsurface drainage systems. As water tables rise, soil pores become saturated, depriving crops of oxygen and accelerating the process of salt accumulation through capillary action.

To establish a pre-intervention benchmark, a stratified field survey was conducted involving direct interviews with members of Water Users Associations (WUAs) across Punjab, KP, Balochistan, GB, AJK, and ICT. Respondents shared quantitative data and perceptions regarding waterlogging and salinity conditions before the improvement of their watercourses.

7.1. Waterlogging: Baseline Overview

- A total of **21,497 acres** were reported as waterlogged before improvement interventions.
- The severity was highest in **Balochistan (14,480 acres)**, followed by **Punjab (3,808 acres)** and **KP (3,210 acres)**.
- **No significant waterlogging** was reported from **GB, AJK, or ICT**.

Table-90: Before Watercourse Improvement reported Waterlogged Area (Acres)

Zones / Units	Average Area	WCs	Total Area
Punjab	0.75	5,108	3,808
KP	0.98	3,285	3,210
Balochistan	3.21	4,510	14,480
GB	-	913	-
AJK	-	586	-
ICT	-	41	-
Overall	1.49	14,443	21,497

These figures reflect high seepage losses and a lack of effective water control measures across the surveyed watercourses.

7.2. Salinity: Baseline Overview

- A total of **22,034 acres** of saline-affected agricultural land was reported.
- **Punjab (7,657 acres)** and **Balochistan (8,463 acres)** showed high levels of soil salinity.
- In **KP**, the average saline area per watercourse was even higher (1.80 acres/WC), highlighting regional vulnerability.

Table-91: Before Watercourse Improvement reported Salinity Area (Acres)

Zones / Units	Average Area	WCs	Total Area
Punjab	1.50	5,108	7,657
KP	1.80	3,285	5,915
Balochistan	1.88	4,510	8,463
GB	-	913	-
AJK	-	586	-
ICT	-	41	-
Overall	1.53	14,443	22,034

Respondents linked salinity to prolonged waterlogging, insufficient drainage, and excessive irrigation with brackish water in some cases.

ANNEXURES

**ANNEX-A: DISTRICT-WISE BASELINE SURVEY
 SAMPLE DISTRIBUTION**

Zone	District	WC	WST	Overall
Punjab	Attock	0	6	6
Punjab	Bahawalnagar	22	3	25
Punjab	Bahawalpur	9	1	10
Punjab	Bhakkar	11	5	16
Punjab	Chakwal	0	7	7
Punjab	Chiniot	3	1	4
Punjab	Dera Ghazi Khan	9	3	12
Punjab	Faisalabad	9	2	11
Punjab	Gujranwala	7	1	8
Punjab	Gujrat	6	2	8
Punjab	Hafizabad	10	3	13
Punjab	Jhang	5	2	7
Punjab	Jhelum	0	2	2
Punjab	Kasur	6	2	8
Punjab	Khanewal	7	2	9
Punjab	Khushab	8	2	10
Punjab	Lahore	2	1	3
Punjab	Layyah	8	1	9
Punjab	Lodhran	15	1	16
Punjab	Mandi Bahauddin	4	2	6
Punjab	Mianwali	4	1	5
Punjab	Multan	9	5	14
Punjab	Muzaffargarh	6	2	8
Punjab	Nankana Sahib	3	2	5
Punjab	Narowal	1	0	1
Punjab	Okara	15	1	16
Punjab	Pakpattan	6	1	7
Punjab	Rahim Yar Khan	18	4	22
Punjab	Rajanpur	6	1	7
Punjab	Rawalpindi	0	4	4
Punjab	Sahiwal	8	1	9
Punjab	Sargodha	8	2	10
Punjab	Sheikhupura	8	2	10
Punjab	Sialkot	5	1	6
Punjab	Toba Tek Singh	6	3	9
Punjab	Vehari	6	1	7
Punjab Total		250	80	330
KP	Abbottabad	2	1	3
KP	Bannu	5	1	6
KP	Battagram	3	1	4
KP	Buner	6	2	8
KP	Charsadda	7	1	8
KP	Chitral	6	1	7
KP	Dera Ismail Khan	38	10	48
KP	Hangu	3	0	3
KP	Haripur	9	5	14
KP	Karak	4	4	8

Zone	District	WC	WST	Overall
KP	Khyber	2	2	4
KP	Kohat	5	1	6
KP	Lakki Marwat	6	2	8
KP	Lower Dir	7	1	8
KP	Lower Kohistan	1	0	1
KP	Lower Mohmand	2	3	5
KP	Malakand	6	2	8
KP	Mansehra	15	4	19
KP	Mardan	7	3	10
KP	Nowshera	20	8	28
KP	Peshawar	13	7	20
KP	Shangla	3	2	5
KP	Swabi	6	1	7
KP	Swat	14	8	22
KP	Tank	4	2	6
KP	Torghar	2	0	2
KP	Upper Dir	6	3	9
KP	Upper Kohistan	1	1	2
KP	Upper Mohmand	2	3	5
KP Total		205	79	284
Balochistan	Awaran	8	4	12
Balochistan	Barkhan	3	3	6
Balochistan	Chaghi	4	3	7
Balochistan	Dera Bugti	5	2	7
Balochistan	Duki	2	2	4
Balochistan	Gwadar	2	1	3
Balochistan	Harnai	2	1	3
Balochistan	Jafarabad	0	0	0
Balochistan	Jaffarabad	7	1	8
Balochistan	Jhal Magsi	2	4	6
Balochistan	Kachi	5	10	15
Balochistan	Kalat	13	9	22
Balochistan	Kech	6	5	11
Balochistan	Kharan	4	2	6
Balochistan	Khuzdar	8	7	15
Balochistan	Killa Abdullah	5	3	8
Balochistan	Killa Saifullah	12	6	18
Balochistan	Kohlu	3	2	5
Balochistan	Lasbela	10	8	18
Balochistan	Loralai	17	7	24
Balochistan	Mastung	9	8	17
Balochistan	Musakhail	11	1	12
Balochistan	Musakhel	0	1	1
Balochistan	Nasirabad	9	6	15
Balochistan	Nushki	6	3	9
Balochistan	Panjgur	8	8	16
Balochistan	Pishin	10	9	19
Balochistan	Quetta	4	15	19
Balochistan	Sherani	4	2	6
Balochistan	Sibi	3	3	6

Zone	District	WC	WST	Overall
Balochistan	Sohbatpur	10	1	11
Balochistan	Surab	2	2	4
Balochistan	Washuk	1	1	2
Balochistan	Zhob	4	4	8
Balochistan	Ziarat	4	4	8
Balochistan Total		203	148	351
GB	Astore	2	1	3
GB	Diamer	6	2	8
GB	Ghanche	6	0	6
GB	Ghizer	4	2	6
GB	Gilgit	5	3	8
GB	Hunza	2	1	3
GB	Kharmang	2	1	3
GB	Nagar	2	1	3
GB	Shigar	4	2	6
GB	Skardu	7	2	9
GB Total		40	15	55
AJK	Bagh	2	3	5
AJK	Bhimber	9	2	11
AJK	Haveli	1	2	3
AJK	Jhelum	3	4	7
AJK	Kotli	2	2	4
AJK	Mirpur	8	1	9
AJK	Muzaffarabad	7	7	14
AJK	Neelum	4	0	4
AJK	Poonch	2	3	5
AJK	Sudhnoti	1	1	2
AJK Total		39	25	64
ICT	ICT	7	0	7
ICT Total		7	0	7
Overall		744	347	1091

ANNEX-B: WATERCOURSES – ZONE WISE BASELINE FIELD SURVEY SCHEDULE

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Punjab Zone							
Baseline	15/06/2021	2	WC	11051232001	Punjab	Gujranwala	21600/R
Baseline	15/06/2021	3	WC	11093532013	Punjab	Muzaffargarh	26590/L
Baseline	15/06/2021	3	WC	11093532021	Punjab	Muzaffargarh	211073/R
Baseline	16/06/2021	1	WC	11012112001	Punjab	Kasur	3854/L
Baseline	16/06/2021	2	WC	11051532010	Punjab	Gujranwala	58622/TL
Baseline	16/06/2021	2	WC	11051532026	Punjab	Gujranwala	18715/L
Baseline	16/06/2021	3	WC	11093532012	Punjab	Muzaffargarh	94934/L
Baseline	16/06/2021	3	WC	11093532049	Punjab	Muzaffargarh	17600/L
Baseline	17/06/2021	1	WC	11012232008	Punjab	Kasur	11430/R
Baseline	17/06/2021	2	WC	11051532006	Punjab	Gujranwala	12445/R
Baseline	17/06/2021	3	WC	11093532022	Punjab	Muzaffargarh	46922/L
Baseline	18/06/2021	2	WC	11051432001	Punjab	Gujranwala	125800/R
Baseline	18/06/2021	3	WC	11093512013	Punjab	Muzaffargarh	26338/R
Baseline	19/06/2021	2	WC	11051412001	Punjab	Gujranwala	73300/R
Baseline	19/06/2021	2	WC	11051432013	Punjab	Gujranwala	63100/L
Baseline	21/06/2021	1	WC	11032212020	Punjab	Okara	20100/L
Baseline	21/06/2021	1	WC	11032232016	Punjab	Okara	10483/L
Baseline	22/06/2021	1	WC	11032232005	Punjab	Okara	67700/L
Baseline	22/06/2021	1	WC	11032232045	Punjab	Okara	18000/L
Baseline	13/07/2021	3	WC	11071132012	Punjab	Multan	12936/L
Baseline	14/07/2021	2	WC	11062212003	Punjab	Hafizabad	7224/R
Baseline	14/07/2021	2	WC	11062232026	Punjab	Hafizabad	28495/L
Baseline	14/07/2021	3	WC	11071432022	Punjab	Multan	16410/R
Baseline	15/07/2021	1	WC	11031232032	Punjab	Sahiwal	97580/L
Baseline	15/07/2021	2	WC	11062112003	Punjab	Hafizabad	8210/L
Baseline	15/07/2021	2	WC	11062132003	Punjab	Hafizabad	6990/R
Baseline	15/07/2021	2	WC	11062132017	Punjab	Hafizabad	655/L
Baseline	15/07/2021	3	WC	11071232013	Punjab	Multan	41440/L
Baseline	16/07/2021	1	WC	11031132010	Punjab	Sahiwal	28240/R

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	16/07/2021	1	WC	11031232066	Punjab	Sahiwal	30470/R
Baseline	16/07/2021	2	WC	11062232019	Punjab	Hafizabad	41350/TL
Baseline	16/07/2021	2	WC	11062232024	Punjab	Hafizabad	4256/R
Baseline	16/07/2021	2	WC	11063332004	Punjab	Mandi Bahauddin	7000/R
Baseline	16/07/2021	3	WC	11071232004	Punjab	Multan	43000/R
Baseline	16/07/2021	3	WC	11071432018	Punjab	Multan	106200/TR
Baseline	17/07/2021	1	WC	11031132008	Punjab	Sahiwal	6300/L
Baseline	17/07/2021	1	WC	11031132009	Punjab	Sahiwal	87112/L
Baseline	17/07/2021	1	WC	11031232064	Punjab	Sahiwal	32150/L
Baseline	17/07/2021	2	WC	11062132025	Punjab	Hafizabad	22447/L
Baseline	17/07/2021	2	WC	11062232010	Punjab	Hafizabad	15404/R
Baseline	17/07/2021	3	WC	11071232011	Punjab	Multan	27100/L
Baseline	16/08/2021	3	WC	11071432034	Punjab	Multan	10200/L
Baseline	17/08/2021	3	WC	11071432024	Punjab	Multan	10516/L
Baseline	28/10/2021	3	WC	11071112002	Punjab	Multan	25957/L
Baseline	22/02/2022	2	WC	11062132036	Punjab	Hafizabad	6730/L
Baseline	02/03/2022	1	WC	11014332006	Punjab	Sheikhupura	16800/R
Baseline	02/03/2022	1	WC	11014332007	Punjab	Sheikhupura	20460/L
Baseline	03/03/2022	1	WC	11014332014	Punjab	Sheikhupura	25400/R
Baseline	03/03/2022	1	WC	11014432004	Punjab	Sheikhupura	7600/TL
Baseline	03/03/2022	2	WC	11041532008	Punjab	Sargodha	49050/R
Baseline	03/03/2022	2	WC	11041832002	Punjab	Sargodha	6473/R
Baseline	04/03/2022	1	WC	11014332011	Punjab	Sheikhupura	4735/R
Baseline	04/03/2022	1	WC	11014532006	Punjab	Sheikhupura	935/R
Baseline	04/03/2022	2	WC	11041132021	Punjab	Sargodha	10990/L
Baseline	04/03/2022	2	WC	11041132032	Punjab	Sargodha	56900/L
Baseline	05/03/2022	1	WC	11014432007	Punjab	Sheikhupura	67919/TF
Baseline	05/03/2022	1	WC	11014432017	Punjab	Sheikhupura	58292/R
Baseline	23/05/2022	2	WC	11091132008	Punjab	Dera Ghazi Khan	59100/TR
Baseline	23/05/2022	2	WC	11091412002	Punjab	Dera Ghazi Khan	19288/L
Baseline	24/05/2022	2	WC	11091432008	Punjab	Dera Ghazi Khan	11470/L
Baseline	26/05/2022	3	WC	11082132017	Punjab	Bahawalnagar	17132/R

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	28/05/2022	3	WC	11082112006	Punjab	Bahawalnagar	13880/R
Baseline	28/05/2022	3	WC	11082532002	Punjab	Bahawalnagar	173540/L
Baseline	29/05/2022	3	WC	11082132023	Punjab	Bahawalnagar	77560/L
Baseline	01/06/2022	3	WC	11082612006	Punjab	Bahawalnagar	26066/L
Baseline	01/06/2022	3	WC	11082612007	Punjab	Bahawalnagar	10666/R
Baseline	02/06/2022	3	WC	11082532021	Punjab	Bahawalnagar	56830/L
Baseline	02/06/2022	3	WC	11082632004	Punjab	Bahawalnagar	22600/L
Baseline	03/06/2022	3	WC	11082132001	Punjab	Bahawalnagar	55980/L
Baseline	03/06/2022	3	WC	11082532053	Punjab	Bahawalnagar	57890/L
Baseline	15/06/2022	3	WC	11042132043	Punjab	Bhakkar	74750/R
Baseline	16/06/2022	1	WC	11042132003	Punjab	Bhakkar	26750/L
Baseline	17/06/2022	3	WC	11042312003	Punjab	Bhakkar	34000/TL
Baseline	01/07/2022	2	WC	11083412013	Punjab	Rahim Yar Khan	20245/R
Baseline	02/07/2022	2	WC	11083412005	Punjab	Rahim Yar Khan	9636/TR
Baseline	02/07/2022	2	WC	11083432003	Punjab	Rahim Yar Khan	58940/R
Baseline	04/07/2022	2	WC	11083232001	Punjab	Rahim Yar Khan	118915/TR
Baseline	04/07/2022	2	WC	11083232003	Punjab	Rahim Yar Khan	92500/R
Baseline	05/07/2022	2	WC	11083232002	Punjab	Rahim Yar Khan	95500/R
Baseline	05/07/2022	2	WC	11083232031	Punjab	Rahim Yar Khan	1560/L
Baseline	06/07/2022	2	WC	11083332031	Punjab	Rahim Yar Khan	20585/R
Baseline	06/07/2022	2	WC	11083412002	Punjab	Rahim Yar Khan	33100/R
Baseline	07/07/2022	2	WC	11083312006	Punjab	Rahim Yar Khan	17635/R
Baseline	07/07/2022	2	WC	11083332035	Punjab	Rahim Yar Khan	93445/L
Baseline	10/10/2022	3	WC	11081132021	Punjab	Bahawalpur	4320/L
Baseline	05/12/2022	1	WC	11011232007	Punjab	Lahore	13600/L
Baseline	06/12/2022	1	WC	11032332012	Punjab	Okara	16125/R
Baseline	06/12/2022	3	WC	11073132001	Punjab	Lodhran	33855/R
Baseline	07/12/2022	3	WC	11073132002	Punjab	Lodhran	15750/L
Baseline	08/12/2022	1	WC	11032332008	Punjab	Okara	12535/TR
Baseline	09/12/2022	1	WC	11032232007	Punjab	Okara	81400/R
Baseline	09/12/2022	3	WC	11073332002	Punjab	Lodhran	27405/L
Baseline	10/12/2022	1	WC	11032232040	Punjab	Okara	23980/R

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	10/12/2022	1	WC	11032332009	Punjab	Okara	7550/L
Baseline	10/12/2022	3	WC	11073312002	Punjab	Lodhran	18100/L
Baseline	10/12/2022	3	WC	11073332004	Punjab	Lodhran	126231/R
Baseline	13/12/2022	1	WC	11032212004	Punjab	Okara	14100/R
Baseline	13/12/2022	3	WC	11073332005	Punjab	Lodhran	49000/R
Baseline	14/12/2022	1	WC	11032232006	Punjab	Okara	4050/L
Baseline	14/12/2022	3	WC	11073332006	Punjab	Lodhran	6900/R
Baseline	15/12/2022	1	WC	11032132001	Punjab	Okara	87000/TL
Baseline	15/12/2022	3	WC	11073312006	Punjab	Lodhran	12702/L
Baseline	16/12/2022	1	WC	11032232004	Punjab	Okara	22627/R
Baseline	16/12/2022	3	WC	11073332003	Punjab	Lodhran	2925/R
Baseline	17/12/2022	1	WC	11032212002	Punjab	Okara	90600/TR
Baseline	17/12/2022	3	WC	11073312005	Punjab	Lodhran	52200/TF
Baseline	19/12/2022	3	WC	11073312001	Punjab	Lodhran	43818/L
Baseline	20/12/2022	3	WC	11073332001	Punjab	Lodhran	70978/TL
Baseline	21/12/2022	3	WC	11073312015	Punjab	Lodhran	61450/TL
Baseline	22/12/2022	3	WC	11073312004	Punjab	Lodhran	102970/R
Baseline	23/12/2022	3	WC	11094132030	Punjab	Rajanpur	4000/L
Baseline	03/01/2023	1	WC	11024332001	Punjab	Toba Tek Singh	443650/L
Baseline	03/01/2023	2	WC	11061112002	Punjab	Gujrat	30000/L
Baseline	03/01/2023	2	WC	110611132004	Punjab	Gujrat	9136/L
Baseline	03/01/2023	3	WC	11072232014	Punjab	Khanewal	87400/R
Baseline	04/01/2023	1	WC	11024332005	Punjab	Toba Tek Singh	2500/L
Baseline	04/01/2023	2	WC	11061112001	Punjab	Gujrat	7132/R
Baseline	04/01/2023	3	WC	11072232015	Punjab	Khanewal	11415/L
Baseline	05/01/2023	1	WC	11024132013	Punjab	Toba Tek Singh	58460/L
Baseline	05/01/2023	2	WC	110611132003	Punjab	Gujrat	12884/R
Baseline	05/01/2023	3	WC	11072232001	Punjab	Khanewal	264704/L
Baseline	06/01/2023	1	WC	11024132007	Punjab	Toba Tek Singh	30896/R
Baseline	06/01/2023	2	WC	110611132002	Punjab	Gujrat	46895/L
Baseline	06/01/2023	3	WC	11072232002	Punjab	Khanewal	24830/R
Baseline	07/01/2023	1	WC	11024232007	Punjab	Toba Tek Singh	445/L

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	07/01/2023	2	WC	11061132005	Punjab	Gujrat	30000/L
Baseline	07/01/2023	3	WC	11072232003	Punjab	Khanewal	47460/R
Baseline	08/01/2023	2	WC	11033132017	Punjab	Pakpattan	20440/R
Baseline	09/01/2023	1	WC	11023332018	Punjab	Jhang	35478/R
Baseline	09/01/2023	2	WC	11033112002	Punjab	Pakpattan	12996/R
Baseline	09/01/2023	3	WC	11072412003	Punjab	Khanewal	1500/R
Baseline	10/01/2023	1	WC	11023332015	Punjab	Jhang	43486/L
Baseline	10/01/2023	2	WC	11033232021	Punjab	Pakpattan	4393/L
Baseline	10/01/2023	2	WC	11053332003	Punjab	Sialkot	29800/L
Baseline	10/01/2023	3	WC	11072432019	Punjab	Khanewal	4050/R
Baseline	11/01/2023	1	WC	11023312002	Punjab	Jhang	17720/R
Baseline	11/01/2023	1	WC	11023312005	Punjab	Jhang	88668/L
Baseline	11/01/2023	2	WC	11053232001	Punjab	Sialkot	2000/R
Baseline	12/01/2023	1	WC	11021332001	Punjab	Faisalabad	30694/R
Baseline	12/01/2023	1	WC	11021332010	Punjab	Faisalabad	18985/L
Baseline	12/01/2023	2	WC	11033132015	Punjab	Pakpattan	33500/R
Baseline	12/01/2023	2	WC	11053332002	Punjab	Sialkot	131000/R
Baseline	13/01/2023	1	WC	11012432002	Punjab	Kasur	45316/L
Baseline	13/01/2023	2	WC	11033132013	Punjab	Pakpattan	37030/L
Baseline	13/01/2023	2	WC	11053232002	Punjab	Sialkot	1980/L
Baseline	14/01/2023	1	WC	11021432017	Punjab	Faisalabad	47007/L
Baseline	14/01/2023	1	WC	11022132002	Punjab	Chiniot	17006/R
Baseline	14/01/2023	2	WC	11053232003	Punjab	Sialkot	24200/TL
Baseline	07/02/2023	2	WC	11041632008	Punjab	Sargodha	28900/R
Baseline	07/02/2023	3	WC	11074132008	Punjab	Vehari	71750/L
Baseline	08/02/2023	2	WC	11033112003	Punjab	Pakpattan	24763/L
Baseline	08/02/2023	3	WC	11073132024	Punjab	Lodhran	63534/L
Baseline	08/02/2023	3	WC	11074212002	Punjab	Vehari	289500/R
Baseline	08/02/2023	3	WC	11074232005	Punjab	Vehari	2000/R
Baseline	09/02/2023	2	WC	11063232001	Punjab	Mandi Bahauddin	13726/L
Baseline	09/02/2023	2	WC	11063312002	Punjab	Mandi Bahauddin	23014/L
Baseline	10/02/2023	2	WC	11063212003	Punjab	Mandi Bahauddin	104720/R

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	10/02/2023	3	WC	11074232003	Punjab	Vehari	10780/R
Baseline	11/02/2023	2	WC	11052112001	Punjab	Narowal	18500/R
Baseline	12/02/2023	3	WC	11074132009	Punjab	Vehari	13020/R
Baseline	13/02/2023	3	WC	11074432010	Punjab	Vehari	25178/L
Baseline	17/02/2023	1	WC	11013132003	Punjab	Nankana Sahib	33400/TF
Baseline	20/02/2023	1	WC	11013132005	Punjab	Nankana Sahib	24642/TL
Baseline	21/02/2023	1	WC	11013132006	Punjab	Nankana Sahib	24642/TF
Baseline	21/02/2023	1	WC	11032212001	Punjab	Okara	48010/TL
BLS & Impact	04/12/2023	1	WC	11011232012	Punjab	Lahore	17125/L
BLS & Impact	04/12/2023	2	WC	11091132013	Punjab	Dera Ghazi Khan	102142/R
BLS & Impact	05/12/2023	1	WC	11012132002	Punjab	Kasur	25613/R
BLS & Impact	05/12/2023	2	WC	11091132033	Punjab	Dera Ghazi Khan	21730/R
BLS & Impact	06/12/2023	1	WC	11012132008	Punjab	Kasur	11563/L
BLS & Impact	06/12/2023	2	WC	11091432005	Punjab	Dera Ghazi Khan	16230/TL
BLS & Impact	07/12/2023	1	WC	11012132015	Punjab	Kasur	1172/L
BLS & Impact	07/12/2023	2	WC	11091432011	Punjab	Dera Ghazi Khan	9520/L
BLS & Impact	08/12/2023	1	WC	11031132036	Punjab	Sahiwal	10873/L
BLS & Impact	08/12/2023	2	WC	11091432046	Punjab	Dera Ghazi Khan	1900/L
BLS & Impact	11/12/2023	1	WC	11031132037	Punjab	Sahiwal	8970/TF
BLS & Impact	11/12/2023	2	WC	11091432050	Punjab	Dera Ghazi Khan	15900/R
BLS & Impact	12/12/2023	1	WC	11022132006	Punjab	Chiniot	17636/R
BLS & Impact	12/12/2023	2	WC	11094112010	Punjab	Rajanpur	28200/RII
BLS & Impact	13/12/2023	1	WC	11022232012	Punjab	Chiniot	23183/TL
BLS & Impact	13/12/2023	2	WC	11094132012	Punjab	Rajanpur	137231/L
BLS & Impact	14/12/2023	1	WC	11024102031	Punjab	Toba Tek Singh	4464/R
BLS & Impact	14/12/2023	2	WC	11094232002	Punjab	Rajanpur	19000/TR
BLS & Impact	15/12/2023	1	WC	11023312010	Punjab	Jhang	17720/R
BLS & Impact	15/12/2023	2	WC	11094232006	Punjab	Rajanpur	9303/L
BLS & Impact	18/12/2023	1	WC	11021232024	Punjab	Faisalabad	74391/L
BLS & Impact	18/12/2023	2	WC	11094232015	Punjab	Rajanpur	6780/R
BLS & Impact	19/12/2023	1	WC	11021332006	Punjab	Faisalabad	67712/R
BLS & Impact	19/12/2023	2	WC	11083112006	Punjab	Rahim Yar Khan	100/R

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	20/12/2023	1	WC	11021332009	Punjab	Faisalabad	35980/R
BLS & Impact	20/12/2023	2	WC	11083412004	Punjab	Rahim Yar Khan	43176/L
BLS & Impact	21/12/2023	1	WC	11021432001	Punjab	Faisalabad	10430/R
BLS & Impact	21/12/2023	2	WC	11083412008	Punjab	Rahim Yar Khan	4913/R
BLS & Impact	22/12/2023	1	WC	11021432007	Punjab	Faisalabad	2460/L
BLS & Impact	22/12/2023	2	WC	11083412009	Punjab	Rahim Yar Khan	700/L
BLS & Impact	26/12/2023	1	WC	11021432030	Punjab	Faisalabad	84295/L
BLS & Impact	26/12/2023	2	WC	11083432009	Punjab	Rahim Yar Khan	30400/L
BLS & Impact	27/12/2023	1	WC	11041132037	Punjab	Sargodha	4791/R
BLS & Impact	27/12/2023	2	WC	11083432040	Punjab	Rahim Yar Khan	22180/L
BLS & Impact	28/12/2023	1	WC	11041732003	Punjab	Sargodha	52726/L
BLS & Impact	28/12/2023	2	WC	11083432050	Punjab	Rahim Yar Khan	69423/L
BLS & Impact	29/12/2023	1	WC	11041732019	Punjab	Sargodha	2500/L
BLS & Impact	29/12/2023	2	WC	11081132018	Punjab	Bahawalpur	25000/L
BLS & Impact	01/01/2024	1	WC	11043132023	Punjab	Khushab	15073/R
BLS & Impact	01/01/2024	2	WC	11081132028	Punjab	Bahawalpur	22862/R
BLS & Impact	02/01/2024	1	WC	11043312002	Punjab	Khushab	5655/R
BLS & Impact	02/01/2024	2	WC	11081312007	Punjab	Bahawalpur	7960/R
BLS & Impact	03/01/2024	1	WC	11043312006	Punjab	Khushab	7425/R
BLS & Impact	03/01/2024	2	WC	11081312010	Punjab	Bahawalpur	54200/L
BLS & Impact	04/01/2024	1	WC	11043332010	Punjab	Khushab	32000/R
BLS & Impact	04/01/2024	2	WC	11081412002	Punjab	Bahawalpur	12635/R
BLS & Impact	05/01/2024	1	WC	11043412004	Punjab	Khushab	100000/L
BLS & Impact	05/01/2024	2	WC	11081432024	Punjab	Bahawalpur	150280/R
BLS & Impact	08/01/2024	1	WC	11043432003	Punjab	Khushab	34840/R
BLS & Impact	08/01/2024	2	WC	11081632002	Punjab	Bahawalpur	16900/R
BLS & Impact	09/01/2024	1	WC	11043432010	Punjab	Khushab	28014/R
BLS & Impact	09/01/2024	2	WC	11081632005	Punjab	Bahawalpur	57900/R
BLS & Impact	10/01/2024	1	WC	11043432019	Punjab	Khushab	34200/R
BLS & Impact	10/01/2024	2	WC	11082132024	Punjab	Bahawalnagar	36385/R
BLS & Impact	11/01/2024	1	WC	11044332018	Punjab	Mianwali	29760/R
BLS & Impact	11/01/2024	2	WC	11082232013	Punjab	Bahawalnagar	13570/R

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	12/01/2024	1	WC	11044332019	Punjab	Mianwali	29760/R
BLS & Impact	12/01/2024	2	WC	11082232020	Punjab	Bahawalnagar	40700/R
BLS & Impact	15/01/2024	1	WC	11044332051	Punjab	Mianwali	20450/L
BLS & Impact	15/01/2024	2	WC	11082232039	Punjab	Bahawalnagar	61970/R
BLS & Impact	16/01/2024	1	WC	11044332052	Punjab	Mianwali	20450/L
BLS & Impact	16/01/2024	2	WC	11082432001	Punjab	Bahawalnagar	29260/R
BLS & Impact	17/01/2024	1	WC	11041412006	Punjab	Bhakkar	1250/R
BLS & Impact	17/01/2024	2	WC	11082432027	Punjab	Bahawalnagar	93050/R
BLS & Impact	18/01/2024	1	WC	11041432025	Punjab	Bhakkar	21000/R
BLS & Impact	18/01/2024	2	WC	11082532003	Punjab	Bahawalnagar	31580/R
BLS & Impact	19/01/2024	1	WC	11042112002	Punjab	Bhakkar	68500/R
BLS & Impact	19/01/2024	2	WC	11082532015	Punjab	Bahawalnagar	44276/R
BLS & Impact	22/01/2024	1	WC	11042132045	Punjab	Bhakkar	24500/L
BLS & Impact	22/01/2024	2	WC	11082532034	Punjab	Bahawalnagar	70086/R
BLS & Impact	23/01/2024	1	WC	11042132059	Punjab	Bhakkar	16400/R
BLS & Impact	23/01/2024	2	WC	11082532035	Punjab	Bahawalnagar	12071/R
BLS & Impact	24/01/2024	1	WC	11042332009	Punjab	Bhakkar	58780/R
BLS & Impact	24/01/2024	2	WC	11082532042	Punjab	Bahawalnagar	110650/R
BLS & Impact	25/01/2024	1	WC	11042432015	Punjab	Bhakkar	40392/R
BLS & Impact	25/01/2024	2	WC	11082532048	Punjab	Bahawalnagar	85260/R
BLS & Impact	26/01/2024	1	WC	11042432016	Punjab	Bhakkar	13250/R
BLS & Impact	26/01/2024	2	WC	11092132007	Punjab	Layyah	17770/L
BLS & Impact	29/01/2024	2	WC	11092132042	Punjab	Layyah	17638/L
BLS & Impact	30/01/2024	2	WC	11092212002	Punjab	Layyah	140469/R
BLS & Impact	31/01/2024	2	WC	11092212003	Punjab	Layyah	137358/R
BLS & Impact	01/02/2024	2	WC	11092232007	Punjab	Layyah	57570/R
BLS & Impact	02/02/2024	2	WC	11092232021	Punjab	Layyah	56300/R
BLS & Impact	12/02/2024	2	WC	11092232023	Punjab	Layyah	34125/R
BLS & Impact	13/02/2024	2	WC	11092332009	Punjab	Layyah	37300/R
Khyber Pakhtunkhwa (KP) Zone							
Baseline	15/06/2021	2	WC	12041113054	KP	Kohat	Asim Altaf
Baseline	16/06/2021	2	WC	12012113042	KP	Lakki Marwat	Gulo Khan

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	16/06/2021	3	WC	12033113007	KP	Haripur	Nazakat Khan
Baseline	16/06/2021	3	WC	12033113013	KP	Haripur	Shakir Ali
Baseline	16/06/2021	1	WC	12062113002	KP	Swabi	Baz Muhammad
Baseline	16/06/2021	1	WC	12062132002	KP	Swabi	026-L
Baseline	17/06/2021	2	WC	12021412079	KP	Dera Ismail Khan	Naimat Ullah
Baseline	17/06/2021	2	WC	12021412080	KP	Dera Ismail Khan	Sona Khan
Baseline	17/06/2021	3	WC	12031116011	KP	Abbottabad	Bagotar Doga
Baseline	17/06/2021	1	WC	12073113016	KP	Nowshera	Muhammad Tahir Shah
Baseline	18/06/2021	2	WC	12011313019	KP	Bannu	Habib Ullah
Baseline	18/06/2021	3	WC	12032116003	KP	Battagram	Badiuzzaman Khan
Baseline	18/06/2021	3	WC	12036113010	KP	Mansehra	Ashique Hussain
Baseline	19/06/2021	3	WC	12037215005	KP	Torghar	Jaaga Bala
Baseline	19/06/2021	1	WC	12071118001	KP	Peshawar	Shad Muhammad
Baseline	21/06/2021	1	WC	12072332008	KP	Charsadda	3077-R
Baseline	22/06/2021	1	WC	12061112019	KP	Mardan	Ali Sarwar
Baseline	22/06/2022	2	WC	12021112108	KP	Dera Ismail Khan	Abass Tw Wc
Baseline	23/06/2022	1	WC	12073212006	KP	Nowshera	Zahir shah
Baseline	24/06/2022	1	WC	12073112029	KP	Nowshera	Kashif Rafique
Baseline	27/06/2022	2	WC	12021412086	KP	Dera Ismail Khan	Malik Habibullah Tw
Baseline	27/06/2022	2	WC	12021512135	KP	Dera Ismail Khan	Umar farooq
Baseline	27/06/2022	1	WC	12073113022	KP	Nowshera	Faid Gul
Baseline	28/06/2022	2	WC	12021412090	KP	Dera Ismail Khan	Ghulam Rabani
Baseline	28/06/2022	1	WC	12073112035	KP	Nowshera	Khadim Ali Twwc
Baseline	04/07/2022	2	WC	12021412087	KP	Dera Ismail Khan	Ghulam Sadiq
Baseline	04/07/2022	2	WC	12021412093	KP	Dera Ismail Khan	Muhammad Sher Tw Wc
Baseline	05/07/2022	2	WC	12021112097	KP	Dera Ismail Khan	Ikram ullah
Baseline	05/07/2022	1	WC	12071116012	KP	Peshawar	Zahir ul Amin
Baseline	06/07/2022	2	WC	12021512110	KP	Dera Ismail Khan	Sardar Malik Liaqat
Baseline	14/07/2022	1	WC	12073232003	KP	Nowshera	Mogha No 19725/L
Baseline	23/07/2022	2	WC	12021112089	KP	Dera Ismail Khan	Ijaz U Din Tw Wc
Baseline	23/07/2022	2	WC	12021112099	KP	Dera Ismail Khan	Saif ur rehman
Baseline	26/07/2022	2	WC	12021112096	KP	Dera Ismail Khan	Sabir Hussain Tw Wc

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	26/07/2022	2	WC	12021312014	KP	Dera Ismail Khan	Muhammad Haris
Baseline	27/07/2022	2	WC	12021412082	KP	Dera Ismail Khan	Allah Dad Tw
Baseline	28/07/2022	2	WC	12021112103	KP	Dera Ismail Khan	Sana Ullah Tw wc
Baseline	28/07/2022	2	WC	12021113002	KP	Dera Ismail Khan	Abdul Razaq
Baseline	29/07/2022	2	WC	12021112098	KP	Dera Ismail Khan	Ali Muhammad
Baseline	29/07/2022	2	WC	12021112101	KP	Dera Ismail Khan	Shahniwaz Tw Wc
Baseline	02/08/2022	2	WC	12021512123	KP	Dera Ismail Khan	Zameer Hussain Tw Wc
Baseline	02/08/2022	2	WC	12021512137	KP	Dera Ismail Khan	Qayum nawaz Tw Wc
Baseline	02/08/2022	3	WC	12033113025	KP	Haripur	Ahsan Raza
Baseline	04/08/2022	3	WC	12033313001	KP	Haripur	Akhtar Zaman
Baseline	04/08/2022	3	WC	12033313002	KP	Haripur	Ghulam Asghar
Baseline	05/12/2022	3	WC	12033313027	KP	Haripur	Muhammad Zaman
Baseline	05/12/2022	3	WC	12033316001	KP	Haripur	Shabir Muhammad Abbasi
Baseline	06/12/2022	3	WC	12031116013	KP	Abbottabad	Abid Gul
Baseline	07/12/2022	3	WC	12036116016	KP	Mansehra	Batrairh Pipe WC
Baseline	07/12/2022	3	WC	12036116020	KP	Mansehra	AKHTAR Zaib Khan Pipe WC
Baseline	08/12/2022	3	WC	12036212009	KP	Mansehra	CPEC Bajnah Chowk WC
Baseline	08/12/2022	3	WC	12036216017	KP	Mansehra	Batangi Timbri pipe WC
Baseline	09/12/2022	3	WC	12036216018	KP	Mansehra	Kamad Bela Pipe WC
Baseline	12/12/2022	3	WC	12036116010	KP	Mansehra	Hashir Pipe WC
Baseline	12/12/2022	3	WC	12036116023	KP	Mansehra	Gulzar Ahmed Khan WC
Baseline	13/12/2022	3	WC	12036116005	KP	Mansehra	Moeen
Baseline	13/12/2022	3	WC	12036316017	KP	Mansehra	Kashtra PWC
Baseline	14/12/2022	3	WC	12036216015	KP	Mansehra	Naror Trangri Pipe WC
Baseline	14/12/2022	3	WC	12036216020	KP	Mansehra	Uddi Kassi Pipe WC
Baseline	14/12/2022	3	WC	12036216022	KP	Mansehra	Timbri kattha Pipe WC
Baseline	15/12/2022	3	WC	12036212006	KP	Mansehra	51886-R
Baseline	15/12/2022	3	WC	12036236001	KP	Mansehra	Perwaiz Khan
Baseline	15/12/2022	1	WC	12072312002	KP	Charsadda	19195-L
Baseline	15/12/2022	1	WC	12072312008	KP	Charsadda	42200-R
Baseline	16/12/2022	3	WC	12033233001	KP	Haripur	Muhammad Zareen
Baseline	16/12/2022	3	WC	12033312002	KP	Haripur	Tahir Mehmood

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	16/12/2022	1	WC	12072212001	KP	Charsadda	Khan Bacha
Baseline	16/12/2022	1	WC	12072316002	KP	Charsadda	Fazal Subhan 1
Baseline	19/12/2022	1	WC	12072312004	KP	Charsadda	11930-T.F
Baseline	19/12/2022	1	WC	12072316008	KP	Charsadda	Noor Ul Amin
Baseline	20/12/2022	1	WC	12061132002	KP	Mardan	6550-R
Baseline	20/12/2022	1	WC	12061512010	KP	Mardan	1700-L
Baseline	21/12/2022	1	WC	12061112035	KP	Mardan	Fazal Subhan
Baseline	21/12/2022	1	WC	12061113004	KP	Mardan	Muhammad Zeb
Baseline	22/12/2022	1	WC	12073132004	KP	Nowshera	180300-R
Baseline	22/12/2022	1	WC	12073312003	KP	Nowshera	3900-R
Baseline	22/12/2022	1	WC	12073312004	KP	Nowshera	21000-L
Baseline	23/12/2022	1	WC	12073112016	KP	Nowshera	6600-L
Baseline	23/12/2022	1	WC	12073113004	KP	Nowshera	Abdullah Khattak
Baseline	23/12/2022	1	WC	12073132003	KP	Nowshera	9284.T.F
Baseline	26/12/2022	1	WC	12073113018	KP	Nowshera	Muhammad Akbar
Baseline	26/12/2022	1	WC	12073213008	KP	Nowshera	Afsar khan
Baseline	27/12/2022	1	WC	12073112009	KP	Nowshera	Sartaj
Baseline	27/12/2022	1	WC	12073113015	KP	Nowshera	Shahin Shah
Baseline	27/12/2022	1	WC	12073113024	KP	Nowshera	Shahid
Baseline	28/12/2022	1	WC	12073113021	KP	Nowshera	Shahzad Gul
Baseline	28/12/2022	1	WC	12073313004	KP	Nowshera	Tayab khan
Baseline	28/12/2022	1	WC	12073313005	KP	Nowshera	Waseem Muhammad
Baseline	03/01/2023	1	WC	12071112042	KP	Peshawar	Ikram Ullah
Baseline	03/01/2023	1	WC	12071116003	KP	Peshawar	Rashid Zaman
Baseline	04/01/2023	1	WC	120711132004	KP	Peshawar	70000-L-Hazar Khwani
Baseline	04/01/2023	1	WC	120711132008	KP	Peshawar	159000-L Wgc
Baseline	05/01/2023	1	WC	12071116011	KP	Peshawar	Adil zaman
Baseline	05/01/2023	1	WC	12071412001	KP	Peshawar	Amjad Ali
Baseline	06/01/2023	1	WC	12071212001	KP	Peshawar	Kashif Twc
Baseline	06/01/2023	1	WC	12071216001	KP	Peshawar	Iqbal Hussain
Baseline	09/01/2023	1	WC	12071112045	KP	Peshawar	Tahir khan
Baseline	09/01/2023	1	WC	12071112047	KP	Peshawar	Wajid khan

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	10/01/2023	2	WC	12021312012	KP	Dera Ismail Khan	Akhtar Ullah
Baseline	10/01/2023	2	WC	12021312013	KP	Dera Ismail Khan	Muhammad Ayaz
Baseline	10/01/2023	1	WC	12062113007	KP	Swabi	WC NO.12320/R
Baseline	10/01/2023	1	WC	12062312003	KP	Swabi	13000-L
Baseline	11/01/2023	2	WC	12021112088	KP	Dera Ismail Khan	Gul Khan Tw
Baseline	11/01/2023	2	WC	12021112095	KP	Dera Ismail Khan	Ghulam Abbas shah
Baseline	11/01/2023	1	WC	12061313001	KP	Mardan	No. 1134/R
Baseline	11/01/2023	1	WC	12071116001	KP	Peshawar	Abdul Majeed
Baseline	12/01/2023	2	WC	12021512121	KP	Dera Ismail Khan	Muhammad Aftab Tw Wc
Baseline	12/01/2023	2	WC	12021513005	KP	Dera Ismail Khan	Hayat Ullah
Baseline	13/01/2023	2	WC	12021412085	KP	Dera Ismail Khan	Malik Khurshid Tw
Baseline	13/01/2023	2	WC	12021412089	KP	Dera Ismail Khan	Muhammad Akram Tw Wc
Baseline	16/01/2023	2	WC	12021512112	KP	Dera Ismail Khan	Muhammad Tw Wc
Baseline	16/01/2023	2	WC	12021512117	KP	Dera Ismail Khan	Sona Tw Wc
Baseline	17/01/2023	2	WC	12021112090	KP	Dera Ismail Khan	Shah jahan Tw Wc
Baseline	17/01/2023	2	WC	12021412091	KP	Dera Ismail Khan	Nazeer Aehmad
Baseline	19/01/2023	2	WC	12041113026	KP	Kohat	Abdul Qadir
Baseline	19/01/2023	2	WC	12041113060	KP	Kohat	Ahsan Hayat
Baseline	24/01/2023	1	WC	12052216003	KP	Buner	Umer Wahid
Baseline	24/01/2023	1	WC	12052216004	KP	Buner	Amir Nawab Khan
Baseline	25/01/2023	1	WC	12052616011	KP	Buner	Laiq Zada TWWC
Baseline	25/01/2023	1	WC	12052616021	KP	Buner	Qayyum Zada TWWC
Baseline	26/01/2023	1	WC	12052216022	KP	Buner	T/W WC wazir ali
Baseline	26/01/2023	1	WC	12052416007	KP	Buner	Rahat Shah
Baseline	27/01/2023	1	WC	12056516030	KP	Swat	Sadam Hussain
Baseline	27/01/2023	1	WC	12056516060	KP	Swat	Abdullah
Baseline	27/01/2023	1	WC	12056516071	KP	Swat	Bahader zeb
Baseline	07/02/2023	2	WC	12041112001	KP	Kohat	12400-R
Baseline	07/02/2023	2	WC	12041113033	KP	Kohat	Hazrat Umar
Baseline	07/02/2023	1	WC	12056416019	KP	Swat	Muhammad ishaq
Baseline	07/02/2023	1	WC	12056416026	KP	Swat	Qadar Gul
Baseline	08/02/2023	2	WC	12011112003	KP	Bannu	Noor Naib Khan

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	08/02/2023	2	WC	12011118002	KP	Bannu	Adhami Degan
Baseline	08/02/2023	1	WC	12056416024	KP	Swat	Asad Ali
Baseline	08/02/2023	1	WC	12056716071	KP	Swat	Wahid zada
Baseline	09/02/2023	2	WC	12011112001	KP	Bannu	Faisal Khan-2
Baseline	09/02/2023	2	WC	12011112002	KP	Bannu	Faisal Khan-1
Baseline	09/02/2023	1	WC	12056616010	KP	Swat	Fawad Ullah
Baseline	09/02/2023	1	WC	12056616013	KP	Swat	Khurshid Ali
Baseline	10/02/2023	2	WC	12012312002	KP	Lakki Marwat	Vial Shahjee Wala
Baseline	10/02/2023	2	WC	12012312004	KP	Lakki Marwat	Vail Nimzar
Baseline	10/02/2023	1	WC	12056216021	KP	Swat	Akbar shah
Baseline	13/02/2023	2	WC	12021112042	KP	Dera Ismail Khan	3500-L
Baseline	13/02/2023	2	WC	12021112047	KP	Dera Ismail Khan	3800-L
Baseline	13/02/2023	2	WC	12021112079	KP	Dera Ismail Khan	17600-R
Baseline	13/02/2023	1	WC	12054216001	KP	Lower Dir	171+500-L
Baseline	14/02/2023	2	WC	12021412063	KP	Dera Ismail Khan	2900-R
Baseline	14/02/2023	2	WC	12021512026	KP	Dera Ismail Khan	3143-R
Baseline	14/02/2023	1	WC	12051116001	KP	Malakand	Asmatullah
Baseline	14/02/2023	1	WC	12051212012	KP	Malakand	10181-L
Baseline	15/02/2023	1	WC	12051212006	KP	Malakand	32650-L
Baseline	15/02/2023	1	WC	12051212029	KP	Malakand	Mogha 25461/ R
Baseline	16/02/2023	1	WC	12051212017	KP	Malakand	Mogha 3593/R
Baseline	16/02/2023	1	WC	12051212026	KP	Malakand	Mogha 1148/R
BLS & Impact	04/12/2023	1	WC	12042113009	KP	Hangu	Najeeb Ullah
BLS & Impact	04/12/2023	2	WC	12062112006	KP	Swabi	Hammad PWC
BLS & Impact	05/12/2023	1	WC	12042213026	KP	Hangu	Shahzad Khan
BLS & Impact	05/12/2023	2	WC	12062113013	KP	Swabi	Anas Ahmad TWWC
BLS & Impact	06/12/2023	1	WC	12042213031	KP	Hangu	Umar Farooq
BLS & Impact	06/12/2023	2	WC	12061132011	KP	Mardan	50-R
BLS & Impact	07/12/2023	2	WC	12032115017	KP	Battagram	Yousif Abad
BLS & Impact	07/12/2023	1	WC	12043113027	KP	Karak	Khaliq
BLS & Impact	08/12/2023	2	WC	12032116004	KP	Battagram	Sairy Qaiser Khan
BLS & Impact	08/12/2023	1	WC	12043113044	KP	Karak	Akhter Iqbal

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	11/12/2023	1	WC	12043313028	KP	Karak	Azmat Bilal
BLS & Impact	11/12/2023	2	WC	12053116030	KP	Chitral	Inayat Ali Shah
BLS & Impact	12/12/2023	1	WC	12043313031	KP	Karak	Shaheed Ullah
BLS & Impact	12/12/2023	2	WC	12053116033	KP	Chitral	Syed Aminuddin Shah
BLS & Impact	13/12/2023	1	WC	12012113048	KP	Lakki Marwat	Qismat Khan
BLS & Impact	13/12/2023	2	WC	12053116034	KP	Chitral	Zaffar Khan
BLS & Impact	14/12/2023	1	WC	12012113060	KP	Lakki Marwat	Masalahat Khan
BLS & Impact	14/12/2023	2	WC	12053416042	KP	Chitral	Sikandar Khan
BLS & Impact	15/12/2023	1	WC	12012113065	KP	Lakki Marwat	Mushk Alam
BLS & Impact	15/12/2023	2	WC	12053416043	KP	Chitral	Ashraf Nabi
BLS & Impact	18/12/2023	1	WC	12022113044	KP	Tank	Astana Gull
BLS & Impact	18/12/2023	2	WC	12053416050	KP	Chitral	Zahida ur Rehman
BLS & Impact	19/12/2023	1	WC	12022113045	KP	Tank	Shamal Khan
BLS & Impact	19/12/2023	2	WC	12057116013	KP	Upper Dir	Ache Kala Malkani
BLS & Impact	20/12/2023	1	WC	12022113051	KP	Tank	Abubakar Sadiq
BLS & Impact	20/12/2023	2	WC	12057116015	KP	Upper Dir	Darai Hattan Payeen
BLS & Impact	21/12/2023	1	WC	12022113052	KP	Tank	Muhammad Iqbal Shah
BLS & Impact	21/12/2023	2	WC	12057116019	KP	Upper Dir	Sharmai Sawni
BLS & Impact	22/12/2023	2	WC	12057116020	KP	Upper Dir	Jawazo Khwar
BLS & Impact	22/12/2023	1	WC	12101112017	KP	Khyber	Jawar Gul
BLS & Impact	26/12/2023	2	WC	12057116021	KP	Upper Dir	Shahoor
BLS & Impact	26/12/2023	1	WC	12101116006	KP	Khyber	Musharaf Khan
BLS & Impact	27/12/2023	2	WC	12057116023	KP	Upper Dir	Maina Khwar
BLS & Impact	27/12/2023	1	WC	12091216002	KP	Lower Mohmand	Fateh Khan
BLS & Impact	28/12/2023	2	WC	12054116025	KP	Lower Dir	Muhammad Ismail
BLS & Impact	28/12/2023	1	WC	12091216004	KP	Lower Mohmand	Syed Badshah
BLS & Impact	29/12/2023	2	WC	12054116058	KP	Lower Dir	Nasib Khan
BLS & Impact	29/12/2023	1	WC	12092316009	KP	Upper Mohmand	Fazle Wadood
BLS & Impact	01/01/2024	2	WC	12054312001	KP	Lower Dir	Fazal Abad
BLS & Impact	01/01/2024	1	WC	12092316010	KP	Upper Mohmand	Javed Khan
BLS & Impact	02/01/2024	1	WC	12035216010	KP	Lower Kohistan	Ameez Abad
BLS & Impact	02/01/2024	1	WC	12038316003	KP	Upper Kohistan	Ishaq Abad

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	02/01/2024	2	WC	12054416004	KP	Lower Dir	Huzaifa Pwc
BLS & Impact	03/01/2024	1	WC	12037215025	KP	Torghar	Chirhgai
BLS & Impact	03/01/2024	2	WC	12054616020	KP	Lower Dir	Imran Khan
BLS & Impact	04/01/2024	2	WC	12054616021	KP	Lower Dir	Muhammad Ikram
BLS & Impact	04/01/2024	1	WC	12056216047	KP	Swat	Naveed
BLS & Impact	05/01/2024	1	WC	12056216048	KP	Swat	Naeem Ul Haq
BLS & Impact	08/01/2024	2	WC	12055415001	KP	Shangla	Razmeen Pakhyai WC
BLS & Impact	08/01/2024	1	WC	12056516046	KP	Swat	Akhtar Hussain
BLS & Impact	09/01/2024	2	WC	12055416006	KP	Shangla	Naseeb Dead Pwc
BLS & Impact	09/01/2024	1	WC	12056516047	KP	Swat	Mian Sayed Rashed
BLS & Impact	10/01/2024	2	WC	12055416007	KP	Shangla	Nakhtaro Pwc
Balochistan Zone							
Baseline	16/06/2021	1	WC	13031311010	Balochistan	Nasirabad	Muhammad Munawar
Baseline	17/06/2021	2	WC	13015115014	Balochistan	Mastung	Abdul Ghani
Baseline	17/06/2021	1	WC	13035111002	Balochistan	Sohbatpur	Khalil Ahmad
Baseline	18/06/2021	1	WC	13031311011	Balochistan	Nasirabad	Muhammad Safar
Baseline	18/06/2021	2	WC	13042115001	Balochistan	Killa Abdullah	Haji Rehmatullah
Baseline	19/06/2021	1	WC	13035211012	Balochistan	Sohbatpur	Shahzad Ali
Baseline	19/06/2021	2	WC	13072615003	Balochistan	Killa Saifullah	Malik Muhammad Youns
Baseline	20/06/2021	1	WC	13035211010	Balochistan	Sohbatpur	Muhammad Bakhsh
Baseline	21/06/2021	2	WC	13072115003	Balochistan	Killa Saifullah	Mr. Muhammad Gulab
Baseline	21/06/2021	2	WC	13081113004	Balochistan	Loralai	Abdul Ghafar
Baseline	22/06/2021	3	WC	13011415001	Balochistan	Kalat	Abdul Hameed
Baseline	28/07/2021	2	WC	13071113014	Balochistan	Zhob	Fareed Khan
Baseline	28/07/2021	2	WC	13071119001	Balochistan	Zhob	Abdul Wahid
Baseline	28/07/2021	1	WC	13082119002	Balochistan	Loralai	Ahsan Ullah
Baseline	29/07/2021	1	WC	13031319001	Balochistan	Nasirabad	Asadullah
Baseline	29/07/2021	1	WC	13031919004	Balochistan	Nasirabad	Abdul Quddus
Baseline	29/07/2021	1	WC	13031919005	Balochistan	Nasirabad	Abdul Rehman
Baseline	30/07/2021	1	WC	13031311007	Balochistan	Nasirabad	Khawand Bakhsh
Baseline	30/07/2021	3	WC	13053115002	Balochistan	Nushki	Shahnawaz Khan
Baseline	30/07/2021	3	WC	13053119001	Balochistan	Nushki	Ameer Hamza

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	02/08/2021	1	WC	13032211025	Balochistan	Jaffarabad	Muhib Ali Kandrani & others
Baseline	02/08/2021	1	WC	13032211036	Balochistan	Jaffarabad	Khair Muhammad & others
Baseline	02/08/2021	1	WC	13032211054	Balochistan	Jaffarabad	Asadullah
Baseline	03/08/2021	2	WC	13073115001	Balochistan	Sherani	Mohammad Shah
Baseline	03/08/2021	2	WC	13073115004	Balochistan	Sherani	Rahmat Shah
Baseline	03/08/2021	1	WC	13084119001	Balochistan	Musakhail	Abdul Rahim
Baseline	04/08/2021	2	WC	13065213028	Balochistan	Ziarat	Haji Raz Muhammad
Baseline	04/08/2021	1	WC	13081113024	Balochistan	Loralai	Abdul Raziq
Baseline	21/08/2021	2	WC	13042119001	Balochistan	Killa Abdullah	Abdul Ghanni
Baseline	24/08/2021	1	WC	13015111001	Balochistan	Mastung	Haji Mohammed alim
Baseline	24/08/2021	1	WC	13015113033	Balochistan	Mastung	Nasrullah
Baseline	24/08/2021	1	WC	13015113037	Balochistan	Mastung	Rehmat Khan
Baseline	25/08/2021	3	WC	13041319001	Balochistan	Quetta	Abdul Malik
Baseline	25/08/2021	3	WC	13041319002	Balochistan	Quetta	Abdul Raziq
Baseline	25/08/2021	3	WC	13041319003	Balochistan	Quetta	Zubair Ahmed
Baseline	26/08/2021	1	WC	13011419001	Balochistan	Kalat	Abdul Qayoum
Baseline	26/08/2021	1	WC	13011419002	Balochistan	Kalat	Mir Mohammad
Baseline	26/08/2021	3	WC	13034215005	Balochistan	Kachi	Rabia Maqbool
Baseline	27/08/2021	2	WC	13043615001	Balochistan	Pishin	Muhammad Munawar
Baseline	27/08/2021	2	WC	13043625003	Balochistan	Pishin	Muhammad Anwar
Baseline	27/08/2021	3	WC	13061115011	Balochistan	Sibi	Mohammad Saud Bugti
Baseline	31/08/2021	1	WC	13013419003	Balochistan	Khuzdar	Noor Din
Baseline	31/08/2021	1	WC	13013929003	Balochistan	Khuzdar	Arshad Aziz
Baseline	31/08/2021	2	WC	13042119002	Balochistan	Killa Abdullah	Sana Ullah
Baseline	28/10/2021	2	WC	13031919041	Balochistan	Nasirabad	Sanaullah
Baseline	28/10/2021	1	WC	13035119002	Balochistan	Sohbatpur	Shafiq Ahmed
Baseline	28/10/2021	1	WC	13035219001	Balochistan	Sohbatpur	Ghulam Haider
Baseline	26/11/2021	1	WC	13031919035	Balochistan	Nasirabad	Mureed
Baseline	26/11/2021	1	WC	13031919038	Balochistan	Nasirabad	Naveed Ahmed
Baseline	27/11/2021	1	WC	13035119001	Balochistan	Sohbatpur	Abdul Bari
Baseline	27/11/2021	3	WC	13072615001	Balochistan	Killa Saifullah	Muhammad Younus
Baseline	27/11/2021	3	WC	13072615002	Balochistan	Killa Saifullah	Mulla Sadiq

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	28/11/2021	1	WC	13034215014	Balochistan	Kachi	Syed Khurshed Shah
Baseline	29/11/2021	3	WC	13015113055	Balochistan	Mastung	Abdul khliq
Baseline	09/03/2022	1	WC	13033911018	Balochistan	Jhal Magsi	Syed Safer Ali Shah
Baseline	11/03/2022	3	WC	13013215003	Balochistan	Khuzdar	Saeed Ahmed
Baseline	22/06/2022	1	WC	13035211021	Balochistan	Sohbatpur	Muhammad Ali
Baseline	23/06/2022	1	WC	13035211024	Balochistan	Sohbatpur	Raheem Dad
Baseline	24/06/2022	1	WC	13035211033	Balochistan	Sohbatpur	Shafi Muhammad
Baseline	25/06/2022	1	WC	13035111008	Balochistan	Sohbatpur	Ms Tayaba
Baseline	30/07/2022	2	WC	13065113020	Balochistan	Ziarat	Naik Muhammad
BLS & Impact	04/12/2023	2	WC	13032111012	Balochistan	Jaffarabad	Amir Ali Sial
BLS & Impact	04/12/2023	1	WC	13041113004	Balochistan	Quetta	Azmeer Bazai
BLS & Impact	04/12/2023	3	WC	13083915001	Balochistan	Barkhan	Anwer Jan
BLS & Impact	05/12/2023	2	WC	13032111013	Balochistan	Jaffarabad	Asif Khan Jamli
BLS & Impact	05/12/2023	3	WC	13083915002	Balochistan	Barkhan	Muhad Yousaf
BLS & Impact	06/12/2023	2	WC	13032111014	Balochistan	Jaffarabad	Faiq Ali
BLS & Impact	06/12/2023	1	WC	13043113021	Balochistan	Pishin	Syed Saleem Shah
BLS & Impact	06/12/2023	3	WC	13083915003	Balochistan	Barkhan	Wadera Taj Muhad
BLS & Impact	07/12/2023	2	WC	13032111015	Balochistan	Jaffarabad	Manzoor Ali Sial
BLS & Impact	07/12/2023	1	WC	13043113022	Balochistan	Pishin	Muhammad Abdullah
BLS & Impact	08/12/2023	1	WC	13043113023	Balochistan	Pishin	Mehmood Khan
BLS & Impact	11/12/2023	2	WC	13033911015	Balochistan	Jhal Magsi	Mushtaq
BLS & Impact	11/12/2023	1	WC	13043113024	Balochistan	Pishin	Dr. Ashrafuddin
BLS & Impact	11/12/2023	3	WC	13063113031	Balochistan	Kohlu	PVC
BLS & Impact	12/12/2023	1	WC	13043113025	Balochistan	Pishin	Oulasmal Khan
BLS & Impact	12/12/2023	3	WC	13063113032	Balochistan	Kohlu	PVC
BLS & Impact	13/12/2023	1	WC	13043113026	Balochistan	Pishin	Ainuddim
BLS & Impact	13/12/2023	3	WC	13063113033	Balochistan	Kohlu	PVC
BLS & Impact	13/12/2023	2	WC	13065213022	Balochistan	Ziarat	Lal Muhammad
BLS & Impact	14/12/2023	1	WC	13043113027	Balochistan	Pishin	Abdul Karam Khan
BLS & Impact	14/12/2023	2	WC	13065213024	Balochistan	Ziarat	Muhammad Ibrahim
BLS & Impact	15/12/2023	1	WC	13043113028	Balochistan	Pishin	Bahuddin
BLS & Impact	18/12/2023	1	WC	13042919001	Balochistan	Killa Abdullah	Muhammad Zaman

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	18/12/2023	2	WC	13062113003	Balochistan	Harnai	Saif ud Din
BLS & Impact	18/12/2023	3	WC	13064113001	Balochistan	Dera Bugti	Amir Jan
BLS & Impact	19/12/2023	1	WC	13042919002	Balochistan	Killa Abdullah	Shmasudeen
BLS & Impact	19/12/2023	2	WC	13062313001	Balochistan	Harnai	Abdul Rasheed
BLS & Impact	19/12/2023	3	WC	13064113002	Balochistan	Dera Bugti	Abdul Sattar
BLS & Impact	20/12/2023	3	WC	13064113003	Balochistan	Dera Bugti	Mir Liaqat Khan
BLS & Impact	21/12/2023	1	WC	13011113050	Balochistan	Kalat	Gull Hassan
BLS & Impact	21/12/2023	3	WC	13064113004	Balochistan	Dera Bugti	Wazir Khan
BLS & Impact	21/12/2023	3	WC	13064113005	Balochistan	Dera Bugti	Ghulam Hussain
BLS & Impact	21/12/2023	2	WC	13082113029	Balochistan	Duki	Saif ud Din
BLS & Impact	22/12/2023	1	WC	13011113053	Balochistan	Kalat	Zaroor Ahmed
BLS & Impact	22/12/2023	2	WC	13082115007	Balochistan	Duki	Jamal Khan
BLS & Impact	26/12/2023	1	WC	13011113054	Balochistan	Kalat	Muhammad Iqbal
BLS & Impact	26/12/2023	1	WC	13011113055	Balochistan	Kalat	Abdul Ghaffar
BLS & Impact	26/12/2023	3	WC	13061113016	Balochistan	Sibi	Malik Noor Muhammad
BLS & Impact	26/12/2023	2	WC	13081113184	Balochistan	Loralai	Lal Mohammed
BLS & Impact	27/12/2023	1	WC	13011113056	Balochistan	Kalat	Ghulam Hyder
BLS & Impact	27/12/2023	1	WC	13011113057	Balochistan	Kalat	Ubaidullah
BLS & Impact	27/12/2023	3	WC	13061113017	Balochistan	Sibi	Abdul Samad
BLS & Impact	27/12/2023	2	WC	13081113185	Balochistan	Loralai	Faiz Mohammed
BLS & Impact	28/12/2023	1	WC	13011113058	Balochistan	Kalat	Saleh Muhammad
BLS & Impact	28/12/2023	1	WC	13011113059	Balochistan	Kalat	Faiz ullah
BLS & Impact	28/12/2023	3	WC	13034213002	Balochistan	Kachi	Muhammad Khair
BLS & Impact	28/12/2023	2	WC	13081113186	Balochistan	Loralai	Manaeer Habib
BLS & Impact	29/12/2023	1	WC	13011113060	Balochistan	Kalat	Siraj
BLS & Impact	29/12/2023	1	WC	13011113061	Balochistan	Kalat	Mehr Ali
BLS & Impact	29/12/2023	3	WC	13034215009	Balochistan	Kachi	Hazar Khan
BLS & Impact	29/12/2023	3	WC	13034215010	Balochistan	Kachi	Liqat Ali
BLS & Impact	29/12/2023	2	WC	13081113187	Balochistan	Loralai	Naqeebululla
BLS & Impact	01/01/2024	1	WC	13013215001	Balochistan	Khuzdar	Khadim Hussain
BLS & Impact	01/01/2024	3	WC	13015113057	Balochistan	Mastung	Obaidullah
BLS & Impact	01/01/2024	2	WC	13081113188	Balochistan	Loralai	Ameenullah

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	02/01/2024	1	WC	13013215002	Balochistan	Khuzdar	Qadir Bakhsh
BLS & Impact	02/01/2024	2	WC	13081113189	Balochistan	Loralai	Asmatullah
BLS & Impact	03/01/2024	1	WC	13013415001	Balochistan	Khuzdar	Hafeezullah
BLS & Impact	03/01/2024	3	WC	13015113058	Balochistan	Mastung	Siraj ullah
BLS & Impact	03/01/2024	2	WC	13081113190	Balochistan	Loralai	Abdul Baseer
BLS & Impact	04/01/2024	1	WC	13013415002	Balochistan	Khuzdar	Abdul Latif
BLS & Impact	04/01/2024	3	WC	13015113062	Balochistan	Mastung	Abdul salam
BLS & Impact	04/01/2024	2	WC	13081113191	Balochistan	Loralai	Abdul Baseer
BLS & Impact	05/01/2024	3	WC	13015113063	Balochistan	Mastung	Muhammad saleem
BLS & Impact	05/01/2024	2	WC	13081113192	Balochistan	Loralai	Sharfuddin
BLS & Impact	08/01/2024	1	WC	13013415003	Balochistan	Khuzdar	Mohammad Shareef
BLS & Impact	08/01/2024	3	WC	13053113055	Balochistan	Nushki	Muhammad Alim
BLS & Impact	08/01/2024	2	WC	13081113193	Balochistan	Loralai	GhazKhani Khan
BLS & Impact	09/01/2024	3	WC	13053113056	Balochistan	Nushki	Manzoor Ahmed
BLS & Impact	09/01/2024	2	WC	13081113194	Balochistan	Loralai	Asmatullah
BLS & Impact	10/01/2024	1	WC	13014113001	Balochistan	Lasbela	Dost Muhammad
BLS & Impact	10/01/2024	3	WC	13053113057	Balochistan	Nushki	Ahmed bakhsh
BLS & Impact	10/01/2024	2	WC	13081113195	Balochistan	Loralai	Abdul Bari
BLS & Impact	11/01/2024	1	WC	13014113002	Balochistan	Lasbela	Ahmed Khan
BLS & Impact	11/01/2024	3	WC	13053113058	Balochistan	Nushki	Abdul Salam
BLS & Impact	11/01/2024	2	WC	13081113196	Balochistan	Loralai	Akhter Mohammed
BLS & Impact	12/01/2024	1	WC	13014113003	Balochistan	Lasbela	Azeem Khan
BLS & Impact	12/01/2024	2	WC	13081113197	Balochistan	Loralai	Abdul Razaq
BLS & Impact	15/01/2024	1	WC	13014113004	Balochistan	Lasbela	Abdul Hafeez
BLS & Impact	15/01/2024	3	WC	13016113018	Balochistan	Surab	Noor Hassan
BLS & Impact	15/01/2024	2	WC	13072113054	Balochistan	Killa Saifullah	Sanaullah
BLS & Impact	16/01/2024	1	WC	13014113006	Balochistan	Lasbela	Abdul Rasheed
BLS & Impact	16/01/2024	3	WC	13016113019	Balochistan	Surab	Sdique
BLS & Impact	16/01/2024	2	WC	13072113055	Balochistan	Killa Saifullah	Hafiz Habib ur Rehman
BLS & Impact	16/01/2024	2	WC	13072113056	Balochistan	Killa Saifullah	Yaqoob Akhunzada
BLS & Impact	17/01/2024	1	WC	13014113007	Balochistan	Lasbela	Alam khan
BLS & Impact	17/01/2024	3	WC	13023115001	Balochistan	Panjgur	Ejaz Ahmed

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	17/01/2024	2	WC	13072113057	Balochistan	Killa Saifullah	Dad Muhammad
BLS & Impact	17/01/2024	2	WC	13072113058	Balochistan	Killa Saifullah	Zainullah
BLS & Impact	18/01/2024	1	WC	13014113008	Balochistan	Lasbela	Abdullah
BLS & Impact	18/01/2024	3	WC	13023215001	Balochistan	Panjgur	Abdul Malik
BLS & Impact	18/01/2024	2	WC	13072113059	Balochistan	Killa Saifullah	Jan Muhammad
BLS & Impact	18/01/2024	2	WC	13072113060	Balochistan	Killa Saifullah	Sami ullah
BLS & Impact	19/01/2024	1	WC	13014113009	Balochistan	Lasbela	Ghulam Rasool
BLS & Impact	19/01/2024	3	WC	13023215002	Balochistan	Panjgur	Dad Rehman
BLS & Impact	19/01/2024	2	WC	13072113061	Balochistan	Killa Saifullah	Muhammad Hasham
BLS & Impact	22/01/2024	1	WC	13014113010	Balochistan	Lasbela	Ahmed Khan
BLS & Impact	22/01/2024	3	WC	13023215003	Balochistan	Panjgur	Imdad Ali
BLS & Impact	22/01/2024	2	WC	13071113063	Balochistan	Zhob	Naseer khan
BLS & Impact	23/01/2024	1	WC	13014113012	Balochistan	Lasbela	Abdul Aziz
BLS & Impact	23/01/2024	3	WC	13023313021	Balochistan	Panjgur	Tariq hussain
BLS & Impact	23/01/2024	2	WC	13071113054	Balochistan	Zhob	Ezat ullah
BLS & Impact	24/01/2024	1	WC	13021913001	Balochistan	Gwadar	Abdul Aziz
BLS & Impact	24/01/2024	3	WC	13023313022	Balochistan	Panjgur	Shah murad
BLS & Impact	24/01/2024	2	WC	13073113022	Balochistan	Sherani	Suliman
BLS & Impact	25/01/2024	1	WC	13021913002	Balochistan	Gwadar	Abdul Ghani
BLS & Impact	25/01/2024	3	WC	13023315001	Balochistan	Panjgur	Abdul Rehman
BLS & Impact	25/01/2024	2	WC	13073113023	Balochistan	Sherani	Dawood Khan
BLS & Impact	26/01/2024	1	WC	13015213013	Balochistan	Kech	Pandok
BLS & Impact	26/01/2024	3	WC	13023315003	Balochistan	Panjgur	Tariq
BLS & Impact	29/01/2024	1	WC	13015213014	Balochistan	Kech	Naseem
BLS & Impact	29/01/2024	3	WC	13054315001	Balochistan	Washuk	Abdul ghayas
BLS & Impact	29/01/2024	2	WC	13084113102	Balochistan	Musakhail	Majnoon
BLS & Impact	30/01/2024	1	WC	13015213015	Balochistan	Kech	Riaz Ahmed
BLS & Impact	30/01/2024	3	WC	13052113025	Balochistan	Kharan	Taj Mohammad
BLS & Impact	30/01/2024	2	WC	13084113103	Balochistan	Musakhail	Malik Nazar Muhammad
BLS & Impact	31/01/2024	1	WC	13015213016	Balochistan	Kech	Basheer Ahmed
BLS & Impact	31/01/2024	3	WC	13052113026	Balochistan	Kharan	Mirza Khan
BLS & Impact	31/01/2024	2	WC	13084113104	Balochistan	Musakhail	Muhammad Hanoor

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	01/02/2024	1	WC	13015213017	Balochistan	Kech	Javid
BLS & Impact	01/02/2024	3	WC	13052113027	Balochistan	Kharan	Zia ul Haq
BLS & Impact	01/02/2024	2	WC	13084113105	Balochistan	Musakhail	Mula Abdal
BLS & Impact	02/02/2024	1	WC	13015213018	Balochistan	Kech	Abdul Waheed
BLS & Impact	02/02/2024	3	WC	13052113028	Balochistan	Kharan	Saeed Ahmed
BLS & Impact	12/02/2024	1	WC	13012113073	Balochistan	Awaran	Abdul Raziq
BLS & Impact	12/02/2024	1	WC	13012113074	Balochistan	Awaran	Akhter Ali
BLS & Impact	12/02/2024	3	WC	13051113037	Balochistan	Chaghi	habib ur rehman
BLS & Impact	12/02/2024	2	WC	13084113106	Balochistan	Musakhail	Niamat Sheikh
BLS & Impact	13/02/2024	1	WC	13012113075	Balochistan	Awaran	Asif Ali
BLS & Impact	13/02/2024	1	WC	13012113076	Balochistan	Awaran	Barakat ali
BLS & Impact	13/02/2024	3	WC	13051113038	Balochistan	Chaghi	Den muhamed
BLS & Impact	13/02/2024	2	WC	13084113107	Balochistan	Musakhail	Paind Khan
BLS & Impact	14/02/2024	1	WC	13012113077	Balochistan	Awaran	Dil Murad
BLS & Impact	14/02/2024	1	WC	13012113078	Balochistan	Awaran	Hatim Ali
BLS & Impact	14/02/2024	3	WC	13051113039	Balochistan	Chaghi	muhamed khair
BLS & Impact	14/02/2024	2	WC	13084113108	Balochistan	Musakhail	Rehmat Gul
BLS & Impact	15/02/2024	1	WC	13012113079	Balochistan	Awaran	Muhammad Baksh
BLS & Impact	15/02/2024	1	WC	13012115008	Balochistan	Awaran	Imam Bakhsh
BLS & Impact	15/02/2024	3	WC	13051113040	Balochistan	Chaghi	malik khuda bakhsh
BLS & Impact	15/02/2024	2	WC	13084113109	Balochistan	Musakhail	Rozi Khan
BLS & Impact	15/02/2024	2	WC	13084113110	Balochistan	Musakhail	Sami ul Haq
BLS & Impact	16/02/2024	2	WC	13084113111	Balochistan	Musakhail	Sarkayi
Gilgit Baltistan (GB) Unit							
BLS & Impact	23/06/2021	1	WC	14032318004	GB	Gilgit	Main Chakarkot Channel Charaquddin Land Gutum to KKH
BLS & Impact	16/01/2023	1	WC	14032118023	GB	Gilgit	Main Nallah To Mustafa House
BLS & Impact	16/01/2023	2	WC	14032118024	GB	Gilgit	Main Channel To Qari Javaid House
BLS & Impact	16/01/2023	3	WC	14032315006	GB	Gilgit	Nallah To Junaid Land Pari
BLS & Impact	16/01/2023	3	WC	14032317003	GB	Gilgit	Kkh To Ahmed Sayed Land Drot
BLS & Impact	17/01/2023	3	WC	14031218030	GB	Ghizer	Gotch Gan Hamuchal Paen Shairqila
BLS & Impact	17/01/2023	2	WC	14034216001	GB	Hunza	Tazeem Channel Gojal
BLS & Impact	17/01/2023	2	WC	14034915006	GB	Hunza	Maliki Dallah Head To Altit Fort Area

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	17/01/2023	1	WC	14035118017	GB	Nagar	Base On Hotel To Yar Mohallah Gulmet
BLS & Impact	17/01/2023	1	WC	14035118018	GB	Nagar	Imam Bargah To Mir Muhammad Land Sharyar
BLS & Impact	18/01/2023	1	WC	14021118019	GB	Astore	Trashing Main Channel
BLS & Impact	18/01/2023	1	WC	14021118020	GB	Astore	Hayat Land
BLS & Impact	18/01/2023	2	WC	14031218031	GB	Ghizer	Intake To Khari Hatoon Near Hasis Bridge
BLS & Impact	18/01/2023	3	WC	14031918020	GB	Ghizer	Akber House To Fida Land Morkha Yaseen
BLS & Impact	18/01/2023	3	WC	14033118012	GB	Ghizer	Qurban House Sadique Land Handarp Polo Ground
BLS & Impact	19/01/2023	1	WC	14022115001	GB	Diamer	Wc From Misar Haji House To Wadan House
BLS & Impact	19/01/2023	1	WC	14022115002	GB	Diamer	Wc From Nallah To Latti Bala
BLS & Impact	19/01/2023	2	WC	14023215002	GB	Diamer	Wc From Nallah To Ghali Dar
BLS & Impact	19/01/2023	3	WC	14023218004	GB	Diamer	Wc At Shiniki Het Goner Farm
BLS & Impact	20/01/2023	2	WC	14014115044	GB	Skardu	Mir Pi Shahma Sermic
BLS & Impact	20/01/2023	3	WC	14014915002	GB	Skardu	Gond Bainsa Bilamik
BLS & Impact	20/01/2023	1	WC	14023218005	GB	Diamer	Niat Nallah To Malkush
BLS & Impact	20/01/2023	1	WC	14023218009	GB	Diamer	Nallah To Khai Botogha
BLS & Impact	23/01/2023	3	WC	14014918005	GB	Skardu	Center Bilamik Roundu From Main Channel To Jingkha
BLS & Impact	23/01/2023	3	WC	14014918006	GB	Skardu	Nang Harka Harpo Bala Roundu From Main Channel To Link Road
BLS & Impact	23/01/2023	2	WC	14014918007	GB	Skardu	Choliskam From Nallah To Road Talu Roundu
BLS & Impact	23/01/2023	2	WC	14014918008	GB	Skardu	Goma Biala Thowar Roundu
BLS & Impact	23/01/2023	1	WC	14014918009	GB	Skardu	Nasaso Yulbu Roundu
BLS & Impact	24/01/2023	2	WC	14013115001	GB	Shigar	Gorey Hrka Ned From Main Cool To Ali Ahmad Plot
BLS & Impact	24/01/2023	3	WC	14013115002	GB	Shigar	Sarfa Khor Dassu Shiger
BLS & Impact	24/01/2023	1	WC	14014915003	GB	Kharmang	Gamba Drong Paari From Community Hall Muallah Mishyari
BLS & Impact	24/01/2023	1	WC	14014915004	GB	Kharmang	Chenger Susithang From Main Channel To Link Road
BLS & Impact	25/01/2023	2	WC	14011115004	GB	Ghanche	Gharis Khaplu
BLS & Impact	25/01/2023	2	WC	14011115005	GB	Ghanche	Bargani Ranthaq To Sargaib Rzing Khaplu
BLS & Impact	25/01/2023	1	WC	14013118001	GB	Shigar	Banpi Yarkhor Tissar From Nallah To Haider Plot
BLS & Impact	25/01/2023	1	WC	14013118002	GB	Shigar	Masjid Hrka Kayo Gulabpur From Main Nallah To Main Channel
BLS & Impact	26/01/2023	1	WC	14011115007	GB	Ghanche	Muldumar Rzing To Albowa Bagh Khaplu
BLS & Impact	26/01/2023	1	WC	14011115008	GB	Ghanche	Oli Harkha Thasqong
BLS & Impact	26/01/2023	2	WC	14011115009	GB	Ghanche	Ayub Land To Kacho Land Barah
BLS & Impact	26/01/2023	2	WC	14011115010	GB	Ghanche	Xoksi Harka Barah Pain

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Azad Jammu & Kashmir (AJK) Unit							
Baseline	17/06/2021	1	WC	15011125011	AJK	Muzaffarabad	Mera Dopatta
Baseline	18/06/2021	1	WC	15033112046	AJK	Mirpur	Lehri-6
Baseline	19/06/2021	1	WC	15033112064	AJK	Mirpur	New Sunian
Baseline	21/06/2021	1	WC	15011118006	AJK	Muzaffarabad	Dhani Mai Sahiba
Baseline	05/07/2021	1	WC	15011125014	AJK	Muzaffarabad	Central Palhoter
Baseline	28/07/2021	1	WC	15033112014	AJK	Mirpur	Akbarabad
Baseline	06/08/2021	1	WC	15011125002	AJK	Muzaffarabad	Ghorsi Pine
Baseline	06/08/2021	1	WC	15011235001	AJK	Muzaffarabad	Palla To Karshan
Baseline	21/02/2022	1	WC	15033111002	AJK	Mirpur	Daramir Shah Sehnse
Baseline	22/02/2022	1	WC	15031212030	AJK	Bhimber	Nawan Chak
Baseline	22/02/2022	1	WC	15033112033	AJK	Mirpur	Mohri
Baseline	23/02/2022	1	WC	15031312003	AJK	Bhimber	Dara Bandi
Baseline	28/03/2022	1	WC	15031112015	AJK	Bhimber	Dhandar Kalan
Baseline	28/03/2022	1	WC	15031212005	AJK	Bhimber	Khokhran Gujran-1
Baseline	28/05/2022	1	WC	15031212001	AJK	Bhimber	Khokhran Gujran-2
Baseline	09/06/2022	1	WC	15032415006	AJK	Kotli	Jandrot Kathar Zaireen
Baseline	10/06/2022	1	WC	15032415008	AJK	Kotli	Maira Nakyal
Baseline	08/08/2022	1	WC	15031112007	AJK	Bhimber	Machia-2
Baseline	08/08/2022	1	WC	15031112023	AJK	Bhimber	Kachi 2
Baseline	07/09/2022	1	WC	15012125001	AJK	Jhelum	Goharabad
Baseline	07/09/2022	1	WC	15012125003	AJK	Jhelum	Kukarwara
Baseline	20/10/2022	1	WC	15021215005	AJK	Bagh	Kalsota Nathgran
Baseline	21/12/2022	1	WC	15021115008	AJK	Bagh	Tach Banipassri
Baseline	16/01/2023	1	WC	15033112018	AJK	Mirpur	Dalyala
Baseline	16/01/2023	1	WC	15033112054	AJK	Mirpur	Chapran-2
Baseline	17/01/2023	1	WC	15033112068	AJK	Mirpur	Raipur
Baseline	18/01/2023	1	WC	15031112035	AJK	Bhimber	Sokasan
Baseline	18/01/2023	1	WC	15031212006	AJK	Bhimber	Malkay-4
Baseline	26/01/2023	1	WC	15023116001	AJK	Poonch	Lower Dhothan
Baseline	26/01/2023	1	WC	15023328001	AJK	Poonch	Upper Sawa
Baseline	26/01/2023	1	WC	15024215001	AJK	Sudhnoti	Tarnoti To Dhok

Survey Type	Survey Date	Team. #	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	13/02/2023	1	WC	15012318001	AJK	Jhelum	Chatkari
Baseline	14/02/2023	1	WC	15013125005	AJK	Neelum	Kanoor To Lawat Khawaja Seri
Baseline	14/02/2023	1	WC	15013218002	AJK	Neelum	Shesha Pahar To Kiyani Muhalla
Baseline	15/02/2023	1	WC	15011215005	AJK	Muzaffarabad	Meldi Kasi To Parla
Baseline	15/02/2023	1	WC	15011218001	AJK	Muzaffarabad	Doba Upper Phagla
BLS & Impact	28/05/2024	1	WC	15013115005	AJK	Neelum	Salkhala To Darbagu
BLS & Impact	28/05/2024	1	WC	15013118011	AJK	Neelum	Dhakki Nalla To Zyarat Muhalla Karka
BLS & Impact	29/05/2024	1	WC	15022115004	AJK	Haveli	Pallan Chaudriyan
Islamabad Capital Territory (ICT) Unit							
Baseline	22/06/2021	1	WC	16110116002	ICT	ICT	Misbahuddin Chohan
Baseline	23/06/2021	1	WC	16110116020	ICT	ICT	Sher Bahadar Zada Khan
Baseline	16/07/2021	1	WC	16110116012	ICT	ICT	Syed Zubair Hussain Shah
Baseline	16/07/2021	1	WC	16110116019	ICT	ICT	Omer Ali Khan
Baseline	04/08/2021	1	WC	16110116008	ICT	ICT	Mohamad Hakeem Khan
Baseline	18/08/2022	1	WC	16110116011	ICT	ICT	Ch.Khanzada Khan
Baseline	18/08/2022	1	WC	16110116017	ICT	ICT	Muhammad Amjad Khan

ANNEX-C: WATER STORAGE TANKS – ZONE WISE BASELINE FIELD SCHEDULE

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Punjab Zone							
Baseline	15/06/2021	1	WST	21012112001	Punjab	Kasur	M.Asghar Ali
Baseline	15/06/2021	2	WST	21051412001	Punjab	Gujranwala	Rana Jaleel:Naiq Muhammad
Baseline	15/06/2021	1	WST	21103314038	Punjab	Chakwal	Rizwan Haider:Malik Muhammad Afzal
Baseline	16/06/2021	1	WST	21103314025	Punjab	Chakwal	Muhammad Khan:Taj Muhammad
Baseline	17/06/2021	1	WST	21012213001	Punjab	Kasur	Arif Masood Butt
Baseline	17/06/2021	3	WST	21093513001	Punjab	Muzaffargarh	Muhammad Tanveer Rasheed:Sheikh M. Rashid
Baseline	18/06/2021	3	WST	21093513002	Punjab	Muzaffargarh	Waheed Ahmad Bhatti:Ahmad Bakhsh Bhatti
Baseline	21/06/2021	2	WST	21061112001	Punjab	Gujrat	Shamim Haider:Sultan Ali
Baseline	22/06/2021	1	WST	21032112003	Punjab	Okara	Rao Muhammad Farooq Khan:Abdul Majeed Khan
Baseline	26/06/2021	1	WST	21102316007	Punjab	Attock	Zeeshan Ali Khan:Hairat Ali Khan
Baseline	16/07/2021	2	WST	21014112002	Punjab	Sheikhupura	Habib-Ur-Rehman Hashmi:Ali Hassan
Baseline	16/07/2021	1	WST	21031114002	Punjab	Sahiwal	Younis Gill:Khursheed Alam Gill
Baseline	16/07/2021	3	WST	21071114001	Punjab	Multan	Amir Sohail:Malik Muhammad Aslam
Baseline	16/07/2021	3	WST	21071114002	Punjab	Khanewal	Muhammad Hamid Nawaz:Muhammad Nawaz Malik
Baseline	27/07/2021	1	WST	21102116002	Punjab	Attock	Malik Rizwan:Sikander Khan
Baseline	27/07/2021	1	WST	21102316002	Punjab	Attock	Asad Ali Khan:Muhammad Amir Khan
Baseline	28/07/2021	1	WST	21102112014	Punjab	Attock	Nisar Bibi:W/O Muhammad Aslam
Baseline	28/07/2021	1	WST	21102316003	Punjab	Attock	Saqib Javed:Muhammad Javed Khan
Baseline	03/08/2021	2	WST	21062213003	Punjab	Hafizabad	Muhammad Afzal:Bashir Ahmad
Baseline	03/08/2021	3	WST	21071312005	Punjab	Multan	Muhammad Irfan:Muhammad Ismail
Baseline	04/08/2021	2	WST	21062113001	Punjab	Hafizabad	Ghanzfar Ghayas:Muhammad Mohsin
Baseline	04/08/2021	3	WST	21071313001	Punjab	Multan	Khawaja Maqbool Mustafa:Khawaja Muhammad Yousaf
Baseline	05/08/2021	1	WST	21013113001	Punjab	Nankana Sahib	Khalil-Ur-Rehman:Ali Ahmad
Baseline	05/08/2021	1	WST	21013212001	Punjab	Nankana Sahib	Azra Bibi:W/O Anwar Sajid
Baseline	05/08/2021	1	WST	21014112001	Punjab	Sheikhupura	Ehsan Elahi Virk:Arif Hussain
Baseline	05/08/2021	2	WST	21062213005	Punjab	Hafizabad	Nusrat Tahira:W/O Fyaz Ahmad
Baseline	05/08/2021	2	WST	21063312001	Punjab	Mandi Bahauddin	Khalid Pervaiz:Rasheed Ahmad
Baseline	05/08/2021	2	WST	21063312002	Punjab	Mandi Bahauddin	Zubaida Bibi:Ahmad
Baseline	05/08/2021	3	WST	21071312003	Punjab	Multan	Muhammad Afzaal:Muhammad Iqbal

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	23/08/2021	1	WST	21101412004	Punjab	Rawalpindi	Raja Zulfiqar Ali:Raja G.Asghar
Baseline	20/02/2022	1	WST	21021412002	Punjab	Faisalabad	Aftab Iftikhar:Iftikhar Ali
Baseline	05/03/2022	2	WST	21041814002	Punjab	Sargodha	Hassan Sultan:Irshad Ahmad
Baseline	05/03/2022	2	WST	21041814008	Punjab	Sargodha	Muneer Ahmed:Muhammad Deen
Baseline	08/05/2022	3	WST	21071412003	Punjab	Multan	Malik Muhammad Afzal:Malik Mehmood
Baseline	25/05/2022	2	WST	21091212004	Punjab	Dera Ghazi Khan	M. Babar Ashraf:Muhammad Ashraf
Baseline	25/05/2022	2	WST	21091214001	Punjab	Dera Ghazi Khan	Muhammad Sharif:Muhammad Ibrahim
Baseline	25/05/2022	2	WST	21091214002	Punjab	Dera Ghazi Khan	Muhammad Zareef:Muhammad Ibrahim
Baseline	03/06/2022	3	WST	21082213001	Punjab	Bahawalnagar	Abdul Waheed:M.Sharif
Baseline	03/06/2022	3	WST	21082513002	Punjab	Bahawalnagar	M.Rizwan Anjum:Ahsaan Ul Haq
Baseline	03/06/2022	3	WST	21082513003	Punjab	Bahawalnagar	Saif Ullah.Rahmar Ali
Baseline	15/06/2022	3	WST	21042112001	Punjab	Bhakkar	Muhammad Shahid:Mushtaq Ahmad
Baseline	16/06/2022	3	WST	21041412003	Punjab	Bhakkar	Mian Rehmat Ullah:Ghulam Mustafa
Baseline	16/06/2022	3	WST	21043314006	Punjab	Khushab	Syed Jaffar Abbas:Syed Farukh Abbas
Baseline	17/06/2022	3	WST	21042312001	Punjab	Bhakkar	Ahmad Nawaz:Jindu
Baseline	18/06/2022	3	WST	21042412008	Punjab	Bhakkar	Muhammad Riaz:Muhammad Rafiq
Baseline	18/06/2022	3	WST	21042412009	Punjab	Bhakkar	Nazeer Ahmad:Muhammad Sardar
Baseline	21/06/2022	1	WST	21101412007	Punjab	Rawalpindi	Zameer Hussain:Abad Ali
Baseline	23/06/2022	3	WST	21073112002	Punjab	Lodhran	Muhammad Arif:Khoshi Muhamad
Baseline	28/06/2022	1	WST	21104212008	Punjab	Jhelum	Muhammad Abbas:Jahan Muhammad
Baseline	03/07/2022	2	WST	21083412001	Punjab	Rahim Yar Khan	Abdul Ghaffar Khan Abbasi:Aziz-Ur-Rehman
Baseline	03/07/2022	2	WST	21083412002	Punjab	Rahim Yar Khan	Abuzar:Abdul Kareem
Baseline	10/10/2022	3	WST	21081312004	Punjab	Bahawalpur	Muhammad Parvaiz:Ch. Muhammad Yousuf
Baseline	26/12/2022	2	WST	21092312003	Punjab	Layyah	Muhammad Aslam:Ameer Ud Din
Baseline	04/01/2023	1	WST	21024313002	Punjab	Toba Tek Singh	Ch.Muhammad Ali:Safdar Ali
Baseline	05/01/2023	1	WST	21024113001	Punjab	Toba Tek Singh	Farhan Akbar:Muhammad Akbar
Baseline	09/01/2023	1	WST	21023210005	Punjab	Jhang	Tahir Sabtai:Ghulam Jaffer Khan
Baseline	16/01/2023	1	WST	21102112009	Punjab	Attock	Mian Muhammad Raza:Main Altaf Hussain
Baseline	18/01/2023	1	WST	21101612008	Punjab	Rawalpindi	Muhammad Shamroz:M. Ferooz
Baseline	18/01/2023	1	WST	21101614001	Punjab	Rawalpindi	Tariq Mehmood:Fazal Khan
Baseline	19/01/2023	1	WST	21033112003	Punjab	Pakpattan	M. Tayyab:Muhammad Anwer
BLS & Impact	04/12/2023	1	WST	21011112001	Punjab	Lahore	Nisar Ahmad Dogar:Mukhtar Ahmad

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	04/12/2023	4	WST	21103114001	Punjab	Chakwal	Arshed Mehmood:Maqbool Ahmed
BLS & Impact	04/12/2023	4	WST	21103314019	Punjab	Chakwal	Muhammad Haider Ameen:Muhammad Hanif
BLS & Impact	05/12/2023	4	WST	21103116018	Punjab	Chakwal	Saleem Iqbal:Muhammad Zafar Khan
BLS & Impact	05/12/2023	4	WST	21105114001	Punjab	Chakwal	Abdul Sattar Khan:Sultan Khan
BLS & Impact	06/12/2023	4	WST	21103214002	Punjab	Chakwal	Muhammad Imtiaz:Malik Munsif Khan
BLS & Impact	07/12/2023	4	WST	21104112005	Punjab	Jhelum	Ejaz Ahmed:Muhammad Ayub
BLS & Impact	12/12/2023	1	WST	21022312005	Punjab	Chiniot	Zafer Iqbal:M. Ali
BLS & Impact	12/12/2023	2	WST	21094113003	Punjab	Rajanpur	Syed Aftab Ghous Gilaani:Syed Ghous Gillani
BLS & Impact	14/12/2023	1	WST	21024313001	Punjab	Toba Tek Singh	Abdul Razzaq:Siraj Din
BLS & Impact	15/12/2023	1	WST	21023214001	Punjab	Jhang	Ameer Anwar Khan:Mazhar Hussain Khan
BLS & Impact	18/12/2023	1	WST	21021412005	Punjab	Faisalabad	Hafiz Saqib Nawab:Nawab Khalid
BLS & Impact	19/12/2023	2	WST	21083113007	Punjab	Rahim Yar Khan	Asghar Ali:Mardan Ali
BLS & Impact	20/12/2023	2	WST	21083212001	Punjab	Rahim Yar Khan	Dawood Shoukat:Shoukat Ali Shakoori
BLS & Impact	01/01/2024	1	WST	21043112002	Punjab	Khushab	Kausar Naseem:Hamid Raza
BLS & Impact	11/01/2024	1	WST	21044213001	Punjab	Mianwali	Muhammad Abdul Jabbar Khan:Muhammad Abdul Ghaffar Khan
BLS & Impact	29/01/2024	1	WST	21072413004	Punjab	Khanewal	Muhammad Zia Ul Haq:Khursheed Ahmad
BLS & Impact	14/02/2024	2	WST	21074114001	Punjab	Vehari	Muhammad Nasir:Muhammad Ramzan
BLS & Impact	15/02/2024	2	WST	21061114005	Punjab	Gujrat	Salman Ahmed:Saif Ullah
BLS & Impact	16/02/2024	2	WST	21053112002	Punjab	Sialkot	Itikhar Ahmed:Muhammad Latif
Khyber Pakhtunkhwa (KP) Zone							
Baseline	17/06/2021	1	WST	22073232001	KP	Nowshera	Rahaj Gul
Baseline	21/06/2021	2	WST	22022132009	KP	Tank	Mehtab Ahmad
Baseline	21/06/2021	3	WST	22033132002	KP	Haripur	Nazakat Khan
Baseline	21/06/2021	3	WST	22033232011	KP	Haripur	Abid Khan
Baseline	21/06/2021	1	WST	22072332003	KP	Charsadda	Noshad
Baseline	22/06/2021	2	WST	22012132021	KP	Lakki Marwat	Ghulam Muhammad
Baseline	23/06/2022	1	WST	22073232017	KP	Nowshera	Irshad Ali
Baseline	24/06/2022	1	WST	22073132015	KP	Nowshera	Abdullah
Baseline	27/06/2022	1	WST	22073132028	KP	Nowshera	Zia Ullah Wst
Baseline	04/07/2022	1	WST	22071132040	KP	Peshawar	Ibrahim Khan
Baseline	04/07/2022	1	WST	22071132041	KP	Peshawar	Afaq Ahmad
Baseline	05/07/2022	2	WST	22021132018	KP	Dera Ismail Khan	Ikram Ullah Tw Wst

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	05/07/2022	1	WST	22071132011	KP	Peshawar	Muhammad Usman
Baseline	05/07/2022	1	WST	22071132039	KP	Peshawar	Zahir Ul Amin
Baseline	28/07/2022	2	WST	22021332004	KP	Dera Ismail Khan	Umar Ameen Tw Wst
Baseline	30/07/2022	2	WST	22021432049	KP	Dera Ismail Khan	Fatima Begam
Baseline	02/08/2022	3	WST	22033132010	KP	Haripur	Ahsan Raza
Baseline	02/08/2022	3	WST	22033132012	KP	Haripur	Muhammad Zaman Khan
Baseline	03/08/2022	2	WST	22021342001	KP	Dera Ismail Khan	Javed Anwar Khan
Baseline	03/08/2022	2	WST	22021432001	KP	Dera Ismail Khan	Mumtaz
Baseline	03/08/2022	3	WST	22033132006	KP	Haripur	Khani Zaman
Baseline	04/08/2022	2	WST	22021432044	KP	Dera Ismail Khan	Saif Ullah Tw Wst
Baseline	04/08/2022	2	WST	22021432045	KP	Dera Ismail Khan	Ameer Asfand Yar
Baseline	04/08/2022	2	WST	22021432046	KP	Dera Ismail Khan	Abdul Majeed Tw Wst
Baseline	07/12/2022	3	WST	22036135009	KP	Mansehra	Saleem Khan Thakra Wst
Baseline	08/12/2022	3	WST	22036234001	KP	Mansehra	Saqib Sherazi
Baseline	09/12/2022	3	WST	22036235006	KP	Mansehra	Arshad Mehmood Wst
Baseline	13/12/2022	3	WST	22036335002	KP	Mansehra	Kashtra Wst
Baseline	21/12/2022	1	WST	22061132005	KP	Mardan	Ahmad Ali
Baseline	26/12/2022	1	WST	22073232002	KP	Nowshera	Sawabuddin
Baseline	26/12/2022	1	WST	22073232003	KP	Nowshera	Wajahat Khan
Baseline	27/12/2022	1	WST	22073132002	KP	Nowshera	Iftikhar
Baseline	28/12/2022	1	WST	22073332004	KP	Nowshera	Malook Khan
Baseline	03/01/2023	1	WST	22071132028	KP	Peshawar	Aqeel Afzal
Baseline	04/01/2023	3	WST	22031147001	KP	Abbottabad	Hanif Awan
Baseline	05/01/2023	3	WST	22032147001	KP	Battagram	Shamalai
Baseline	05/01/2023	1	WST	22071132005	KP	Peshawar	Aziz Khan
Baseline	06/01/2023	1	WST	22071132006	KP	Peshawar	Muhammad Uzair
Baseline	10/01/2023	2	WST	22021132001	KP	Dera Ismail Khan	Abdul Qayum
Baseline	10/01/2023	1	WST	22062232001	KP	Swabi	Mazhar Ali
Baseline	13/01/2023	2	WST	22021432047	KP	Dera Ismail Khan	Shafqat Ullah Tw Wst
Baseline	17/01/2023	1	WST	22101337001	KP	Khyber	Junaid
Baseline	24/01/2023	1	WST	22052232006	KP	Buner	Wst Mursaleen Shah
Baseline	26/01/2023	1	WST	22052232007	KP	Buner	Wst Rashid Ahmad

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	08/02/2023	2	WST	22011132001	KP	Bannu	Ihsanu Llah Khan
Baseline	10/02/2023	1	WST	22056234017	KP	Swat	Abdur Raziq
Baseline	10/02/2023	1	WST	22056234022	KP	Swat	Taj Mohammad
Baseline	10/02/2023	1	WST	22056244002	KP	Swat	Nasar
Baseline	13/02/2023	1	WST	22054132008	KP	Lower Dir	Sajjad Khan
Baseline	14/02/2023	1	WST	22056234001	KP	Swat	Gul Roze
Baseline	15/02/2023	2	WST	22043332001	KP	Karak	Mir Wali
Baseline	15/02/2023	2	WST	22043332007	KP	Karak	Adnan
Baseline	16/02/2023	1	WST	22051332003	KP	Malakand	Shakeel Ahmed
Baseline	20/02/2023	1	WST	22055134002	KP	Shangla	Fazal Khuda
Baseline	21/02/2023	1	WST	22055134001	KP	Shangla	Intikhab Alam Wst
Baseline	22/02/2023	1	WST	22057144002	KP	Upper Dir	Tangai Bala
BLS & Impact	01/12/2023	1	WST	22041132004	KP	Kohat	Yousaf Hussain W.S.T
BLS & Impact	06/12/2023	2	WST	22061132006	KP	Mardan	Mohd Saeed
BLS & Impact	06/12/2023	2	WST	22061132016	KP	Mardan	Mohd Anwar
BLS & Impact	07/12/2023	1	WST	22043332022	KP	Karak	Bashir Zaman
BLS & Impact	08/12/2023	1	WST	22043332025	KP	Karak	Shehryar
BLS & Impact	11/12/2023	2	WST	22053144002	KP	Chitral	Muhibullah
BLS & Impact	13/12/2023	1	WST	22012232007	KP	Lakki Marwat	Kifayat Ullah
BLS & Impact	18/12/2023	1	WST	22022132022	KP	Tank	Khan Wali
BLS & Impact	19/12/2023	2	WST	22057644020	KP	Upper Dir	Mano Tall Ghazikot
BLS & Impact	20/12/2023	2	WST	22057644021	KP	Upper Dir	Barcham Sail Kass
BLS & Impact	22/12/2023	1	WST	22101132010	KP	Khyber	Khan Amin
BLS & Impact	27/12/2023	1	WST	22091232007	KP	Lower Mohmand	Bakht Zada
BLS & Impact	27/12/2023	1	WST	22091232008	KP	Lower Mohmand	Yaseen Khan
BLS & Impact	28/12/2023	1	WST	22091232009	KP	Lower Mohmand	Syed Badshah
BLS & Impact	29/12/2023	1	WST	22092232038	KP	Upper Mohmand	Muhammad Ullah
BLS & Impact	29/12/2023	1	WST	22092232044	KP	Upper Mohmand	Jamal Shah
BLS & Impact	01/01/2024	1	WST	22092232046	KP	Upper Mohmand	Habib Syed
BLS & Impact	03/01/2024	1	WST	22038434001	KP	Upper Kohistan	Mir Alam
BLS & Impact	04/01/2024	1	WST	22056234007	KP	Swat	Said Umar
BLS & Impact	05/01/2024	1	WST	22056234008	KP	Swat	Dawood

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	08/01/2024	1	WST	22056234009	KP	Swat	Gul Sher
BLS & Impact	09/01/2024	1	WST	22056234010	KP	Swat	Muqadar
BLS & Impact	11/01/2024	2	WST	22051332011	KP	Malakand	Atta Ullah
Balochistan Zone							
Baseline	16/06/2021	2	WST	23015259003	Balochistan	Mastung	Abdul Samad
Baseline	16/06/2021	2	WST	23015259017	Balochistan	Mastung	Muhammad Salman
Baseline	16/06/2021	3	WST	23041752012	Balochistan	Quetta	Abdul Majeed
Baseline	16/06/2021	3	WST	23041752021	Balochistan	Quetta	Waseem Mullah Khan
Baseline	17/06/2021	3	WST	23041552006	Balochistan	Quetta	Ahmed Yar
Baseline	17/06/2021	3	WST	23041552007	Balochistan	Quetta	Watan Yar
Baseline	18/06/2021	2	WST	23042959002	Balochistan	Killa Abdullah	Abdul Qahar
Baseline	18/06/2021	3	WST	23043152012	Balochistan	Pishin	Ainudeen
Baseline	18/06/2021	3	WST	23043959001	Balochistan	Pishin	Haji Abdul Manan
Baseline	19/06/2021	3	WST	23043152044	Balochistan	Pishin	Mohammad Yaseen
Baseline	19/06/2021	3	WST	23043152051	Balochistan	Pishin	Qari Mohammad Younas
Baseline	21/06/2021	3	WST	23011152008	Balochistan	Kalat	Ghulam Raza
Baseline	21/06/2021	3	WST	23011439007	Balochistan	Kalat	Muhammad Yousaf
Baseline	21/06/2021	3	WST	23011452010	Balochistan	Kalat	Ghulam Mustafa
Baseline	21/06/2021	1	WST	23031252002	Balochistan	Nasirabad	Javid Ahmed
Baseline	21/06/2021	1	WST	23031352003	Balochistan	Nasirabad	Abdul Rehman
Baseline	21/06/2021	2	WST	23072152021	Balochistan	Killa Saifullah	Mr. Abdul Rasheed
Baseline	22/06/2021	1	WST	23031352001	Balochistan	Nasirabad	Fareed Khan
Baseline	22/06/2021	1	WST	23031352002	Balochistan	Nasirabad	Muhammad Din
Baseline	22/06/2021	2	WST	23081152012	Balochistan	Loralai	Allauddin
Baseline	22/06/2021	2	WST	23081152022	Balochistan	Loralai	Mazakar Habib
Baseline	29/07/2021	3	WST	23053152016	Balochistan	Nushki	Habib Ur Rehman
Baseline	30/07/2021	3	WST	23065139001	Balochistan	Ziarat	Malik Abdul Ghaffar
Baseline	02/08/2021	3	WST	23071139004	Balochistan	Zhob	Haji Akram
Baseline	02/08/2021	2	WST	23073939001	Balochistan	Sherani	Malak Mir Adam
Baseline	02/08/2021	1	WST	23084152005	Balochistan	Musakhel	Dawod Khan
Baseline	03/08/2021	2	WST	23073939002	Balochistan	Sherani	Rahmat Ullah
Baseline	08/08/2021	3	WST	23061139005	Balochistan	Sibi	Muhammad Saud Bugti

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	24/08/2021	1	WST	23015139018	Balochistan	Mastung	Rehmat Khan
Baseline	24/08/2021	3	WST	23041959004	Balochistan	Quetta	Ghulam Mustafa
Baseline	25/08/2021	1	WST	23011139006	Balochistan	Kalat	Muhammad Saleem
Baseline	25/08/2021	3	WST	23034239005	Balochistan	Kachi	Muhammad Mushtaq
Baseline	26/08/2021	3	WST	23061139002	Balochistan	Sibi	Haroon Ur Rasheed Luni
Baseline	26/08/2021	3	WST	23061139004	Balochistan	Sibi	Mazar Khan
Baseline	27/08/2021	1	WST	23013259001	Balochistan	Khuzdar	Abdul Haq
Baseline	27/08/2021	1	WST	23013454014	Balochistan	Khuzdar	Abdul Razzaq
Baseline	27/08/2021	2	WST	23041152010	Balochistan	Killa Abdullah	Abdul Khalil
Baseline	25/10/2021	3	WST	23041652001	Balochistan	Quetta	Muhammad Anwar
Baseline	25/10/2021	3	WST	23041852007	Balochistan	Quetta	Saleh Muhammad
Baseline	08/03/2022	3	WST	23013939017	Balochistan	Khuzdar	Mujeeb Ur Rehman
Baseline	08/03/2022	3	WST	23013954001	Balochistan	Khuzdar	Ali Akber
Baseline	09/03/2022	3	WST	23013454003	Balochistan	Khuzdar	Habib Ur Rehman
Baseline	09/03/2022	3	WST	23013459001	Balochistan	Khuzdar	Gul Mohammad
Baseline	09/03/2022	2	WST	23033939007	Balochistan	Jhal Maghi	Syed Safdar Ali Shah
Baseline	10/03/2022	1	WST	23033959006	Balochistan	Jhal Maghi	Ghulam Hussain
Baseline	10/03/2022	1	WST	23033959007	Balochistan	Jhal Maghi	Haji Abdul Rasheed
Baseline	10/03/2022	3	WST	23033959010	Balochistan	Jhal Maghi	Jhan Zaib
Baseline	11/03/2022	1	WST	23034252021	Balochistan	Kachi	Kareem Baksh
Baseline	11/03/2022	1	WST	23034252022	Balochistan	Kachi	Khuda Baksh
Baseline	14/03/2022	3	WST	23013154001	Balochistan	Khuzdar	Fareed Ahmed
Baseline	14/03/2022	1	WST	23034252002	Balochistan	Kachi	Abdul Nabi
Baseline	14/03/2022	1	WST	23034252043	Balochistan	Kachi	Muneer Ahmed
Baseline	15/03/2022	1	WST	23034252029	Balochistan	Kachi	Mir Mohammad Baksh
Baseline	15/03/2022	1	WST	23034252042	Balochistan	Kachi	Mukthyar Ahmeed
Baseline	16/03/2022	3	WST	23034252032	Balochistan	Kachi	Mohim Khan
Baseline	16/03/2022	3	WST	23034252048	Balochistan	Kachi	Rasheed Zaman
Baseline	16/03/2022	1	WST	23043152035	Balochistan	Pishin	Malak Ahmed Khan
Baseline	18/04/2022	3	WST	23041652006	Balochistan	Quetta	Abdul Quddus
Baseline	19/04/2022	1	WST	23031752002	Balochistan	Nasirabad	Sanaullah
Baseline	19/04/2022	2	WST	23041552001	Balochistan	Quetta	Faqir Muhammad

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Baseline	22/06/2022	3	WST	23015252007	Balochistan	Mastung	Shaib Khan
Baseline	22/06/2022	1	WST	23015352001	Balochistan	Mastung	Abdul Baqi
Baseline	22/06/2022	2	WST	23015959038	Balochistan	Mastung	Qudrat Ullah
Baseline	23/06/2022	3	WST	23043152007	Balochistan	Pishin	Abdul Qadeer
Baseline	23/06/2022	3	WST	23043152037	Balochistan	Pishin	Malak Habib Ur Rehman
Baseline	23/06/2022	3	WST	23043852001	Balochistan	Pishin	Ameenullah
Baseline	27/06/2022	2	WST	23065152001	Balochistan	Ziarat	Arifullah
Baseline	27/06/2022	2	WST	23065152006	Balochistan	Ziarat	Naseebullah
Baseline	27/06/2022	3	WST	23065152007	Balochistan	Ziarat	Noor Muhammad
Baseline	28/06/2022	2	WST	23041752004	Balochistan	Quetta	Haji Amanullah
Baseline	28/06/2022	2	WST	23041752007	Balochistan	Quetta	Abdul Hameed
Baseline	19/07/2022	2	WST	23042439001	Balochistan	Quetta	Abdul Khaliq
Baseline	19/07/2022	3	WST	23072152004	Balochistan	Killa Saifullah	Abdul Wahab
Baseline	19/07/2022	3	WST	23072152052	Balochistan	Killa Saifullah	Shamsu-Ur Rehman
Baseline	20/07/2022	2	WST	23041152008	Balochistan	Quetta	Zafar ullah
Baseline	20/07/2022	2	WST	23041752019	Balochistan	Quetta	Saifullah
Baseline	20/07/2022	3	WST	23072652034	Balochistan	Killa Saifullah	Muhammad Rahim
Baseline	21/07/2022	2	WST	23015252001	Balochistan	Mastung	Abdul Samad
Baseline	21/07/2022	2	WST	23015259013	Balochistan	Mastung	Mohammad Alim
Baseline	21/07/2022	3	WST	23081152007	Balochistan	Loralai	Abdul Mateen
Baseline	22/07/2022	2	WST	23081152006	Balochistan	Loralai	Abdul Jalil
Baseline	22/07/2022	2	WST	23081152026	Balochistan	Loralai	Noorullah
Baseline	22/07/2022	3	WST	23081152066	Balochistan	Loralai	A Ghafar
Baseline	25/07/2022	1	WST	23031251001	Balochistan	Nasirabad	Allah Dina
Baseline	01/08/2022	2	WST	23081152004	Balochistan	Loralai	Abdul Hadi
Baseline	25/08/2022	1	WST	23034239004	Balochistan	Kachi	Imran Khan
Baseline	25/08/2022	2	WST	23043739002	Balochistan	Pishin	Haji Alam Khan
Baseline	19/10/2022	2	WST	23041859002	Balochistan	Quetta	Muhammad Haroon
BLS & Impact	04/12/2023	2	WST	23032252009	Balochistan	Jaffarabad	Mando Khan
BLS & Impact	04/12/2023	3	WST	23083152001	Balochistan	Barkhan	Abdul Haleem
BLS & Impact	05/12/2023	3	WST	23083152002	Balochistan	Barkhan	Adam Khan
BLS & Impact	06/12/2023	3	WST	23083152003	Balochistan	Barkhan	Ahmed

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	11/12/2023	3	WST	23063132002	Balochistan	Kohlu	Umer khan
BLS & Impact	12/12/2023	3	WST	23063132003	Balochistan	Kohlu	Dad Ali
BLS & Impact	18/12/2023	1	WST	23042959028	Balochistan	Killa Abdullah	Saif-U-Din
BLS & Impact	18/12/2023	2	WST	23062959008	Balochistan	Harnai	Naseer Ahmed
BLS & Impact	18/12/2023	3	WST	23064152002	Balochistan	Dera Bugti	Barket Ali
BLS & Impact	19/12/2023	3	WST	23064352017	Balochistan	Dera Bugti	Mohammad Javed
BLS & Impact	21/12/2023	1	WST	23011959057	Balochistan	Kalat	Shair Mohammad
BLS & Impact	21/12/2023	2	WST	23082152007	Balochistan	Duki	Atta Muhammad
BLS & Impact	22/12/2023	1	WST	23011959058	Balochistan	Kalat	Shambey Khan
BLS & Impact	22/12/2023	3	WST	23035252004	Balochistan	Sohbatpur	Sikandar Ali
BLS & Impact	22/12/2023	2	WST	23082152021	Balochistan	Duki	Salah Ud Din
BLS & Impact	26/12/2023	1	WST	23011959059	Balochistan	Kalat	Tahir
BLS & Impact	26/12/2023	1	WST	23011959060	Balochistan	Kalat	Tahmoor Aslam
BLS & Impact	27/12/2023	1	WST	23011959061	Balochistan	Kalat	Wajeed Ullah
BLS & Impact	08/01/2024	3	WST	23053152026	Balochistan	Nushki	Jahanzeb
BLS & Impact	09/01/2024	3	WST	23053152028	Balochistan	Nushki	Khan Muhammad
BLS & Impact	10/01/2024	1	WST	23014159002	Balochistan	Lasbela	Farhan Sarwar
BLS & Impact	11/01/2024	1	WST	23014454001	Balochistan	Lasbela	Abdul Danish
BLS & Impact	12/01/2024	1	WST	23014454002	Balochistan	Lasbela	Abdul Qudoos
BLS & Impact	15/01/2024	1	WST	23014454003	Balochistan	Lasbela	Abdul Wahab
BLS & Impact	15/01/2024	3	WST	23016154004	Balochistan	Surab	Gul Hassan
BLS & Impact	15/01/2024	2	WST	23072152051	Balochistan	Killa Saifullah	Shams-Ud-Din
BLS & Impact	16/01/2024	1	WST	23014454004	Balochistan	Lasbela	Abdul Waheed
BLS & Impact	16/01/2024	3	WST	23016154005	Balochistan	Surab	Kamran Munir
BLS & Impact	16/01/2024	2	WST	23072152053	Balochistan	Killa Saifullah	Shir Muhammad
BLS & Impact	17/01/2024	1	WST	23014454006	Balochistan	Lasbela	Hussain Bakhsh
BLS & Impact	17/01/2024	3	WST	23023351004	Balochistan	Panjgur	Dil Murad
BLS & Impact	18/01/2024	1	WST	23014859003	Balochistan	Lasbela	Jan Muhammad
BLS & Impact	18/01/2024	3	WST	23023351005	Balochistan	Panjgur	Elahi Baksh
BLS & Impact	19/01/2024	1	WST	23014859005	Balochistan	Lasbela	Umeed Ali
BLS & Impact	19/01/2024	3	WST	23023351007	Balochistan	Panjgur	Jammal Ahmad
BLS & Impact	22/01/2024	3	WST	23023351008	Balochistan	Panjgur	khalid

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	22/01/2024	2	WST	23071159011	Balochistan	Zhob	Gul Zaman
BLS & Impact	23/01/2024	3	WST	23023351009	Balochistan	Panjgur	Mohd Azum
BLS & Impact	23/01/2024	2	WST	23071159019	Balochistan	Zhob	Juma Rahim
BLS & Impact	23/01/2024	2	WST	23071159023	Balochistan	Zhob	Malak Din
BLS & Impact	24/01/2024	1	WST	23021959001	Balochistan	Gwadar	Abdul Rehman
BLS & Impact	24/01/2024	3	WST	23023351010	Balochistan	Panjgur	Mohd Yaseen
BLS & Impact	25/01/2024	3	WST	23023351011	Balochistan	Panjgur	Muhammad Khalid
BLS & Impact	26/01/2024	1	WST	23015251004	Balochistan	Kech	Jadain Dashti
BLS & Impact	26/01/2024	3	WST	23023351012	Balochistan	Panjgur	Shehaq
BLS & Impact	29/01/2024	1	WST	23015251005	Balochistan	Kech	Moladad
BLS & Impact	29/01/2024	3	WST	23054152003	Balochistan	Washuk	Muhammad Akber
BLS & Impact	29/01/2024	2	WST	23084342001	Balochistan	Musakhail	Anwar shah
BLS & Impact	30/01/2024	1	WST	23015251006	Balochistan	Kech	Basham
BLS & Impact	30/01/2024	3	WST	23052152004	Balochistan	Kharan	Balach Khan
BLS & Impact	31/01/2024	1	WST	23022151005	Balochistan	Kech	Faisal
BLS & Impact	31/01/2024	3	WST	23052152005	Balochistan	Kharan	Dad Muhammad
BLS & Impact	01/02/2024	1	WST	23022151006	Balochistan	Kech	Karim jan
BLS & Impact	12/02/2024	1	WST	23012154002	Balochistan	Awaran	Allah Bakhsh
BLS & Impact	12/02/2024	1	WST	23012154003	Balochistan	Awaran	Allah Dad
BLS & Impact	12/02/2024	3	WST	23051152033	Balochistan	Chaghi	sefghatullah
BLS & Impact	13/02/2024	1	WST	23012154004	Balochistan	Awaran	Khadim Hussain
BLS & Impact	13/02/2024	1	WST	23012154005	Balochistan	Awaran	Mohammad Azeem
BLS & Impact	13/02/2024	3	WST	23051152034	Balochistan	Chaghi	saifullah khan
BLS & Impact	14/02/2024	3	WST	23051152035	Balochistan	Chaghi	ameer jan
Gilgit Baltistan (GB) Unit							
BLS & Impact	23/06/2021	1	WST	24032359020	GB	Gilgit	Amin Land, Pari
BLS & Impact	16/01/2023	1	WST	24032159014	GB	Gilgit	Dr Qalab Ali Land Jutal Dass
BLS & Impact	16/01/2023	2	WST	24032159015	GB	Gilgit	Dawood Land
BLS & Impact	17/01/2023	3	WST	24031159005	GB	Ghizer	Imran Land
BLS & Impact	17/01/2023	2	WST	24034959007	GB	Hunza	Tajir Land Bull Dass
BLS & Impact	17/01/2023	1	WST	24035159002	GB	Nagar	Community Land Duikar
BLS & Impact	18/01/2023	1	WST	24021959010	GB	Astore	Wali Shah Land .Mouza:Het

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	18/01/2023	2	WST	24033159008	GB	Ghizer	Mirza Khan Land
BLS & Impact	19/01/2023	2	WST	24023259009	GB	Diamer	Abdur-Rehman Land
BLS & Impact	19/01/2023	3	WST	24023259010	GB	Diamer	Sher Alam Land
BLS & Impact	20/01/2023	2	WST	24014159012	GB	Skardu	Murtaza Abad Qumra
BLS & Impact	20/01/2023	3	WST	24014159014	GB	Skardu	Khosho Chumik Skardu
BLS & Impact	24/01/2023	2	WST	24013159013	GB	Shigar	Ghazi Abad Wazir Pur Shiger
BLS & Impact	24/01/2023	3	WST	24013159014	GB	Shigar	Tharanpa Alchori Shiger
BLS & Impact	24/01/2023	1	WST	24014959008	GB	Kharmang	Gangani Kharmang
Azad Jammu & Kashmir (AJK) Unit							
Baseline	04/08/2021	1	WST	25012116013	AJK	Jhelum	Doodhpura
Baseline	16/02/2022	1	WST	25012116009	AJK	Jhelum	Doodhpura Lower
Baseline	16/02/2022	1	WST	25012118002	AJK	Jhelum	Kakarwara
Baseline	17/02/2022	1	WST	25012126001	AJK	Jhelum	Lower Gujar Bandi
Baseline	18/02/2022	1	WST	25032416003	AJK	Kotli	Kugyali Khandar
Baseline	22/02/2022	1	WST	25031127003	AJK	Bhimber	Machora
Baseline	28/05/2022	1	WST	25031127001	AJK	Bhimber	Pithorani-2
Baseline	09/06/2022	1	WST	25011124023	AJK	Muzaffarabad	Baglota Dana
Baseline	10/06/2022	1	WST	25011116046	AJK	Muzaffarabad	Pajgran
Baseline	08/09/2022	1	WST	25011116019	AJK	Muzaffarabad	Potha Kacheli
Baseline	08/09/2022	1	WST	25011124034	AJK	Muzaffarabad	Poothi Farooqabad
Baseline	09/09/2022	1	WST	25011116055	AJK	Muzaffarabad	Saibthaan
Baseline	12/09/2022	1	WST	25032625002	AJK	Kotli	Tarala 2
Baseline	21/12/2022	1	WST	25021227008	AJK	Bagh	Kernota
Baseline	17/01/2023	1	WST	25033228001	AJK	Mirpur	Darari West
Baseline	26/01/2023	1	WST	25024316005	AJK	Sudhnoti	Jhanda Bagla
Baseline	27/01/2023	1	WST	25023216002	AJK	Poonch	Kanoli Chatra
Baseline	27/01/2023	1	WST	25023327004	AJK	Poonch	Lower Trasel
BLS & Impact	27/05/2024	1	WST	25011114004	AJK	Muzaffarabad	Muhallah Jagwal
BLS & Impact	27/05/2024	1	WST	25011116065	AJK	Muzaffarabad	Lower Subri
BLS & Impact	29/05/2024	1	WST	25022116004	AJK	Haveli	Kalali
BLS & Impact	29/05/2024	1	WST	25022116005	AJK	Haveli	Mohri Said Ali Khan
BLS & Impact	03/06/2024	1	WST	25021216009	AJK	Bagh	Kals Ghaziabad

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
BLS & Impact	03/06/2024	1	WST	25021227015	AJK	Bagh	Choor Chalari
BLS & Impact	04/06/2024	1	WST	25023227004	AJK	Poonch	Manghar

ANNEX-D: WUA MONITORING AND WATERCOURSE
BASELINE TOOL

MT-01: BRIEF PROFILE - WC

DB Code	Q. #	Field Name
IDENTIFICATION		
BP.1.0	1.0	Select Zone/ Unit
BP.1.1	1.1	Select Division
BP.1.2	1.2	Select District
BP.1.3	1.3	Select Tehsil
BP.1.4	1.4	Select M&E field team
	1	Team-1
	2	Team-2
	3	Team-3
BP.1.5	1.5	Union council?
BP.1.6	1.6	Village?
BP.1.7	1.7	Name of WUA Chairman?
BP.1.8	1.8	Contact no. of the WUA Chairman?
BP.2.0	2.0	Watercourse Name/ Number?
BP.2.1	2.1	Select date of survey
BP.2.2	2.2	Select improvement status of watercourse
	1	Technical sanction (TS) issued
	2	Intermediate Completion Report-1 (ICR-I) issued
	3	Intermediate Completion Report-2 (ICR-II) issued
	4	Final completion report (FCR) issued
BP.3.0	3.0	Select category of Watercourse improvement
	1	Regular (New)
	2	20 years old (Rehabilitation)
	3	Additional lining
BP.3.1	3.1	Select type of lining
	1	Rectangular/Bricks
	2	Pre Cast Parabolic Lining (PCPL)
	3	PVC pipe
	4	RCC pipe
	5	PCC
	6	HDPE
	7	Stone masonry
	8	Mix types
<i>If selected "Mix types" in Q.# 3.1 then continue with Q.# 3.1.1</i>		<i>Otherwise go to Q.# 3.2</i>
BP.3.1.1	3.1.1	Select the multiple options to define the mix types
<i>If selected "PVC pipe" in Q.# 3.1 or Q.# 3.1.1 then continue with Q.# 3.1.2</i>		<i>Otherwise go to Q.# 3.2</i>
BP.3.1.2	3.1.2	PVC pipe dia?
BP.3.2	3.2	Total length of watercourse? (Meters)
<i>If selected "20 years old or Additional lining" in Q.# 3.0 then continue with Q.# 3.2.0.1</i>		<i>Otherwise go to Q.# 3.2.1</i>
BP.3.2.0.1	3.2.0.1	Name of previous improvement scheme?
BP.3.2.0.2	3.2.0.2	Name of another previous improvement scheme? (If Improved in more than one scheme)
BP.3.2.0.3	3.2.0.3	Total lined length improved previously?
BP.3.2.1	3.2.1	Sanctioned lining length? (Meters)
BP.3.2.2	3.2.2	Executed/Improved lining length? (Meters) (In case of FCR issued)
BP.4.0	4.0	Irrigation source type?

		1 Canal area	
		2 Non-canal area	
If selected 'Canal area' in Q.# 4.0 then continue with Q.# 4.0.1			Otherwise go to Q# 4.0.7
BP.4.0.1	4.0.1	Canal?	
BP.4.0.2	4.0.2	Branch?	
BP.4.0.3	4.0.3	Distributary?	
BP.4.0.4	4.0.4	Minor?	
BP.4.0.5	4.0.5	Select type of canal	
	1	Perennial canal	
	2	Non-perennial canal	
BP.4.0.6	4.0.6	Select location of watercourse on the minor/canal	
	1	Head	
	2	Middle	
	3	Tail	
If selected 'Non-canal area' in Q.# 4.0 then continue with Q.# 4.0.7			Otherwise go to Q# 4.1
BP.4.0.7	4.0.7	Select non-canal source?	
	1	Tube well	
	2	Nallah	
	3	Stream	
	4	Spring	
	5	River	
	6	Lift pump	
	7	WST	
	8	Mini dam	
	9	Other source?	
BP.4.0.7Y	4.0.7Y	Other non-canal source name?	
BP.4.1	4.1	Designed discharge? (LPS)	
BP.4.1.1	4.1.1	Additional discharge available on Watercourse?	
	1	Yes	
	0	No	
If selected "Yes" in Q# 4.1.1 then continue with Q.# 4.1.2			Otherwise go to Q.# 4.2
BP.4.1.2	4.1.2	Select source of additional discharge	
	1	Tube well	
	2	WST	
	3	Lift pump	
	4	Other source of additional discharge?	
BP.4.1.2Y	4.1.2Y	Define other source name of additional discharge?	
BP.4.2	4.2	Select quality of ground water	
	1	Sweet	
	2	Brackish	
BP.4.3	4.3	Total gross command area (GCA)? (Acres)	
BP.4.3.1	4.3.1	Total culturable command area (CCA)? (Acres)	
BP.4.4	4.4	Total water user's? (No) (Total no. of farmers (owners/tenants))	
BP.5.0	5.0	Authentication by supervisor	
BP.5.1	5.1	Financial year?	
BP.5.2	5.2	Select form submission status	
	1	First Submission	
	2	Second Submission (Re-submitted due to the error in previous entry)	
	3	Third Submission (Re-submitted due to the error in previous entry)	
BP.5.3	5.3	Comments of enumerator (if any) (optional)	

MT-02: BENEFICIARIES FEEDBACK - WC

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit?
ID.1.0.1	1.0.1	District?
ID.1.1	1.1	Select M&E field team?
	1	Team-1
	2	Team-2
	3	Team-3
ID.1.2	1.2	Select Type of survey?
	1	Baseline survey
	2	Impact survey
ID.1.3	1.3	Select Date of survey?
ID.1.4	1.4	Watercourse Name/Number?
ID.1.5	1.5	Select improvement status of watercourse?
	1	Technical sanction (TS) issued
	2	Intermediate Completion Report-1 (ICR-I) issued
	3	Intermediate Completion Report-2 (ICR-II) issued
	4	Final completion report (FCR) issued
<i>If Selected "Technical Sanction Issued" in Q.# 1.5 then continue with Q.# 2.0 & Covered till Q.# 5.6</i>		
FARMER'S FEEDBACK		
BF.2.0	2.0	Number of Beneficiaries to be interviewed?
BF.3.0	3.0	Beneficiary name?
BF.3.0.1	3.0.1	Select Beneficiary Location on Watercourse?
	1	Head
	2	Middle
	3	Tail
BF.3.0.2	3.0.2	Select Tenurial Status?
	1	Owner
	2	Owner cum tenant
	3	Tenant
WATER USER'S ASSOCIATION		
WUA.3.1	3.1	Do you know about the Water Users Association?
	1	Yes
	0	No
	2	No Response
<i>If Selected "Yes" in Q.# 3.1 then continue with Q.# 3.2</i> <i>otherwise go to Q.# 3.17</i>		
WUA.3.2	3.2	Did OFWM staff organize awareness meetings before formation of Water User's Association?
	1	Yes
	0	No
WUA.3.3	3.3	Did all the water users participate in these meetings?
	1	Yes
	0	No
WUA.3.4	3.4	Did the formation of the Water Users Association formed democratically?
	1	Yes
	0	No
<i>If Selected "No" in Q.# 3.4 then continue with Q.# 3.4.1</i> <i>otherwise go to Q.# 3.5</i>		
WUA.3.4.1	3.4.1	Select reasons of non-democratic formation of Water Users Association?
	1	Political influence
	2	Big landlord
	3	Favoritism
	4	Any other? Please specify

WUA.3.4.1Y	3.4.1Y	Define other reason of non-democratic formation of Water Users Association?
WUA.3.5	3.5	Did OFWM provide any literature/awareness/capacity building method for the Water Users Association functions/ Role?
	1	Yes
	0	No
WUA.3.6	3.6	Are you a member of the Water Users Association?
	1	Yes
	0	No
WUA.3.6.1	3.6.1	Is Water Users Association functional/operational?
	1	Yes
	0	No
If Selected "No" in Q.# 3.6.1 then continue with Q.# 3.6.2		otherwise go to Q.# 3.7
WUA.3.6.2	3.6.2	Non-functional reason?
	1	Farm lands are located much apart
	2	Farmers Internal/social conflicts makes it difficult
	3	Any other? Please specify
WUA.3.6.2Y	3.6.2Y	Define other non-functional reason?
WUA.3.7	3.7	Who motivated to be a member of Water Users Association?
	1	Fellow farmers
	2	Big landlord
	3	OFWM field team
	4	Any other? Please specify
WUA.3.7Y	3.7Y	Define other person who motivate you to become the member of WUA?
WUA.3.8	3.8	Did you pay any membership fee to become a member of the Water Users Association?
	1	Yes
	0	No
	2	No response
WUA.3.9	3.9	Do all the Water Users Association members are water user?
	1	Yes
	0	No
WUA.3.10	3.10	Do Water Users Association hold regular meetings of the association?
	1	Yes
	0	No
	2	To some extent
WUA.3.11	3.11	Do you participate in the Water Users Association meetings?
	1	Always
	2	Occasionally
	3	Never
WUA.3.12	3.12	What is the frequency of Water Users Association meetings?
	1	Every Month
	2	Quarterly
	3	Once a Year
	4	As per Need Arises
WUA.3.13	3.13	Do the majority of the members participate in the meetings?
	1	Yes
	0	No
	2	To Some Extent
WUA.3.14	3.14	Do decisions make democratically?
	1	Yes
	0	No
	2	To Some Extent

WUA.3.15	3.15	Are you aware about functions and responsibilities of the Water Users Association?
	1	Provide right of way for construction of WC (Land Acquisition)
	2	Distribution of naccas
	3	Resolve disputes
	4	Funding for accounts
	5	Alternate arrangement for conveyance of water during execution
	6	Procure construction material
	7	Organized skilled & Un-skilled labor
	8	Participate in Allocation & Distribution (Warabandi)
	9	Develop drainage facilities
10	Under take Operation & Maintenance (O&M)	
WUA.3.16	3.16	Do you think the Water Users Association helps in solving your farming problems?
	1	Always
	2	To some extent
	3	Never
WUA.3.17	3.17	Did you face any disputes during Watercourse construction?
	1	Yes
	0	No
<i>If Selected "Yes" selected in Q.# 3.17 then continue with Q.# 3.17.1</i>		<i>otherwise go to Q.# 3.17.2</i>
WUA.3.17.1	3.17.1	Select Reason for disputes?
	1	Provide right of way for construction of WC (Land Acquisition)
	2	Distribution of naccas
	3	Funding for accounts
	4	Water theft
	5	Any other? Please specify
WUA.3.17.1Y	3.17.1Y	Define other reason of disputes?
<i>If Selected "Yes" selected in Q.# 3.6 then continue with Q.# 3.17.2</i>		<i>otherwise go to Q.# 3.17.3</i>
WUA.3.17.2	3.17.2	How many disputes were resolved by the Water Users Association till to date?
WUA.3.17.3	3.17.3	Select How your disputes were resolved?
	1	WUA
	2	OFWM
	3	Irrigation department
	4	Revenue department
	5	Any other? Please specify
WUA.3.17.3Y	3.17.3Y	Dispute resolved by other?
WUA.3.18	3.18	Enumerator's observations about WUA (if any)
WATER LOGGING & SALINITY		
WLS.4.0	4.0	How much land is affected by waterlogging & salinity?
<i>If Entered "Greater than Zero" in Q.# 4.0 then continue with Q.# 4.0.1</i>		<i>Otherwise go to Q.# 5.0</i>
WLS.4.0.1	4.0.1	Reason for Waterlogging?
	1	Seepage of water
	2	Excessive irrigation
	3	Poor surface runoff and slow drainage
	4	Rainfall
	5	Floods
	6	Any other? Please specify
WLS.4.0.1Y	Q.4.0.1Y	Define other reason of waterlogging?
WLS.4.1	4.1	What is the depth of water table in your area? (Feet)
WLS.4.2	4.2	Do you have an appropriate drainage facility to remove excessive water from your land?
	1	Yes

	0	No
WLS.4.3	4.3	Did you carry out any efforts to reduce/overcome this waterlogging?
	1	Yes
	0	No
	If Selected "Yes" in Q.# 4.3 then continue with Q.# 4.3.1	
WLS.4.3.1	4.3.1	Which method have you used to overcome waterlogging?
	1	Surface drains
	2	Pumping of ground water via tube well
	3	Any other? Please specify
WLS.4.3.1Y	4.3.1Y	Define other method you have used to overcome waterlogging?
WLS.4.4.1	4.4.1	Which method have you used to overcome salinity?
	1	Leaching
	2	Growing suitable crops
	3	Use of chemicals/gypsum
	3	Any other? Please specify
WLS.4.4.1Y	4.4.1Y	Define other method you have used to overcome salinity?
If Selected "Technical Sanction Issued" in Q.# 1.5 then continue with Q.# 5.0		Otherwise go to Q.# 5.1
BF.5.0	5.0	Do you Know that your watercourse is going to be newly lined/additionally lined/reconstructed?
	1	Yes
	0	No
	2	Don't know
	If Selected "Yes" in Q.# 5.0 then continue with Q.# 5.0.1	
BF.5.0.1	5.0.1	What benefits can you expect from this lining?
	1	Increase water
	2	Increase cultivated area
	3	Reduce water losses
	4	Increase crop yield
	5	Any other? Please specify
BF.5.0.1Y	5.0.1Y	Define other benefits you can expect from this lining?
BF.5.0.2	5.0.2	Will there be land required for the improvement / alignment of the watercourse?
	1	Yes
	0	No
	BF.5.0.3	5.0.3
1		Yes
0		No
PART A: BEFORE CONSTRUCTION		
PART-A: ENVIRONMENT		
EBF.5.1	5.1	Are the clothes washed on this watercourse?
	1	Yes
	0	No
	If Selected "Yes" in Q.# 5.1 then continue with Q.# 5.1.1	
EBF.5.1.1	5.1.1	How many places for washing clothes? (user at head, middle, tail)
EBF.5.2	5.2	Are washing bays required on this watercourse?
	1	Yes
	0	No
	EBF.5.3	5.3
1		Yes
0		No
If Selected "Yes" in Q.# 5.3 then continue with Q.# 5.3.1		Otherwise go to Q.# 5.4
EBF.5.3.1	5.3.1	Number of trees to be cut down?

EBF.5.4	5.4	Will temporary diversion channel(s) be needed?
	1	Yes
	0	No
EBF.5.5	5.5	How the solid waste material will be disposed of?
	1	Used in filling small depressions
	2	Used for dressing inspection path / non inspection path
	3	Left unattended
	4	Any other? Please specify
EBF.5.5Y	5.5Y	Define other solid waste material disposed of method?
EBF.5.6	5.6	Will there be disruption to local routes?
	1	Yes
	0	No
If Selected "ICR-1 or ICR-2 Issued" in Q.# 1.5 then Skip "Part-A" and continue with Q.# 6.0		
PAR-B: DURING CONSTRUCTION		
BF.6.0	6.0	Was local labor hired for improvement works of the watercourse?
	1	Yes
	0	No
PART-B: ENVIRONMENT		
EBF.6.1	6.1	Are washing bays under construction?
	1	Farmer/ community expense
	2	Govt. expense
	0	No
EBF.6.2	6.2	Were any trees cut down during watercourse improvement work?
	1	Yes
	0	No
If Selected "Yes" in Q.# 6.2 then continue with Q.# 6.2.1		Otherwise go to Q.# 6.3
EBF.6.2.1	6.2.1	Number of trees cut down?
If Entered "Greater than Zero" in Q.# 6.2.1 then continue with Q.# 6.2.2 Otherwise go to Q.# 6.3		
EBF.6.2.2	6.2.2	How many saplings have been planned to be planted against each tree cut down?
If Entered "Greater than Zero" in Q.# 6.2.2 then continue with Q.# 6.2.3 Otherwise go to Q.# 6.3		
EBF.6.2.3	6.2.3	Are the arrangements made for the protection of newly planted saplings?
	1	Yes
	0	No
EBF.6.3	6.3	Were temporary diversion channel(s), if any, made?
	1	Yes
	0	No
EBF.6.4	6.4	How the solid waste material was disposed of?
	1	Used in filling small depressions
	2	Used for dressing inspection path / non inspection path
	3	Left unattended
	4	Any other? Please specify
EBF.6.4Y	6.4Y	Define other solid waste material disposed of method?
EBF.6.5	6.5	Was the disruption of local routes occurring?
	1	Yes
	0	No
If Selected "Yes" in Q.# 6.5 then continue with Q.# 6.5.1		Otherwise go to Q.# 7.0
EBF.6.5.1	6.5.1	Were measures taken to restore the local routes properly?
	1	Yes
	0	No
If Selected "FCR Issued" in Q.# 1.5 then Skip "Part-A & Part-B" and continue with Q.# 7.0		
PART-C: AFTER CONSTRUCTION		

BF.7.0	7.0	Do you know that your watercourse is newly lined/additionally lined/reconstructed?
	1	Yes
	0	No
	2	No response
BF.7.0.1	7.0.1	What benefits have you observed from this lining?
	1	Increased water
	2	Increased income
	3	Reduced water losses
	4	Increased crop yield
	5	Any other? Please specify
BF.7.0.1Y	7.0.1Y	Define other benefits you have observed from this lining?
BF.7.0.2	7.0.2	Do you know that before the lining work was started, the watercourse was earthen, improved/renovated?
	1	Yes
	0	No
	2	Don't know
<i>If Selected "Yes" in Q.# 7.0.2 then continue with Q.# 7.0.3</i>		<i>Otherwise go to Q.# 7.1</i>
BF.7.0.3	7.0.3	How much in your view watercourse length was earthen improved / renovated?
	1	Entire length
	2	Only lining part
	3	Do not know
BF.7.1	7.1	Did you ever visit watercourse site as it was being improved?
	1	Yes
	0	No
	2	No response
<i>If Selected "No" in Q.# 7.1 then continue with Q.# 7.1.1</i>		<i>Otherwise go to Q.# 7.1.2</i>
BF.7.1.1	7.1.1	Have you heard about the quality of work?
	1	Yes
	0	No
	2	Do not know
BF.7.1.2	7.1.2	Do you think work quality was?
	1	Good
	2	Average
	3	Not good
	4	Don't know
<i>If Selected "Not good" in Q.# 7.1.2 then continue with Q.# 7.1.3</i>		<i>Otherwise Go to Q.# 7.2</i>
BF.7.1.3	7.1.3	If work quality is not good, then of which?
	1	Bricks
	2	RCC/PVC pipe
	3	Cement
	4	Slab
	5	Control structure/nacca
	6	Workmanship
	7	Any other? Please specify
BF.7.1.3Y	7.1.3Y	Define other reason for bad work quality?
BF.7.2	7.2	Do you think that irrigation water availability has increased after the watercourse improvement at your farm?
	1	Yes
	0	No
	2	Don't know
<i>If Selected "Yes" in Q.# 7.2 then continue with Q.# 7.2.1</i>		<i>Otherwise go to Q.# 7.3</i>

BF.7.2.1	7.2.1	How much irrigation water increased on your farm? (Please guess keeping in view difference in acreage irrigated before and after WC improvement)	
	1	Less than 5%	
	2	5%	
	3	10%	
	4	20%	
	5	Define other %	
BF.7.2.1Y	7.2.1Y	If irrigation water increased more than 20% then specify? (Percentage)	
PART C: ENVIRONMENT			
EBF.7.3	7.3	Were the washing bays constructed/completed?	
	1	Yes	
	0	No	
<i>If Selected "Yes" in Q.# 7.3 then continue with Q.# 7.3.1</i>			<i>Otherwise go to Q.# 7.4</i>
EBF.7.3.1	7.3.1	How many washing bays constructed/completed? (user at head, middle, tail)	
EBF.7.4	7.4	How many trees were cut down?	
<i>If Entered "Greater then Zero" in Q.# 7.4 then continue with Q.# 7.4.1</i>			<i>Otherwise go to Q.# 7.5</i>
EBF.7.4.1	7.4.1	How many saplings were planted against each tree cut down?	
<i>If Entered "Greater then Zero" in Q.# 7.4.1 then continue with Q.# 7.4.2</i>			<i>Otherwise go to Q.# 7.5</i>
EBF.7.4.2	7.4.2	Number of survived trees?	
EBF.7.4.3	7.4.3	Were the arrangements made for the protection of newly planted saplings?	
EBF.7.5	7.5	Were temporary diversion channel(s), if any, restored?	
	1	Yes	
	0	No	
EBF.7.6	7.6	How was the solid waste material disposed of?	
	1	Used in filling small depressions	
	2	Used for dressing inspection path / non inspection path	
	3	Left unattended	
	4	Any other? Please specify	
EBF.7.6.1Y	7.6.1Y	Define other solid waste material disposed of method?	
EBF.7.7	7.7	Was the disruption of local routes occurring?	
	1	Yes	
	0	No	
<i>If "Yes" in Q.# 7.7 then continue with Q.# 7.7.1</i>			<i>Otherwise go to Q.# 8.0</i>
EBF.7.7.1	7.7.1	Were measures taken to restore the local routes properly?	
	1	Yes	
	0	No	
BF.8.0	8.0	Authentication by supervisor?	
BF.8.1	8.1	Select form submission status?	
	1	First Submission	
	2	Second Submission (Re-submitted due to the error in previous entry)	
	3	Third Submission (Re-submitted due to the error in previous entry)	
BF.8.2	8.2	Comments of enumerator? (if any) (optional)	

MT-03: FARMING HOUSEHOLD - WC

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit?
ID.1.0.1	1.0.1	District?
ID.1.1	1.1	Select M&E field team?
	1	Team-1
	2	Team-2
	3	Team-3
ID.1.2	1.2	Select type of survey?
	1	Baseline survey
	2	Impact survey
ID.1.3	1.3	Select survey date?
ID.1.4	1.4	Watercourse Name / Number?
BENEFICIARY PROFILE		
FH.2.0	2.0	Name of Farmer?
FH.2.0.1	2.0.1	Select Gender?
	1	Male
	2	Female
FH.2.1	2.1	Father's name?
FH.2.2	2.2	Select location of farm on watercourse?
	1	Head
	2	Middle
	3	Tail
FH.2.3	2.3	Select Tenurial status?
	1	Owner
	2	Owner cum Tenant
	3	Tenant
FARM SIZE AND TEANURIAL STATUS		
FA.3.0	3.0	Area owned? (Acres)
FA.3.0.1	3.0.1	Area rented in? (Acres)
FA.3.0.2	3.0.2	Area rented out? (Acres)
FA.3.1C	3.1	Total land holding? (Acres)
FA.3.2	3.2	Area not cultivatable? (Acres)
FA.3.3C	3.3	Total farm area? (Acres)
SOURCE OF IRRIGATION WATER		
IS.4.1	4.1	Select Main sources of irrigation? (Multiple Choice)
	1	Canal
	2	Tube Well
	3	Any other? Please specify
IS.4.1Y	4.1Y	Define other source of irrigation?
If Selected "Tube well" in Q.# 4.1 then continue with Q.# 4.1.1		Otherwise go to Q.# 5.0
IS.4.1.1	4.1.1	Select status of tube well water used?
	1	Owned
	2	Purchased
If Selected "Purchased" in Q.# 4.1.1 then continue with Q.# 4.1.2		Otherwise go to Q.# 5.0
IS.4.1.2	4.1.2	Share of tube well water in irrigation? (%)
LIVESTOCK		
LS.5.0	5.0	Do you own live stock?
	1	Yes
	0	No
If Selected "Yes" in Q.# 5.0 then continue with Q.# 5.1		Otherwise go to Q.# 6.0
LS.5.1	5.1	Select Which type of live stock you owned?

	1	Buffalo
	2	Cow/Bull
	3	Camel
	4	Goats
	5	Sheep
	6	Poultry
	7	Ducks
Herd Size		
LS.5.1.1	5.1.1	No. of buffalo
LS.5.1.2	5.1.2	No. of cow/bull
LS.5.1.3	5.1.3	No. of camel
LS.5.1.4	5.1.4	No. of goats
LS.5.1.5	5.1.5	No. of sheep
LS.5.1.6	5.1.6	No. of poultry
LS.5.1.7	5.1.7	No. of ducks
FAMILY AND PERMANENT HIRED LABOR		
FM.6.0	6.0	How many members are living in the household?
FM.6.1	6.1	No. of adult? (Male)
FM.6.2	6.2	No. of adult? (Female)
FM.6.3	6.3	No. of children? (Boys)
FM.6.4	6.4	No. of children? (Girls)
Food Consumption Pattern		
FH.7.0	7.0	Select food cooking/consumption patterns
	1	Wheat/Wheat flour
	2	Rice
	3	Maize/Maize flour
	4	Sorghum/Millet flour
	5	Pulses
	6	Vegetables
	7	Chicken
	8	Beef
	9	Mutton
	10	Fish
	11	Egg
	12	Milk
	13	Fruit
	14	Sugar
	15	Oil

MT-03: FARMING HOUSEHOLD (Crops Portion) - WC

DB Code	Q. #	Field Name
FH.8.0	8.0	Select Type of Crop
	Row	Row Crop
	Vegetable	Vegetable
	Orchard	Orchard (Fruits)
FH.8.0.1	8.1	Select Name of Crop?
	Wheat	Wheat
	Rice	Rice
	Cotton	Cotton
	Barley	Barley
	Berseem/Lucern	Berseem/Lucern
	Sugarcane (Ratoon)	Sugarcane (Ratoon)
	Sugarcane (New)	Sugarcane (New)
	Sunflower	Sunflower
	Sorghum	Sorghum
	Rapeseed, Mustard, Canola	Rapeseed, Mustard, Canola
	Maize	Maize
	Pulses (Gram)	Pulses (Gram)
	Pulses (Lentil)	Pulses (Lentil)
	Oats or Javi or Jontari	Oats or Javi or Jontari
	Tobacco	Tobacco
	Rabi Fodder	Rabi Fodder
	Kharif Fodder	Kharif Fodder
	Mango Orchard (Old)	Mango Orchard (Old)
	Mango Orchard (New)	Mango Orchard (New)
	Apple (Old)	Apple (Old)
	Apple (New)	Apple (New)
	Dates Orchard (Old)	Dates Orchard (Old)
	Dates Orchard (New)	Dates Orchard (New)
	Banana Orchard (Old)	Banana Orchard (Old)
	Banana Orchard (New)	Banana Orchard (New)
	Lemon Orchard (Old)	Lemon Orchard (Old)
	Lemon (New)	Lemon (New)
	Potato	Potato
	Tomato	Tomato
	Chilli	Chilli
FH.8.1Y	8.1Y	Define other Crop name?
	8.2	Crop Season?
FH.8.2	Rabi	Rabi
	Kharif	Kharif
FH.8.3	8.3	Crop Acreage? (Acre)
Land Preparation		
LP.9.0	9.0	Land preparation area? (Acre)
Ploughing		
LP.9.1	9.1	Ploughing - Avg. No. of operation/Acre
LP.9.2	9.2	Ploughing - Avg. cost per operation/Acre? (Rs./Acre)

LP.9.3	9.3	Total Avg. Ploughing Cost? (Rs./Acre) (Auto Calculation)
Planking		
LP.10.0	10.0	Planking - Avg. No. of operation/Acre
LP.10.1	10.1	Planking - Avg. cost per operation/Acre? (Rs./Acre)
LP.10.2	10.2	Total Avg. Planking Cost? (Rs./Acre) (Auto Calculation)
Seed		
LP.11.0	11.0	Seed Used? (Kg/Acre)
LP.11.1	11.1	Seed Rate? (Rs./Kg)
LP.11.2	11.2	Seed - Avg. Labor per Acre? (Man Days)
LP.11.3	11.3	Total Avg. Seed Cost? (Rs/Acre) (Auto Calculation)
Seedling		
LP.12.0	12.0	Nursery/Seedling Used - Avg. cost per Acre? (Rs./Acre)
Uprooting & Transplanting		
LP.13.0	13.0	Uprooting, Transporting & Transplanting - Avg. cost per Acre? (Rs./Acre)
Manual Weeding		
WS.14.0	14.0	Manual Weeding - Avg. No. of operation/Acre
WS.14.1	14.1	Manual Weeding - Avg. cost per operation/Acre? (Rs./Acre)
WS.14.2	14.2	Total Manual Weeding Cost? (Rs./Acre) (Auto Calculation)
Weedicides/Pesticides (Spray)		
WS.15.0	15.0	Weedicides/Pesticides (Spray) Avg. Nos. of spray per acre
WS.15.1	15.1	Weedicides/Pesticides (Spray) - Avg. cost per spray? (Rs./Acre)
WS.15.2	15.2	Total Weedicides/Pesticides (Spray) Cost? (Rs./Acre) (Auto Calculation)
Farm Yard Manure (FYM)		
FY.16.0	16.0	Farm Yard Manure Avg. No. of Tractor-Trollies/Acre
FY.16.1	16.1	Farm Yard Manure - Avg. cost per Tractor-Trolley/Acre (Including Labor Charges)
FY.16.2	16.2	Total Avg. FYM Tractor Trollies Cost? (Rs./Trollies)
Fertilizer		
FI.17.0	17.0	Urea (Bag/Acre)
FI.17.0.1	17.0.1	Urea - Avg. Labor per acre? (Man Days)
FI.17.1	17.1	DAP (Bag/Acre)
FI.17.1.1	17.1.1	DAP - Avg. Labor per acre? (Man Days)
FI.17.2	17.2	Potash (Bag/Acre)
FI.17.2.1	17.2.1	Potash - Avg. Labor per acre? (Man Days)
FI.17.3	17.3	SSP (Bag/Acre)
FI.17.3.1	17.3.1	SSP - Avg. Labor per acre? (Man Days)
FI.17.4	17.4	NP (Bag/Acre)
FI.17.4.1	17.4.1	NP - Avg. Labor per acre? (Man Days)
17.5.0		
Have you applied any other Fertilizer?		
FI.17.5.0	1	Yes
	0	No
FI.17.5.1	17.5.1	Other fertilizer name-1?
FI.17.5.2	17.5.2	Other fertilizer-1? (Bag/Acre)
FI.17.5.3	17.5.3	Other fertilizer-1 - Avg. Labor per acre? (Man Days)
FI.17.6.1	17.6.1	Other fertilizer name-2?
FI.17.6.2	17.6.2	Other fertilizer-2? (Bag/Acre)
FI.17.6.3	17.6.3	Other fertilizer-2 - Avg. Labor per acre? (Man Days)
Irrigation		
CI.18.0	18.0	Number of Canal water used in Crop? (Nos.)
CI.18.1	18.1	Number of Tube Well water used in Crop? (Nos.)
CI.18.2	18.2	Labor used for irrigation? (Man Days)

Harvesting		
HT.19.0	19.0	Harvesting, Picking, Threshing and Winnowing (Rs./Acre)
Land Rent & Taxes		
LR.20.0	20.0	Land rent for 6 months?
LR.20.1	20.1	Average land Tax (All type of Taxes) for 6 Months
Crop Yield & Price		
CY.21.0	21.0	Have you sold crop in standing condition?
	1	Yes
	0	No
CY.21.1	21.1	Yield? (40-Kg/Acre)
CY.21.2	21.2	Yield Price? (Rs./40-Kg)
CY.21.3	21.3	By-product price (lumpsum/Acre)
CY.21.4	21.4	If crop sold in standing condition? (Rs./Acre)

* Female (Man day = 0.83)

* Children (Man day = 0.3)

MT-03: FARMING HOUSEHOLD (Warabandi Portion) - WC

DB Code	Q. #	Field Name
BENEFICIARY'S PERCEPTION ABOUT WATER SAVING		
WB.22.0	22.0	Warabandi practice adopted at your watercourse?
	1	Yes
	0	No
<i>If Selected "Yes" in Q.# 22.0 then continue with Q.# 22.0.1</i>		<i>Otherwise go to Q.# 23.0</i>
WB.22.0.1	22.0.1	Kind of Warabandi?
	1	Katcha
	2	Pakka
WB.22.0.2	22.0.2	Do you think that water is equitably distributed ?
	1	Yes
	0	No
<i>If Selected "No" in Q.# 22.0.2 then continue with Q.# 22.0.3</i>		<i>Otherwise go to Q.# 22.0.4</i>
WB.22.0.3	22.0.3	Select reasons for un-equitably distribution?
	1	Influential persons/political persons
	2	PID officials
	3	Weak Banks
	4	low demands
	5	Higher planning of mohga
	6	Broken mohga
WB.23.0	23.0	How much of your land was irrigated before lining in one go? (Percentage)
WB.23.1	23.1	Do you have enough water for crops irrigation?
	1	Yes
	0	No
<i>If Selected "No" in Q.# 23.1 then continue with Q.# 24.0</i>		<i>Otherwise go to Q.# 30.0</i>
MT.24.0	24.0	Did you miss your water turn(s) during the last season?
	1	Yes
	0	No
<i>If Selected "Yes" in Q.# 24.0 then continue with Q.# 24.1</i>		<i>Otherwise go to Q.# 25.0</i>
MT.24.1	24.1	How much in the kharif season?
MT.24.2	24.2	How much in the rabi season?
ET.25.0	25.0	Did you exchange irrigation turns during last season?
	1	Yes
	0	No
<i>If Selected "Yes" in Q.# 25.0 then continue with Q.# 25.1</i>		<i>Otherwise go to Q.# 26.0</i>
ET.25.1	25.1	How much in the kharif season?
ET.25.2	25.2	How much in the rabi season?
PT.26.0	26.0	Did you purchase water during last season?
	1	Yes
	0	No
<i>If Selected "Yes" in Q.# 26.0 then continue with Q.# 26.1</i>		<i>Otherwise go to Q.# 27.0</i>
PT.26.1	26.1	How much in the kharif season?
PT.26.2	26.2	How much in the rabi season?
ST.27.0	27.0	Did you sell water during last season?
	1	Yes
	0	No
<i>If Selected "Yes" in Q.# 27.0 then continue with Q.# 27.1</i>		<i>Otherwise go to Q.# 28.0</i>
ST.27.1	27.1	How much in the kharif season?
ST.27.2	27.2	How much in the rabi season?
SW.28.0	28.0	Was water stolen from your turn during last season?
	1	Yes
	0	No

If Selected "Yes" in Q.# 28.0 then continue with Q.# 28.1			Otherwise go to Q.# 29.0
SW.28.1	28.1	How much in the kharif season?	
SW.28.2	28.2	How much in the rabi season?	
FH.29.0	29.0	Authentication by supervisor?	
FH.29.1	29.1	Select form submission status?	
FH.29.2	29.2	Comments of enumerator? (if any)	

MT-04: INPUT PRICES - WC

DB Code	Q. #	Field Name
1. IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit?
ID.1.0.1	1.0.1	District?
ID.1.1	1.1	Select M&E field team?
	1	Team-1
	2	Team-2
	3	Team-3
ID.1.2	1.2	Select Type of survey?
	1	Baseline survey
	2	Impact survey
ID.1.3	1.3	Select Survey date?
ID.1.4	1.4	Select Watercourse ID?
7. Input Prices		
IP.2.0	2.0	Select all relevant Seed input prices?
Seeds		
IP.2.1.1	2.1.1	Seed of Wheat? (Rs./Kg)
IP.2.1.2	2.1.2	Seed of Cotton? (Rs./Kg)
IP.2.1.3	2.1.3	Seed of Barley? (Rs./Kg)
IP.2.1.4	2.1.4	Seed of Berseem/Lucern? (Rs./Kg)
IP.2.1.5	2.1.5	Seed of Sunflower? (Rs./Kg)
IP.2.1.6	2.1.6	Seed of Sesum? (Rs./Kg)
IP.2.1.7	2.1.7	Sorghum-Fodder? (Rs./Kg)
IP.2.1.8	2.1.8	Seed of Rapeseed, Mustard, Canola? (Rs./Kg)
IP.2.1.9	2.1.9	Seed of Maize? (Rs./Kg)
IP.2.1.10	2.1.10	Seed of Maize-Fodder? (Rs./Kg)
IP.2.1.11	2.1.11	Seed of Oats or Javi or Jontari? (Rs./Kg)
IP.2.1.12	2.1.12	Seed of Pulses (Gram)? (Rs./Kg)
IP.2.1.13	2.1.13	Seed of Pulses (Lentil)? (Rs./Kg)
IP.2.1.14	2.1.14	Seed of Okra? (Rs./Kg)
IP.2.1.15	2.1.15	Seed of Tobacco? (Rs./Kg)
IP.2.1.16.1	2.1.16.1	Other Seed Name
IP.2.1.16.2	2.1.16.2	Other Seed? (Rs./Kg)
IP.3.0	3.0	Select all relevant Seedling input prices?
Seedling		
IP.3.1.1	3.1.1	Seedling of Rice? (Rs./Acre)
IP.3.1.2	3.1.2	Seedling of Dates? (Rs./Acre)
IP.3.1.3	3.1.3	Seedling of Banana? (Rs./Acre)
IP.3.1.4	3.1.4	Seedling of Apple? (Rs./Acre)
IP.3.1.5	3.1.5	Sets of Sugarcane? (Rs./Acre)
IP.3.1.6	3.1.6	Seedling of Potato? (Rs./Acre)
IP.3.1.7	3.1.7	Seedling of Tomato? (Rs./Acre)
IP.3.1.8	3.1.8	Seedling of Chilli? (Rs./Acre)
IP.3.1.9	3.1.9	Seedling of Onion? (Rs./Acre)
IP.3.1.10	3.1.10	Seedling of Lemon? (Rs./Acre)
IP.3.1.11.1	3.1.11.1	Other Seedling Name?
IP.3.1.11.2	3.1.11.2	Other Seedling? (Rs./Acre)
Land Preparation Prices		
IP.4.1.1	4.1.1	Tractor Use? (Rs./Acre)
IP.4.1.2	4.1.2	Laser Land Leveling? (Rs./Hour)
IP.4.1.3	4.1.3	Farm Yard Manure? (Rs./Trolley)
Fertilizer Prices		

IP.4.2.1	4.2.1	DAP? (Rs./Bag)
IP.4.2.2	4.2.2	Urea? (Rs./Bag)
IP.4.2.3	4.2.3	Potash? (Rs./Bag)
IP.4.2.4	4.2.4	SSP? (Rs./Bag)
IP.4.2.5	4.2.5	NP? (Rs./Bag)
IP.4.2.6	4.2.6	Other Fertilizer Used rather then above mentioned Fertilizer?
	1	Yes
	0	No
IP.4.2.6.1	4.2.6.1	Other Fertilizer Name?
IP.4.2.6.2	4.2.6.2	Other Fertilizer? (Rs./Bag)
IP.5.1	5.1	Tube Well Water? (Rs./Hour)
Labor		
IP.6.1	6.1	Family + PHL - Man Days? (Rs./Month)
IP.6.2	6.2	CHL - Man Days? (Rs./Day)
IP.7.0	7.0	Authentication by supervisor?
IP.7.1	7.1	Select form submission status?
	1	First Submission
	2	Second Submission (Re-submitted due to the error in previous entry)
	3	Third Submission (Re-submitted due to the error in previous entry)
IP.7.2	7.2	Comments of enumerator? (if any) (optional)

ANNEX-E: WATER STORAGE TANKS BASELINE TOOL

MT-01: IDENTIFICATION - WST

DB.#	Q.#	Field Name
IDENTIFICATION		
BP.1.0	1.0	Zone / Unit?
BP.1.1	1.1	Division?
BP.1.2	1.2	District?
BP.1.3	1.3	Tehsil?
BP.1.4	1.4	M&E field team?
BP.1.5	1.5	Union Council?
BP.1.6	1.6	Village?
BP.2.0	2.0	Name of Farmer?
BP.2.0.1	2.0.1	Gender?
	1	Male
	2	Female
BP.2.0.2	2.0.2	Father's name?
BP.2.0.3	2.0.3	CNIC number?
BP.2.0.4	2.0.4	Cell number?
BP.2.1	2.1	Nation Assembly Constituency?
BP.2.2	2.2	Provincial Assembly Constituency?
BP.3.0	3.0	Select date of survey
BP.3.1	3.1	Sources of Irrigation System?
	1	Perennial Canal
	2	Non-Perennial Canal
	3	Tube Well
	4	Perennial Canal+Tube Well
	5	Non-Perennial Canal+Tube Well
	6	Tail Water Recovery Ditch (TWRD)
	7	Stream
	8	Nallah
	9	Spring
	10	Dug Well
BP.3.2	3.2	Area Operated? (Acres)
BP.3.3	3.3	Land Topography?
	1	Even
	2	Un-even
	3	Slightly Sloped
BP.4.0	4.0	Authentication by supervisor?
BP.4.1	4.1	Financial Year?
BP.4.2	4.2	Select form submission status?
	1	First Submission
	2	Second Submission (Re-submitted due to the error in previous entry)
	3	Third Submission (Re-submitted due to the error in previous entry)
BP.4.3	4.3	Comments of enumerator? (if any)

MT-01: IDENTIFICATION - WST

DB.#	Q.#	Field Name
IDENTIFICATION		
BP.1.0	1.0	Zone / Unit?
BP.1.1	1.1	Division?
BP.1.2	1.2	District?
BP.1.3	1.3	Tehsil?
BP.1.4	1.4	M&E field team?
BP.1.5	1.5	Union Council?
BP.1.6	1.6	Village?
BP.2.0	2.0	Water Storage Tank Name?
BP.2.1	2.1	Chairman Name?
BP.2.1.1	2.1.1	Contact number of Chairman?
BP.2.2	2.2	Select Date of survey
BP.2.3	2.3	Select Improvement status of WST
	1	Technical sanction (TS) issued
	2	Final completion report (FCR) issued
BP.3.0	3.0	Sources of Irrigation System?
	1	Perennial canal
	2	Non-perennial canal
	3	Tube well
	4	Tail Water Recovery Ditch (TWRD)
	5	Nallah
	6	Stream
	7	Spring
	8	Dug well
	9	Other source? Please specify
BP.3.0A	3.0A	Other Sources of irrigation system?
BP.3.1	3.1	Area Operated? (Acres)
BP.3.2	3.2	Land Topography?
	1	Even
	2	Un-even
BP.4.0	3.3	Slightly Sloped
	4.0	Authentication by supervisor?
	4.1	Financial Year?
BP.4.2	4.2	Select form submission status?
	1	First Submission
	2	Second Submission (Re-submitted due to the error in previous entry)
BP.4.3	3	Third Submission (Re-submitted due to the error in previous entry)
	4.3	Comments of enumerator? (if any)

MT-02: BENEFICIARIES FEEDBACK - WST

DB.#	Q.#	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit
ID.1.0.1	1.0.1	Select District
ID.1.1	1.1	Select M&E field team
	1	Team-1
	2	Team-2
	3	Team-3
ID.1.2	1.2	Select Type of survey
	1	Baseline survey
	2	Impact survey
ID.1.3	1.3	Select date of survey
ID.1.4	1.4	Water Storage Tank Name/ Farmer Name?
ID.1.5	1.5	Select Improvement status of Water Storage Tank
	1	Technical sanction (TS) issued
	2	Final completion report (FCR) issued
<i>If "Technical Sanction Issued" Selected in Q.# 1.5, then covered till Q.# 2.5.1</i>		
Coordinates & Picture		
ID.1.6	1.6	Collect the coordinates? (Turn off wireless or mobile data for precise coordinates)
ID.1.6.1	1.6.1	Take picture of Water Storage Tank?
ID.1.6.2	1.6.2	Take picture of Signboard? (In case of FCR Issued)
PART-A: Before Construction		
BF.2.1	2.1	How was your application processed/dealt with by OFWM staff?
	1	Promptly
	2	Took a lot of time
<i>If Selected "Took a lot of time" in Q.#.2.1, then continue with Q.# 2.1.1</i>		<i>Otherwise go to Q.# 2.2</i>
BF.2.1.1	2.1.1	How much period (days) it has taken?
BF.2.2	2.2	How you assess survey and design process?
	1	Fast track
	2	Lengthy
<i>If Selected "Lengthy" in Q.#.2.2, then continue with Q.# 2.2.1</i>		<i>Otherwise go to Q.# 2.3</i>
BF.2.2.1	2.2.1	How much period (days) it has taken?
BF.2.3	2.3	Behavior of OFWM staff?
	1	Friendly / Supportive
	2	Indifferent
BF.2.4	2.4	How do you feel about the maintenance of WST?
	1	Easy
	2	Difficult
Environment-A: Before Construction		
EBF.2.5	2.5	Will any trees be cut down on this WST?
	1	Yes
	0	No
EBF.2.5.1	2.5.1	How many trees to be cut down?
<i>If Selected "FCR issued" Selected in Q. #1.5, then Skip "Part-A" continue with Q. # 3.0</i>		
PART-B: After Construction		
BF.3.0	3.0	Cropping intensity has increased on your farm after WST construction?
	1	Yes
	0	No
<i>If Selected "Yes" in Q.#.3.0, then continue with Q.# 3.0.1</i>		<i>Otherwise go to Q.# 3.1</i>

BF.3.0.1	3.0.1	How much cropping intensity has been increased on your farm after WST construction? (Percentage)	
BF.3.1	3.1	Crops / orchards yield has increased after WST construction?	
	1	Yes	
	0	No	
<i>If Selected "Yes" in Q.# 3.1, then continue with Q.# 3.1.1</i>			<i>Otherwise go to Q.# 3.2</i>
BF.3.1.1	3.1.1	How much crops / orchards yield has increased? (Percentage)	
BF.3.2	3.2	Area under cultivation has increased after WST construction?	
	1	Yes	
	0	No	
BF.3.3	3.3	Number of irrigation/acre has increased after WST construction?	
	1	Yes	
	0	No	
BF.3.4	3.4	The improved WST is properly maintained?	
	1	Yes	
	0	No	
Environment-B: After Construction			
EBF.3.5	3.5	Were any trees cut down on this WST?	
<i>If Selected "Yes" in Q.# 3.5, then continue with Q.# 3.5.1</i>			<i>Otherwise go to Q.# 4.0</i>
EBF.3.5.4	1	Yes	
	0	No	
	EBF.3.5.1	3.5.1	How many trees were cut down? (Nos.)
EBF.3.5.2	3.5.2	How many saplings were planted against each tree cut down?	
EBF.3.5.3	3.5.3	Number of survived trees?	
<i>If Entered "Greater than Zero" in Q.# 3.5.2, then continue with Q.# 3.5.3</i>			<i>Otherwise go to Q.# 4.0</i>
EBF.3.5.4	3.5.4	Were any arrangements made for the protection of newly planted saplings?	
	1	Yes	
	0	No	
BH.4.0	4.0	Authentication by supervisor?	
BH.4.1	4.1	Select form submission status?	
	1	First Submission	
	2	Second Submission (Re-submitted due to the error in previous entry)	
	3	Third Submission (Re-submitted due to the error in previous entry)	
BH.4.2	4.2	Comments of enumerator? (if any) (optional)	

MT-03: FARMING HOUSEHOLD - WST

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit?
ID.1.0.1	1.0.1	Select District?
ID.1.1	1.1	Select M&E field team?
	1	Team-1
	2	Team-2
	3	Team-3
ID.1.2	1.2	Select type of survey
	1	Baseline survey
	2	Impact survey
ID.1.3	1.3	Select Date of survey?
ID.1.4	1.4	Name of Water Storage Tank?
BENEFICIARY PROFILE		
FH.2.0	2.0	Select Location of Farm on Watercourse?
	1	Head
	2	Middle
	3	Tail
FH.2.1	2.1	Select Tenurial status?
	1	Owner
	2	Owner cum Tenant
	3	Tenant
FARM SIZE AND TEANURIAL STATUS		
FA.3.0	3.0	Area owned? (Acres)
FA.3.0.1	3.0.1	Area rented in? (Acres)
FA.3.0.2	3.0.2	Area rented out? (Acres)
FA.3.1C	3.1C	Total land holding? (Acres)
FA.3.2	3.2	Area not cultivatable? (Acres)
FA.3.3C	3.3C	Total farm area? (Acres)
SOURCE OF IRRIGATION WATER		
IS.4.1	4.1	Select main source? (Multiple Choice)
	1	Canal
	2	Tube well
	3	Any other? Please specify
IS.4.1Y	4.1Y	Define other source of irrigation?
If Selected "Tube well" in Q.#.4.1 then continue with Q.#.4.1.1		Otherwise go to Q.#.5.0
IS.4.1.1	4.1.1	Select status of tube well water used?
	1	Owned
	2	Purchased
If Selected "Purchased" in Q.#.4.1.1 then continue with Q.#.4.1.2		Otherwise go to Q.#.5.0
IS.4.1.2	4.1.2	Share of tube well water in irrigation? (%)
LIVESTOCK		
LS.5.0	5.0	Do you own live stock?
	1	Yes
	0	No
	If Selected "Yes" in Q.# 5.0 then continue with Q.#.5.1	
LS.5.1	5.1	Select type of live stock you owned?
	1	Buffalo
	2	Cow/Bull
	3	Camel
	4	Goats
	5	Sheep

	6	Poultry
	7	Ducks
Herd Size		
LS.5.1.1	5.1.1	No. of buffalo
LS.5.1.2	5.1.2	No. of cow/bull
LS.5.1.3	5.1.3	No. of camel
LS.5.1.4	5.1.4	No. of goats
LS.5.1.5	5.1.5	No. of sheep
LS.5.1.6	5.1.6	No. of poultry
LS.5.1.7	5.1.7	No. of ducks
FAMILY AND PERMANENT HIRED LABOR		
FM.6.0	6.0	How many members are living in the household?
FM.6.1	6.1	No. of adult? (Male)
FM.6.2	6.2	No. of adult? (Female)
FM.6.3	6.3	No. of children? (Boys)
FM.6.4	6.4	No. of children? (Girls)
Food Consumption Pattern		
FH.7.0	7.0	Select food cooking/consumption patterns
	1	Wheat/Wheat flour
	2	Rice
	3	Maize/Maize flour
	4	Sorghum/Millet flour
	5	Pulses
	6	Vegetables
	7	Chicken
	8	Beef
	9	Mutton
	10	Fish
	11	Egg
	12	Milk
	13	Fruit
	14	Sugar
	15	Oil

MT-03: FARMING HOUSEHOLD (Crops Portion) - WST

DB Code	Q. #	Field Name
FH.8.0	8.0	Select Type of Crop
	Row	Row Crop
	Vegetable	Vegetable
	Orchard	Orchard (Fruits)
FH.8.0.1	8.1	Select Name of Crop?
	Wheat	Wheat
	Rice	Rice
	Cotton	Cotton
	Barley	Barley
	Berseem/Lucern	Berseem/Lucern
	Sugarcane (Ratoon)	Sugarcane (Ratoon)
	Sugarcane (New)	Sugarcane (New)
	Sunflower	Sunflower
	Sorghum	Sorghum
	Rapeseed, Mustard, Canola	Rapeseed, Mustard, Canola
	Maize	Maize
	Pulses (Gram)	Pulses (Gram)
	Pulses (Lentil)	Pulses (Lentil)
	Oats or Javi or Jontari	Oats or Javi or Jontari
	Tobacco	Tobacco
	Rabi Fodder	Rabi Fodder
	Kharif Fodder	Kharif Fodder
	Mango Orchard (Old)	Mango Orchard (Old)
	Mango Orchard (New)	Mango Orchard (New)
	Apple (Old)	Apple (Old)
	Apple (New)	Apple (New)
	Dates Orchard (Old)	Dates Orchard (Old)
	Dates Orchard (New)	Dates Orchard (New)
	Banana Orchard (Old)	Banana Orchard (Old)
	Banana Orchard (New)	Banana Orchard (New)
	Lemon Orchard (Old)	Lemon Orchard (Old)
	Lemon (New)	Lemon (New)
	Potato	Potato
	Tomato	Tomato
	Chilli	Chilli
	Bitter Gourd	Bitter Gourd
	Cauliflower	Cauliflower
	Garlic	Garlic
	Okra	Okra
	Onions	Onions
FH.8.1Y	8.1Y	Define other Crop name?
FH.8.2	8.2	Crop Season?
	Rabi	Rabi
FH.8.3	Kharif	Kharif
	8.3	Crop Acreage? (Acre)
Land Preparation		
LP.9.0	9.0	Land preparation area? (Acre)
Ploughing		
LP.9.1	9.1	Ploughing - Avg. No. of operation/Acre
LP.9.2	9.2	Ploughing - Avg. cost per operation/Acre? (Rs./Acre)

LP.9.3	9.3	Total Avg. Ploughing Cost? (Rs./Acre) (Auto Calculation)
Planking		
LP.10.0	10.0	Planking - Avg. No. of operation/Acre
LP.10.1	10.1	Planking - Avg. cost per operation/Acre? (Rs./Acre)
LP.10.2	10.2	Total Avg. Planking Cost? (Rs./Acre) (Auto Calculation)
Seed		
LP.11.0	11.0	Seed Used? (Kg/Acre)
LP.11.1	11.1	Seed Rate? (Rs./Kg)
LP.11.2	11.2	Seed - Avg. Labor per Acre? (Man Days)
LP.11.3	11.3	Total Avg. Seed Cost? (Rs/Acre) (Auto Calculation)
Seedling		
LP.12.0	12.0	Nursery/Seedling Used - Avg. cost per Acre? (Rs./Acre)
Uprooting & Transplanting		
LP.13.0	13.0	Uprooting, Transporting & Transplanting - Avg. cost per Acre? (Rs./Acre)
Manual Weeding		
WS.14.0	14.0	Manual Weeding - Avg. No. of operation/Acre
WS.14.1	14.1	Manual Weeding - Avg. cost per operation/Acre? (Rs./Acre)
WS.14.2	14.2	Total Manual Weeding Cost? (Rs./Acre) (Auto Calculation)
Weedicides/Pesticides (Spray)		
WS.15.0	15.0	Weedicides/Pesticides (Spray) Avg. Nos. of spray per acre
WS.15.1	15.1	Weedicides/Pesticides (Spray) - Avg. cost per spray? (Rs./Acre)
WS.15.2	15.2	Total Weedicides/Pesticides (Spray) Cost? (Rs./Acre) (Auto Calculation)
Farm Yard Manure (FYM)		
FY.16.0	16.0	Farm Yard Manure Avg. No. of Tractor-Trollies/Acre
FY.16.1	16.1	Farm Yard Manure - Avg. cost per Tractor-Trolley/Acre (Including Labor Charges)
FY.16.2	16.2	Total Avg. FYM Tractor Trollies Cost? (Rs./Trollies)
Fertilizer		
FI.17.0	17.0	Urea (Bag/Acre)
FI.17.0.1	17.0.1	Urea - Avg. Labor per acre? (Man Days)
FI.17.1	17.1	DAP (Bag/Acre)
FI.17.1.1	17.1.1	DAP - Avg. Labor per acre? (Man Days)
FI.17.2	17.2	Potash (Bag/Acre)
FI.17.2.1	17.2.1	Potash - Avg. Labor per acre? (Man Days)
FI.17.3	17.3	SSP (Bag/Acre)
FI.17.3.1	17.3.1	SSP - Avg. Labor per acre? (Man Days)
FI.17.4	17.4	NP (Bag/Acre)
FI.17.4.1	17.4.1	NP - Avg. Labor per acre? (Man Days)
17.5.0		
Have you applied any other Fertilizer?		
FI.17.5.0	1	Yes
	0	No
FI.17.5.1	17.5.1	Other fertilizer name-1?
FI.17.5.2	17.5.2	Other fertilizer-1? (Bag/Acre)
FI.17.5.3	17.5.3	Other fertilizer-1 - Avg. Labor per acre? (Man Days)
FI.17.6.1	17.6.1	Other fertilizer name-2?
FI.17.6.2	17.6.2	Other fertilizer-2? (Bag/Acre)
FI.17.6.3	17.6.3	Other fertilizer-2 - Avg. Labor per acre? (Man Days)
Irrigation		
CI.18.0	18.0	Number of Canal water used in Crop? (Nos.)
CI.18.1	18.1	Number of Tube Well water used in Crop? (Nos.)
CI.18.2	18.2	Labor used for irrigation? (Man Days)

Harvesting		
HT.19.0	19.0	Harvesting, Picking, Threshing and Winnowing (Rs./Acre)
Land Rent & Taxes		
LR.20.0	20.0	Land rent for 6 months?
LR.20.1	20.1	Average land Tax (All type of Taxes) for 6 Months
Crop Yield & Price		
CY.21.0	21.0	Have you sold crop in standing condition?
	1	Yes
	0	No
CY.21.1	21.1	Yield? (40-Kg/Acre)
CY.21.2	21.2	Yield Price? (Rs./40-Kg)
CY.21.3	21.3	By-product price (lumpsum/Acre)
CY.21.4	21.4	If crop sold in standing condition? (Rs./Acre)

*Female (Man day = 0.83)

* Children (Man day = 0.3)

MT-03: FARMING HOUSEHOLD - WST

DB.#	Q.#	Field Name
PWS.22.0	22.0	Do you think use of labor force increased on farm after construction of WST?
	1	Yes
	0	No
<i>If Selected "Yes" in Q.# 22.0 then continue with Q.# 22.1</i>		<i>Otherwise go to Q.# 23.0</i>
PWS.22.1	22.1	How much farm labor increased on farm after construction of WST?
PWS.22.2	22.2	How much your land was irrigated before WST construction?(%)?
PWS.22.3	22.3	Source of irrigation water?
	1	Surface water
	2	Ground water
PWS.22.4	22.4	Cost of Pumping?
FH.23.0	23.0	Authentication by supervisor?
FH.23.1	23.1	Select form submission status?
	1	First Submission
	2	Second Submission (Re-submitted due to the error in previous entry)
FH.23.2	3	Third Submission (Re-submitted due to the error in previous entry)
	23.2	Comments of enumerator? (if any)

MT-04: INPUT PRICES - WST

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit?
ID.1.0.1	1.0.1	Select District?
ID.1.1	1.1	Select M&E field team?
	1	Team-1
	2	Team-2
	3	Team-3
ID.1.2	1.2	Select Type of survey?
	1	Baseline survey
	2	Impact survey
ID.1.3	1.3	Select Date of survey?
ID.1.4	1.4	Watercourse Name / Number?
Input Prices		
IP.2.0	2.0	Select all relevant input prices?
Seeds		
IP.2.1.1	2.1.1	Seed of Wheat? (Rs./Kg)
IP.2.1.2	2.1.2	Seed of Cotton? (Rs./Kg)
IP.2.1.3	2.1.3	Seed of Barley? (Rs./Kg)
IP.2.1.4	2.1.4	Seed of Berseem/Lucern? (Rs./Kg)
IP.2.1.5	2.1.5	Seed of Sunflower? (Rs./Kg)
IP.2.1.6	2.1.6	Seed of Sesum? (Rs./Kg)
IP.2.1.7	2.1.7	Sorghum-Fodder? (Rs./Kg)
IP.2.1.8	2.1.8	Seed of Rapeseed, Mustard, Canola? (Rs./Kg)
IP.2.1.9	2.1.9	Seed of Maize? (Rs./Kg)
IP.2.1.10	2.1.10	Seed of Maize-Fodder? (Rs./Kg)
IP.2.1.11	2.1.11	Seed of Oats or Javi or Jontari? (Rs./Kg)
IP.2.1.12	2.1.12	Seed of Pulses (Gram)? (Rs./Kg)
IP.2.1.13	2.1.13	Seed of Pulses (Lentil)? (Rs./Kg)
IP.2.1.14	2.1.14	Seed of Okra? (Rs./Kg)
IP.2.1.15	2.1.15	Seed of Tobacco? (Rs./Kg)
IP.2.1.16.1	2.1.16.1	Other Seed Name?
IP.2.1.16.2	2.1.16.2	Other Seed? (Rs./Kg)
Seedling		
IP.3.0	3.0	Select all relevant Seedling input prices?
IP.3.1.1	3.1.1	Seedling of Rice? (Rs./Acre)
IP.3.1.2	3.1.2	Seedling of Dates? (Rs./Acre)
IP.3.1.3	3.1.3	Seedling of Banana? (Rs./Acre)
IP.3.1.4	3.1.4	Seedling of Apple? (Rs./Acre)
IP.3.1.5	3.1.5	Sets of Sugarcane? (Rs./Acre)
IP.3.1.6	3.1.6	Seedling of Potato? (Rs./Acre)
IP.3.1.7	3.1.7	Seedling of Tomato? (Rs./Acre)
IP.3.1.8	3.1.8	Seedling of Chilli? (Rs./Acre)
IP.3.1.9	3.1.9	Seedling of Onion? (Rs./Acre)
IP.3.1.10	3.1.10	Seedling of Lemon? (Rs./Acre)
IP.3.1.11.1	3.1.11.1	Other Seedling? Name
IP.3.1.11.2	3.1.11.2	Other Seedling? (Rs./Acre)
Land Preparation Prices		
IP.4.1.1	4.1.1	Tractor Use? (Rs./Acre)
IP.4.1.2	4.1.2	Laser Land Leveling? (Rs./Hour)
IP.4.1.3	4.1.3	Farm Yard Manure? (Rs./Trolley)
Fertilizer Prices		

IP.4.2.1	4.2.1	DAP? (Rs./Bag)
IP.4.2.2	4.2.2	Urea? (Rs./Bag)
IP.4.2.3	4.2.3	Potash? (Rs./Bag)
IP.4.2.4	4.2.4	SSP? (Rs./Bag)
IP.4.2.5	4.2.5	NP? (Rs./Bag)
IP.4.2.6	4.2.6	Other Fertilizer Used rather then above mentioned Fertilizer?
IP.4.2.6.1	4.2.6.1	Other Fertilizer Name?
IP.4.2.6.2	4.2.6.2	Other Fertilizer? (Rs./Bag)
IP.5.1	5.1	Tube Well Water? (Rs./Hour)
Labor		
IP.6.1	6.1	Family + PHL - Man Days? (Rs./Month)
IP.6.2	6.1	CHL - Man Days? (Rs./Day)
IP.7.0	7.0	Authentication by supervisor
IP.7.1	7.1	Select form submission status
	1	First Submission
	2	Second Submission
	3	Third Submission
IP.7.2	7.2	Comments of enumerator? (if any) (optional)

ANNEX-F: SPOT CHECKING OF WATERCOURSES TOOL

WC SPOT CHECK - MONITORING TEMPLATE

DB Code	Q. #	Field Name
1. IDENTIFICATION		
ID.1.0	1	Select Zone/ Unit?
ID.1.0.1	1.0.1	District?
MT.1.1	1.1	Select M&E field team?
	1	Team-1
	2	Team-2
	3	Team-3
MT.1.2	1.2	Select Type of survey?
MT.1.3	1.3	Select Date of survey?
MT.1.4	1.4	Watercourse Name / Number?
MT.2.0	2.0	Select Improvement category of Watercourse?
	1	Regular (New)
	2	20 years old (Rehabilitation)
	3	Additional lining
MT.2.1	2.1	Select Type of lining?
	1	Rectangular/Bricks
	2	PCPL
	3	PVC Pipe
	4	RCC (Reinforced Cement Concrete)
	5	PCC (Plain Cement Concrete)
	6	HDPE
MT.2.2	2.2	Select Current status of Watercourse improvement?
	1	Technical sanction (TS) issued
	2	Intermediate Completion Report-1 (ICR-I) issued
	3	Intermediate Completion Report-2 (ICR-II) issued
	4	Final completion report (FCR) issued
If "Technical Sanction Issued" in Q.# 2.2 then continue with Q.# 3.0 & Covered till Q.# 4.1 If "ICR-1/ICR-2 Issued" in Q.# 2.2 then continue with Q.# 3.0 & Covered till Q.# 4.1 If "FCR issued" in Q.# 2.2 then continue with Q.# 3.0 & Covered till End		
Collect the Coordinates at Mogha Point		
MT.3.0	3.0	Collect the coordinates at the Mogha point?
MT.3.1	3.1	Take picture at start of Mogha point?
If Selected "20 Years Old/Additional Lining" in Q.# 2.0 then continue with Q.# 4.0		Otherwise go to Q.# 5.0
Additional Lining Info		
MT.4.0	4.0	Collect the coordinates at the end of previous lined portion?
MT.4.0.1	4.0.1	Take picture of Measuring wheel meter while standing at the end of previous lined portion
LL.4.1	4.1	Total lined length improved previously? (Meters)
MT.5.0	5.0	Take Picture of Enumerator along with the Measuring wheel while measuring the length?
Collect the Coordinates at the end of Lined Portion		
MT.5.1	5.1	Collect the coordinates at the end of lined portion?
MT.5.1.1	5.1.1	Take the picture while standing at the end of lined portion? (Facing towards Mogha point)
MT.5.1.2	5.1.2	Take the picture while standing at the end of lined portion? (Facing towards the katcha portion)
MT.5.1.3	5.1.3	Take picture of Measuring wheel meter while standing at the end of lined portion?

LL.5.2	5.2	Executed/improved lined length of watercourse? (Meters)
Collect the Coordinates at the end of Katcha Portion		
MT.6.0	6.0	Collect the coordinates at the end of katcha portion?
MT.6.0.1	6.0.1	Take the picture of watercourse while standing at the end of katcha portion? (Facing toward the mogha point)
MT.6.1	6.1	Take picture of Measuring wheel meter while standing at the end of katcha portion?
LL.6.2	6.2	Total length of Watercourse? (Meters)
<i>If Selected "Rectangular/Bricks" in Q.# 2.1 then continue with Q.# 7.0</i>		
3. Rectangular/ Bricks Watercourse		
BRW.7.0	7.0	Removal of vegetation from watercourse properly?
	1	Yes
	0	No
BRW.7.1.1	7.1.1	Aligning according to design?
	1	Yes
	0	No
BRW.7.1.2	7.1.2	Proper compaction of soil?
	1	Yes
	0	No
BRW.7.1.3	7.1.3	Sanctioned discharge? (LPS)
BRW.7.1.4	7.1.4	Is water supply
	1	Adequate
	2	Not-adequate
<i>If 'Adequate' in Q.# 3.5 then continue with Q.# 3.7</i>		<i>Otherwise continue with Q# 3.6</i>
BRW.7.1.5	7.1.5	Is there any additional water supply (via. tube well / lift machine) at the watercourse?
	1	Yes
	0	No
BRW.7.1.6	7.1.6	Lining length is as per design?
	1	Yes
	0	No
BRW.7.1.7	7.1.7	Select type of mogha/ outlet?
	1	Open-Type
	2	Closed
	3	Closed-Pipe
	4	Closed-Pump
BRW.7.1.8	7.1.8	Thickness of wall is as per design?
	1	Yes
	0	No
BRW.7.1.9	7.1.9	Depth of watercourse is as per design?
	1	Yes
	0	No
BRW.7.1.10	7.1.10	Width of watercourse is as per design?
	1	Yes
	0	No
BRW.7.1.11	7.1.11	Thickness of plaster at wall is adequate?
	1	Yes
	0	No
BRW.7.1.12	7.1.12	Thickness of bed is adequate?
	1	Yes
	0	No
BRW.7.1.13	7.1.13	Thickness of mortar at wall is adequate?
	1	Yes

	0	No
BRW.7.1.14	7.1.14	Free board height is as per design?
	1	Yes
	0	No
BRW.7.1.15	7.1.15	Back collar mortar is adequate?
	1	Yes
	0	No
BRW.7.1.16	7.1.16	Select quality of plaster?
	1	Good
	2	Satisfactory
	3	Not satisfactory
BRW.7.1.17	7.1.17	Select back filling of the lining portion?
	1	Good
	2	Satisfactory
	3	Not satisfactory
BRW.7.1.18	7.1.18	Rehabilitation of Katcha/ earthen portion of watercourse?
	1	Full length improved
	2	Only lined portion
Structures Fixing		
BRSF.7.2.1	7.2.1	Controlled structures for branch watercourse?
	1	Yes
	0	No
BRSF.7.2.2	7.2.2	Pacca naccas in improved area?
	1	Yes
	0	No
BRSF.7.2.3	7.2.3	Pacca naccas in Katcha area?
	1	Yes
	0	No
BRSF.7.2.4	7.2.4	Culverts in improved area?
	1	Yes
	0	No
BRSF.7.2.5	7.2.5	Drop structure in improved area?
	1	Yes
	0	No
BRSF.7.2.6	7.2.6	Wallow/buffaloes bath in improved area?
	1	Yes
	0	No
BRSF.7.2.7	7.2.7	Washing bay in improved watercourse?
	1	Yes
	0	No
<i>If Selected "PCPL" in Q.# 2.1 then continue with Q.# 8.0</i>		
4. Parabolic Watercourse		
PBW.8.0	8.0	Removal of vegetation from watercourse properly?
	1	Yes
	0	No
PBW.8.1	8.1	Is there a water supply?
	1	Adequate
	2	Not adequate
<i>If 'Adequate' in Q.# 8.1 then continue with Q.# 8.2</i>		<i>Otherwise continue with Q.# 8.3</i>
PBW.8.2	8.2	Is there any additional water supply (via. Tube well / lift machine) at water-course?
	1	Yes
	0	No

PBW.8.3	8.3	Lining length is as per design?
	1	Yes
	0	No
PBW.8.4	8.4	Total length of watercourse is as per design?
	1	Yes
	0	No
PBW.8.5	8.5	Select type of mogha / outlet?
	1	Open Flume
	2	AOSM
	3	Pipe Cum AOSM
	4	Scretchey Type
	5	Closed Pump
	6	Any other? Please specify
PBW.8.6	8.6	Select quality of pre-cast parabolic segments?
	1	Good
	2	Poor
PBW.8.7	8.7	Select filling of joints of the parabolic segments?
	1	Good
	2	Poor
PBW.8.8	8.8	Select slop of the parabolic segments?
	1	As per design
	2	Not as per design
PBW.8.9	8.9	Select back filling of Pre-Cast Parabolic Slabs?
	1	Proper
	2	Not proper
PBW.8.10	8.10	Rehabilitation of katcha/earthen portion of watercourse?
	1	Full length improved
	2	Only lined portion
Structures Fixing		
PBSF.8.2.1	8.2.1	Controlled structures for branch watercourse?
	1	Yes
	0	No
PBSF.8.2.2	8.2.2	Pacca naccas in improved area?
	1	Yes
	0	No
PBSF.8.2.3	8.2.3	Pacca naccas in Katcha area?
	1	Yes
	0	No
PBSF.8.2.4	8.2.4	Culverts in improved area?
	1	Yes
	0	No
PBSF.8.2.5	8.2.5	Drop structure in improved area?
	1	Yes
	0	No
PBSF.8.2.6	8.2.6	Wallow/buffaloes bath in improved area?
	1	Yes
	0	No
PBSF.8.2.7	8.2.7	Washing bay in improved watercourse?
	1	Yes
	0	No
If Selected "PVC/ RCC/PCC/HDPE" in Q.# 2.1 then continue with Q.# 9.0		
5. PVC and RCC Pipeline Watercourse		
PVRC.9.0	9.0	Excavation of trenches for water supply pipelines are as per specifications?

	1	Yes	
	0	No	
PVRC.9.1	9.1	Is there a water supply?	
	1	Adequate	
PVRC.9.2	2	Not adequate	
If 'Adequate' in Q.# 9.1 then continue with Q.# 9.2		Otherwise continue with Q.# 9.3	
PVRC.9.2	9.2	Is additional discharge (via. tube well / lift machine) at watercourse?	
	1	Yes	
PVRC.9.3	0	No	
	9.3	Select type of mogha / outlet?	
PVRC.9.3	1	Open-Type	
	2	Closed	
PVRC.9.4	3	Closed-Pipe	
	4	Closed-Pump	
PVRC.9.4	9.4	Select What kind of pipeline has been used?	
	1	RCC pipe	
PVRC.9.5	2	PVC pipe	
	3	G-I pipe	
PVRC.9.5	9.5	Pipeline length is as per design?	
	1	Yes	
PVRC.9.6	0	No	
	9.6	Bends as per design?	
PVRC.9.6	1	Yes	
	0	No	
PVRC.9.7	9.7	Sockets are as per design?	
	1	Yes	
PVRC.9.7	0	No	
PVRC.9.8	9.8	Air Valves are as per design?	
	1	Yes	
PVRC.9.8	0	No	
PVRC.9.9	9.9	Reducers are as per design?	
	1	Yes	
PVRC.9.9	0	No	
PVRC.9.10	9.10	Flanges are as per design?	
	1	Yes	
PVRC.9.10	0	No	
PVRC.9.11	9.11	Tee are as per design?	
	1	Yes	
PVRC.9.11	0	No	
PVRC.9.12	9.12	Non-return valves are as per design?	
	1	Yes	
PVRC.9.12	0	No	
PVRC.9.13	9.13	Cast iron sluice valve are as per design?	
	1	Yes	
PVRC.9.13	0	No	
PVRC.9.14	9.14	Select quality of pipeline?	
	1	Good	
PVRC.9.14	2	Satisfactory	
	3	Not satisfactory	
Structures Fixing			
PRSF.9.2.1	9.2.1	Controlled structures for branch watercourse?	
PRSF.9.2.2	9.2.2	Pacca naccas in improved area?	

PRSF.9.2.3	9.2.3	Pacca naccas in katcha area?
PRSF.9.2.4	9.2.4	Culverts in improved area?
MT.10.0	10.0	Supervisor Confirmation?
MT.10.1	10.1	Financial Year?
	2019-20	2019-20
	2020-21	2020-21
	2021-22	2021-22
	2022-23	2022-23
	2023-24	2023-24
MT.10.2	10.2	Select Submission Status?
	1	First Submission
	2	Second Submission (Re-submitted due to the error in previous entry)
	3	Third Submission (Re-submitted due to the error in previous entry)
MT.10.3	10.3	Comments of enumerator? (if any) (optional)

ANNEX-G: SPOT CHECKING TOOL FOR WATER STORAGE TANKS

SPOCT CHECK - MONITORING TEMPLATE - WST

DB.#	Q.#	Field Name
1. IDENTIFICATION		
ID.1.0	1.0	Zone / Unit?
ID.1.0.1	1.0.1	District?
ID.1.1	1.1	M&E Field Team?
	1	Team-1
	2	Team-2
	3	Team-3
ID.1.2	1.2	Select Type of Survey?
ID.1.3	1.3	Select Date of Survey?
ID.1.4	1.4	Name of Water Storage Tank?
ID.1.5	1.5	Select Improvement status of Water Storage Tank?
	1	Technical Sanction(TS) Issued
	2	Final Completion Report (FCR) Issued
ID.1.6	1.6	Collect the coordinates at? (Turn off wireless or mobile data for precise coordinates)
ID.1.6.1	1.6.1	Take picture at Water Storage Tank?
ID.1.6.2	1.6.2	Take picture of Signboard?
MT.2.0	2.0	Shape of Water Storage Tank?
	1	Rectangular
	2	Square
	3	Trapezoidal
	4	Brick/Masonry
	5	Geomembrane
	6	Any other? Please specify
MT.2.0Y	2.0Y	Define other shape of Water Storage Tank?
MT.3.1	3.1	Length-1 (Feet)?
MT.3.2	3.2	Width-1 (Feet)
MT.3.3	3.3	Depth (Feet)
MT.3.4	3.4	Water Storage Tank Storage Capacity?
2. SPOT CHECK		
MT.4.0	4.0	The farmer completed the Water Storage Tank using his/her own funds before subsidy?
	1	Yes
	0	No
MT.4.1	4.1	What benefits you can expect from Water Storage Tank?
	1	Reduce ground water consumption
	2	Reduce water bills
	3	Extend water supply
	4	Improve water quality/less salty water
	5	Reduce soil erosion
	6	Better control on water supply
	7	Any other? Please specify
MT.4.1Y	MT.4.1Y	Define any other benefits?
MT.4.2	4.2	The Water Storage Tank was completed as per approved standards and specifications?
	1	Yes
	0	No
MT.4.3	4.3	Excavation was done as per standard engineering practices?
	1	Yes

	0	No
MT.4.4	4.4	The NWM Consultants inspected the excavation and quality of geo-membrane and certified as satisfactory?
	1	Yes
	0	No
MT.4.5	4.5	Before filling the WST, the OFWM staff prepared the completion report?
	1	Yes
	0	No
MT.4.6	4.6	Any variations in specifications and material used?
	1	Yes
	0	No
MT.4.6.1	4.6.1	Subsidy was paid as per cost estimates based on geo-membrane design?
	1	Yes
	0	No
MT.4.7	4.7	Does the water depth in Water Storage Tank exceed 5 feet?
	1	Yes
	0	No
If "Yes" in Q.#4.7 then continue with Q# 4.7.1		Otherwise go to Q.#4.8
MT.4.7.1	4.7.1	Depth of water in Water Storage Tank?
MT.4.8	4.8	Is the geo-membrane thickness minimum 0.5 mm?
	1	Yes
	0	No
MT.4.9	4.9	Do all joints weld through fusion welding or other similar techniques?
	1	Yes
	0	No
If yes in Q#4.9 then continue with Q#4.9.1		Otherwise go to Q.#5.0
MT.4.9.1	4.9.1	Is the testing of Joints welded parts done before filling the Water Storage Tank?
	1	Yes
	0	No
MT.5.0	5.0	Supervisor Confirmation?
MT.5.1	5.1	Financial Year?
MT.5.2	5.2	Select Submission Status?
	1	First Submission
	2	Second Submission
	3	Third Submission
MT.5.3	5.3	Comments of enumerator? (if any) (optional)