



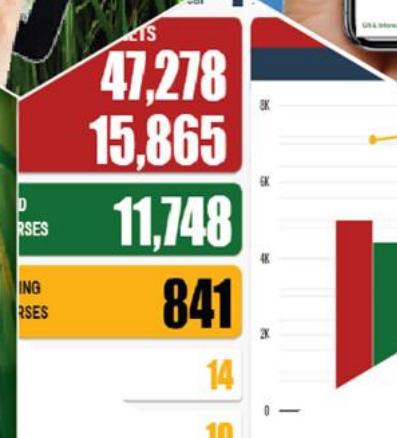
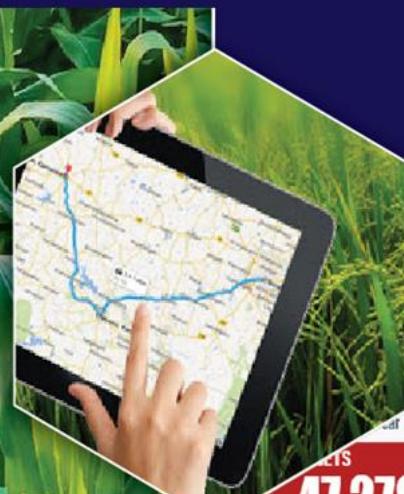
FEDERAL PROJECT MANAGEMENT UNIT
FEDERAL WATER MANAGEMENT CELL
MINISTRY OF NATIONAL
FOOD SECURITY & RESEARCH
ISLAMABAD - PAKISTAN

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

MONITORING, EVALUATION
AND IMPACT EVALUATION
CONSULTANTS



ENDLINE SURVEY REPORT (FINAL)



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



In Association with S&S Associates

+



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)

ENDLINE SURVEY REPORT (FINAL)
(UPDATED UP TO JUNE 2024)

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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
KP 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.

The National Program for Improvement of Watercourses, Phase-II (NPIWC-II), aimed at significantly enhancing agricultural productivity, water management efficiency, and farmer incomes through infrastructure improvement and community mobilization across Pakistan. This Impact Evaluation assesses the project's success against baseline benchmarks, clearly highlighting achievements and identifying areas for continued improvement.

The project's primary objectives included increasing cropping intensity, enhancing crop yields, improving equity in water distribution, and significantly reducing water-related disputes among farmers. 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 evaluation covered key project components, including:

- **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.

Progress Monitoring:

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

During the Project period (5 years), a total of 14,932 Water Storage Tanks were targeted to be constructed. By the end of June 2024, WSTs were constructed, thus showing only 40% achievement.

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

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

On an overall basis, 85% of farmers were aware about the existence / working of WUAs on their watercourses. About 87% of respondents informed that OFWM used to hold awareness meetings before the formation of the WUAs. About 71% members had been participating in the meeting of WUAs and 94% members reported that the WUAs were formed through the democratic process. Overall, 93% of respondent farmers were found to be

the members of WUAs of which 46% were located at the head of WC reaches, 29% at middle reaches and 25% at tail reaches and 90% of members were found water users of lined watercourses. About 91% of farmers reported that WUAs were functioning properly.

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

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

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

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

Impact Evaluation of Component C2 (Improvement of Watercourses)

The evaluation measured the impacts of watercourse improvements on agricultural productivity, water-use efficiency, cropping intensity, and farm incomes, comparing findings directly against established baseline benchmarks.

Land use intensity due to watercourse improvement on sample farms has increased on average by 5.5%, meaning thereby an increase of 5.5% in cultivated areas. Cropping intensity has increased by 10.6%. These increases in land use and cropping intensities have resulted in about 14.1% increase in cropped areas under various crops.

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

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

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

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

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

Water Conveyance Efficiency on 20% lined additional improved watercourses increases by 16%age point and on new 50% lined watercourses increase by 29%age point. On piped lined watercourses efficiency increases by 50%. On overall basis saving in water losses calculates to 34% of 154 AF per watercourse per annum.

Spot Checking Trees on Watercourses shows that 5,388 trees were cut down during the process of their improvement. As per rule, at least three times (16,164) trees were required to be planted in place of 5,388 cut down trees, however, during the spot check it was observed that only 9,258 saplings (57% of the required ones) were planted out of which, 2,844 were survived after one year of their plantation.

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

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

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

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

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

Zone / Unit	Increase in			
	Cultivated Area	Cropped Area	Gross Income	Net Income
			Acres	Million Rupees
Punjab	35,260	145,114	40,783	17,962
KP	5,494	43,146	6,202	3,004
Balochistan	54,547	147,897	17,781	8,928
GB	846	5,537	1,470	651
AJK	253	1,294	307	138
ICT	13	43	6	3
Overall	96,412	343,030	66,549	30,687

Watercourse improvements delivered significant agricultural productivity and economic benefits, reflecting increased efficiency and sustainability of irrigation practices. Continued efforts to maintain infrastructure quality and water management practices will ensure these benefits are sustained and expanded across project areas.

Impact Evaluation of Component C3 (Construction of WSTs)

The evaluation assessed the impacts of Water Storage Tanks (WSTs) on irrigation efficiency, cropping patterns, agricultural productivity, and economic indicators compared to baseline benchmarks.

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

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

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

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

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

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

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

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

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

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

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

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

Zone / Unit	Increase in			
	Cultivated Area	Cropped Area	Gross Income	
			Million Rupees	
Punjab	477	3,074	860	466
KP	758	3,078	743	404
Balochistan	1,840	4,590	1,057	576
GB	624	1,859	391	214
AJK	485	1,484	332	181
Overall	4,184	14,084	3,384	1,842

WST interventions significantly enhanced agricultural productivity, irrigation efficiency, and economic returns, clearly demonstrating their effectiveness in addressing water scarcity challenges. Sustained maintenance and further investment in similar infrastructure will amplify these gains.

Impact Evaluation of Component C4 (Provision of PLL)

The impact evaluation assessed Precision Land Leveling (PLL) interventions, focusing on water-use efficiency, improvements in crop yields, irrigation effectiveness, and economic returns at the farm level.

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

Suppliers of Precision (Laser) Land levelers: About 57% i.e., 180 PLL sample units were supplied by 4 Supply and Service Companies (SSCs), namely Easy Farming (61), Cross Field Agro (57), Ruba Digital Laser (46) and 21 by Modern Farming PLL Services. The other 133 sample units were supplied by other 14 different SSCs. Out of these 318 PLL units, 306 were delivered by these companies in the Punjab, 5 in KP and 7 in Balochistan.

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

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

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

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

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

The respondents were also asked about the availability of spare parts by the SSCs. Out of a total of 318 respondents, 26% responded that spare parts were available with SSCs whenever required, 6% informed that it took time long time, whereas the rest 68% informed that they did not need these spare parts yet.

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

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

While spot checking, all 318 (100%) respondents were using PLL for agricultural purposes. No respondent was found using PLL for non-agricultural purposes.

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

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

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

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

Impact of PLL on Crop yields: Impact of PLL on crop yield was also assessed through the farmers' perception. The growers were of the view that laser leveling increases yields of various crops ranging from 20% to 35% averaging at 24% on the whole. Economics and economic benefits of PLL use were also estimated. Total number of delivered PLL up to end of June 2024 is 6,219. At the rate of 394 acres per PLL, total area levelled by all the delivered PLL calculates as 2,450 thousand acres. Net benefits per PLL comes to 677 thousand PKR per annum and for total 6,219 delivered PLL these calculate to 4,213 million PKR.

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

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

PLL significantly enhanced water-use efficiency, agricultural productivity, and economic outcomes for beneficiary farmers. The high level of farmer satisfaction and demand indicates a clear opportunity for further expansion and scaling of PLL practices to maximize sustainable agricultural productivity and resource conservation.

Spot Checking & Quality Assurance:

Spot checks indicated notable improvements in compliance with construction standards, with 90% of the infrastructure meeting or exceeding set specifications. However, tree plantation compliance remained below optimal levels, requiring enhanced monitoring.

Waterlogging and salinity

Post-intervention assessments under NPIWC-II confirm that the watercourse improvement strategy has significantly mitigated waterlogging and salinity. A reported 35% reduction in waterlogged area (equivalent to 7,630 acres) and 32% decrease in salinity-affected land (or 7,055 acres) demonstrate the impact of partial lining, better management, and farmer engagement. Enhanced hydraulic efficiency, seepage control, and soil rehabilitation were noted as key outcomes, contributing to increased land productivity and improved water use. These results affirm the transformative role of infrastructure modernization in Pakistan's irrigated agriculture sector.

The baseline and impact assessment of Component C2 under NPIWC-II reveal compelling evidence of the program's success in addressing two critical challenges in Pakistan's irrigated agriculture: **waterlogging and salinity**. Improved watercourses demonstrate an overall 35% reduction in waterlogged areas and 32% decline in salinity-affected lands, with provincial-level variations confirming targeted effectiveness. These improvements, driven by the physical enhancement of watercourses, through lining, and better management—have not only reclaimed thousands of acres of agricultural land but have also restored productivity and improved water-use efficiency in historically degraded zones.

Economic and Social Benefits:

Economic analysis demonstrated strong project viability, with robust cost-benefit ratios and significant social impacts, including improved rural employment, increased farmer incomes, reduced water disputes, and strengthened community engagement in water management.

Conclusions and Key Recommendations:

The NPIWC-II successfully met most of its core objectives, delivering significant economic, social, and environmental benefits. However, to sustain and enhance these benefits, the following recommendations are proposed:

- Maintain robust quality assurance and compliance checks.

- Strengthen reforestation and environmental compliance measures.
- Expand PLL adoption to maximize water efficiency gains.
- Sustain WUA functionality through ongoing capacity-building programs.

Implementing these recommendations will ensure lasting agricultural productivity gains, economic resilience, and sustainable water resource management across Pakistan.

1. INTRODUCTION

The **National Program for Improvement of Watercourses, Phase-II (NPIWC-II)** is a key initiative by the Government of Pakistan, funded and coordinated through the Ministry of National Food Security and Research (MNFSR). The primary objective of NPIWC-II is to significantly enhance agricultural productivity, improve water-use efficiency, and boost farmers' incomes through targeted investments in irrigation infrastructure and community-based water management practices.

This comprehensive impact evaluation assesses project outcomes across the provinces and territories of Punjab, Khyber Pakhtunkhwa (KP), Balochistan, Gilgit Baltistan (GB), Azad Jammu and Kashmir (AJK), and Islamabad Capital Territory (ICT). The evaluation aligns directly with the project's baseline benchmarks, enabling clear measurement of impacts resulting from the project's implementation.

Primary objectives clearly articulated for the project included:

- Increasing cropping intensity across all project regions.
- Enhancing agricultural productivity through improved irrigation infrastructure.
- Reducing water-related disputes and promoting equitable water distribution.
- Improving farmer incomes through sustainable agricultural practices and infrastructure development.

The project execution involved several entities working closely together. The **Federal Water Management Cell (FWMC)**, along with provincial Directorates of On-Farm Water Management (OFWM), respective departments of GB, AJK, and ICT, and local Water Users Associations (WUAs), served as primary implementing agencies. Project supervision was managed by **NESPAK and consortium partners**, while comprehensive Monitoring, Evaluation, and Impact Evaluation (ME&IE) services were provided by the **ME&IE Consultants**. Coordination responsibilities remained with the **Federal Project Management Unit (FPMU)**.

This impact report comprehensively evaluates project achievements, assesses impacts against baseline data, and offers recommendations for sustaining and enhancing the project's long-term benefits.

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, 50% lining of the total watercourse length as decided in the high-level meeting, and installation of water control structures. It is expected to save annually a total of around 5.82 million acre-feet (MAF) water or 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 1**.

1.3.2. Component C2: Improvement of Watercourses

A total of 47,278 watercourses are planned to be improved under NPIWC-II. 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
KP	3,000	10,000	13,000	13,000
Balochistan	3,589	16,800	20,389	20,389
GB	-	2,500	2,500	2,500
AJK	-	1,165	1,165	1,165
ICT	-	224	224	224
Overall	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 NPIWC-II. 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
KP	5,000
Balochistan	5,507
GB	825
AJK	600
Overall	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 NPIWC-II. 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
GB	5	1.5
AJK	5	1.5
Overall	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 benefitting is expected to be 8.34 million people.

1.6. Project Development Objectives (PDO)

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)	PKR/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)	PKR/M ³	8	3	3
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 benefitted 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	At Completion of Physical works/ activities
10	Final Assignment Completion Report	25	At completion of Physical and financial activities
11	Special Reports	10	As and when required

At the completion of the assignment, ME&IE Consultants are required to submit Endline Survey Impact Evaluation report. Thus, in compliance with its contractual requirement, the ME&IE Consultants have prepared this report, which evaluates Project's mid-term Monitoring and Impact assessment results up to end June 2024 until unless mentioned otherwise elsewhere. It is to be clarified here that these assessments are, however, not final. Rather these are interim and until all the surveys and studies are completed after the termination of all project activities, these will remain indicative. Thus, these assessments are just as interim or indicative and not final for the time being.

The report contains the following sections, annexes, and appendices:

EXECUTIVE SUMMARY

1. INTRODUCTION
2. METHODOLOGY FOR MONITORING AND IMPACT EVALUATION
3. PROGRESS MONITORING
4. MONITORING EVALUATION OF, COMPONENT C1.
5. IMPACT EVALUATION OF COMPONENT C2.
6. IMPACT EVALUATION OF COMPONENT C3.
7. IMPACT EVALUATION OF COMPONENT C4.
8. WATERLOGGING AND SALINITY
9. PROJECT ECONOMIC ANALYSIS
10. REFERENCES

ANNEX-A: MONITORING LOG-FRAME

ANNEX-B: DISTRICT-WISE BASELINE SURVEY SAMPLE DISTRIBUTION

ANNEX-C: WATERCOURSES ZONE-WISE IMPACT FIELD SURVEY SCHEDULE

ANNEX-D: WATER STORAGE TANKS ZONE WISE IMPACT FIELD SCHEDULE

ANNEX-E: PLL ZONE WISE IMPACT FIELD SCHEDULE

ANNEX-F: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON CROP AREA AND CROPPING PATTERN

ANNEX-G: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON CROP YEILD ON SAMPLE FARMS

ANNEX-H: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON CROP PRODUCTION

ANNEX-I: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON AGRICULTURE EMPLOYMENT

ANNEX-J: ZONE-WISE IMPACT OF WATER TANKS ON CROP AREA AND CROPPING PATTERN

- ANNEX-K: ZONE-WISE IMPACT OF WATER TANKS ON CROP YIELDS
- ANNEX-L: ZONE-WISE IMPACT OF WATER TANKS ON CROP PRODUCTION
- ANNEX-M: ZONE-WISE IMPACT OF WATER TANK ON AGRICULTURE EMPLOYMENT
- ANNEX-N: WUA MONITORING AND WATERCOURSE IMPACT TOOL
- ANNEX-O: WATER STORAGE TANKS IMPACT TOOL
- ANNEX-P: SPOT CHECKING OF WATERCOURSES TOOL
- ANNEX-Q: SPOT CHECKING FOR WATER STORAGE TANKS TOOL
- ANNEX-R: PLL MONITORING TOOLS

2. METHODOLOGY FOR MONITORING AND IMPACT EVALUATION

A stratified random sampling 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.

Samples calculated for total targets (sampling frames) under original methodology and for the completed schemes or achieved targets under revised methodology for WUAs Mobilization, Watercourse Improvement, Water Storage Tanks Construction and PLL delivery components are given in **Tables 8 through 10**.

Table 8: Sample Size for WUAs Mobilization and Watercourses Improvement Components

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

Table 10: Sample Size for PLL Delivery Component

Zone / Unit	Original Methodology			Revised Methodology			Sample Size
	Activity Targets	Sample %age	Sample Size	Completed Schemes	Sample %age	Sample Size	
Punjab	9,500	2%	190	6122	5%	306	
KP	600	5%	30	50	5%	3	
Balochistan	1,500	2%	30	37	5%	2	
GB	5	20%	1	5	20%	1	
AJK	5	20%	1	5	20%	1	
Overall	11,610	2.17%	252	6219	5%	313	

2.2. Surveys for Impact Evaluation

For evaluating the impact of watercourses improvement and WSTs construction, first, baseline surveys are conducted after the issuance of Technical Sanctions (TSs) and then after full one year of completion of Watercourses or WST construction, Impact Surveys are carried out to determine the impact of the interventions on 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. For PLL delivery, Impact Surveys are conducted after one year of their delivery to the farmers / service providers. For evaluating the performance of Water Users Associations (WUAs), the sample of Watercourse Improving Component is adopted.

Baseline and impact surveys are carried out, the beneficiaries of project activities are interviewed and data from them are collected by field teams on pre-designed data collection tools through an android-based application on TABs. For each survey, data collection teams are arranged and their composition, data collection program as well as data collection templates are shared with NPC before sending the teams in the field. Baseline and Impact surveys are carried out in phases as target watercourses and WSTs are not pre-selected. Baseline surveys are carried out before the intervention but after the issuance of technical sanctions and the impact surveys are carried out after one year (two crop seasons) of the completion of the intervention. The information is collected by recall method from the beneficiaries. The end line study will assess the impact of the project interventions at the end of the Project.

The Impact surveys of PLL, monitoring evaluation surveys of WUAs and spot-checking surveys of the completed Watercourses and Water Storage Tanks are also conducted on pre-designed data collection tools through an android-based application on TABs. Monitoring evaluation surveys of WUAs and spot-checking surveys of the completed Watercourses and Water Storage Tanks are conducted by the same teams deputed to collect baseline and impact information for Watercourses and Water Storage Tanks. For PLL Impact Surveys, however, separate teams are formed to collect the required information.

2.3. Sampling Procedure for Monitoring & Impact Evaluation

2.3.1. WUAs Monitoring Evaluation

For conducting monitoring evaluation 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 tools through an android-based application on TABs.

2.3.2. Baseline and Impact Surveys for Watercourses

For conducting baseline and impact surveys on watercourses, two stage sampling is 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, two growers each at head, middle and tail reaches. However, on the watercourses having 6 or less 6 growers, all the growers are interviewed.

2.3.3. Baseline and Impact Surveys for Water Storage Tanks

For conducting baseline and impact surveys for Water Storage Tanks, sample farmers are directly selected at random from the sampling frame or from the completed schemes as explained in section 2.1 above.

2.3.4. Impact Surveys for Precision Land Leveling

For conducting impact surveys for Precision Laser Land Leveling, sample farmers are directly selected at random from the sampling frame or from the completed schemes as explained in section 2.1 above.

2.4. Water Saving Estimation

2.4.1. Water Saving on Watercourses

Water flow is measured on sample watercourses selected for the baseline and impact surveys. The flow is measured before and after the WC improvement at three points for 50% lined WCs i.e., close to water outlet, 50% and 75% distances from outlet (MOGHA). The measurements are carried out through current pigmy meters. Based on water savings on sample watercourses, total water savings are estimated for all project watercourses. The savings are reported per watercourse, per annum and aggregate for the project in LPS and Acre feet.

2.4.2. Water Savings on WSTs

Since WSTs are filled and emptied on a continuous basis, the water savings have to be assessed on the basis of water pumped from the tank to irrigate the fields. The assessment has to be done either by reading on the pump gauge or periodically interviewing the farmer. Based on water savings on sample WSTs, total water savings are estimated for all project WSTs. The savings are reported per WST, per annum and aggregate for the project in LPS and in Acre feet.

2.4.3. Water savings due to Precision Laser Land Leveling

Water savings at field level are assessed through Impact surveys on the basis of farmers' perception interviews. The impact survey form includes questions to be asked from the farmers who got their land leveled: (a) In how much time an acre was irrigated before land leveling (b) In how much time an acre is irrigated after land leveling. The difference is water saving due to laser land leveling. Based on water savings on sample PLL units, total water savings are estimated for all project PLL units. The savings are reported per PLL unit, per annum and aggregate for the project in LPS and in Acre feet.

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. Economic Benefits Assessment for Agriculture

Agriculture data is collected before (baseline) and after (impact) the watercourse improvement and WSTs construction. In both the surveys the same forms are used, and the same sample farmers are interviewed. Data on variables such as crop yields, irrigated area, cropping pattern, cropping intensity, farm income and employment are collected and analyzed. The difference between before and after situations is assumed as economic benefits to agriculture. These benefits are assessed using the constant prices of the commodities, i.e., same (based year) prices for before and after situations to nullify the impact of general inflation in the economy.

2.7. Impact Evaluation on the Economy

The results of the baseline and impact surveys are used to quantify the impact on the economy. Additional food produced due to the project is estimated. It is benefit towards food security. Project costs and benefits are compared in economic and financial terms to carry out economic and financial analysis. Project Economic Evaluation Tools including Internal Rate of Return (IRR), Net Present Value (NPV) and Benefit Cost Ratios (BCR) are also estimated.

2.8. Impact Evaluation on the Stakeholders

Impact Evaluation Analysis is also carried out with reference to various stakeholders, like community, government, farmers, etc.

2.9. 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.

2.10. Ensuring Data Quality and Validity:

To guarantee data accuracy, extensive enumerator training was conducted prior to fieldwork, supported by ongoing 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.

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 detail of work completed by end December 2022 is given below:

3.1. Improving Watercourses

During the Project period (5 years), a total of 47,278 watercourses were targeted to be improved. By the end of June 2024, 14,443 watercourses have been improved, which are 31% of the total project 5 years targets. Obviously, end-term target 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 11 and Figure 1** below:

Table 11: 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%
KP	13,000	3,285	25%
Balochistan	20,389	4,510	22%
GB	2,500	913	37%
AJK	1,165	586	50%
ICT	224	41	18%
Overall	47,278	14,443	31%

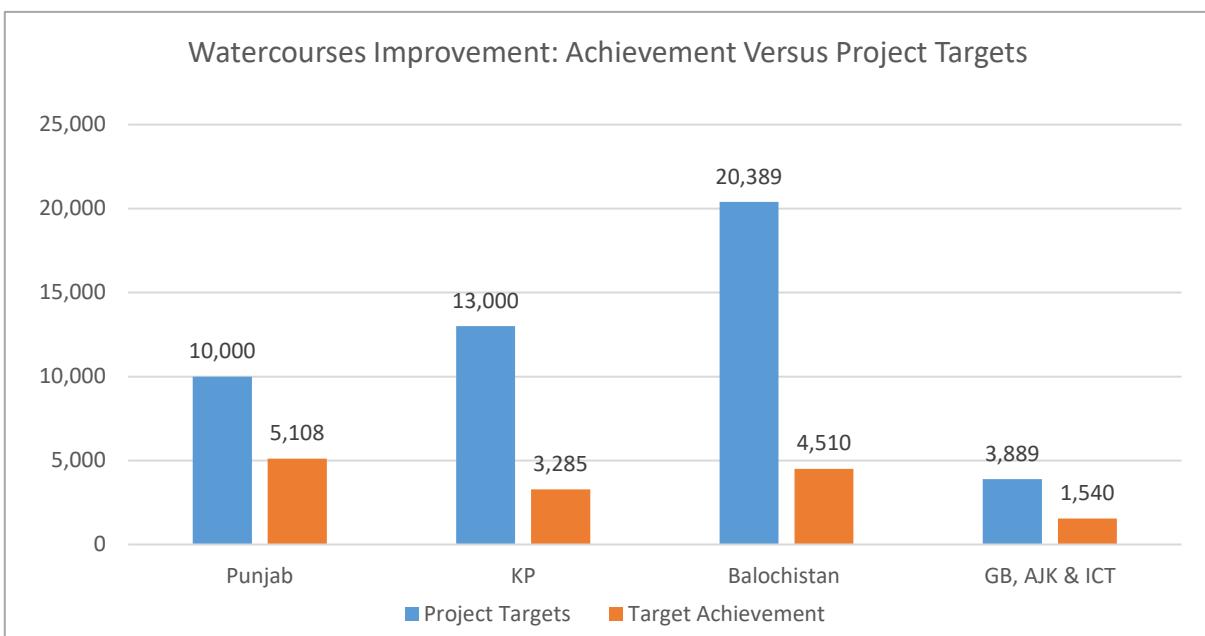


Figure 1: Watercourses Improvement: Achievements versus Project Targets

3.2. Constructing Water Storage Tanks (WSTs)

During the Project period (5 years), a total 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, Endline target 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 12** and **Figure 2** below:

Table 12: 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%
KP	5,000	1225	25%
Balochistan	5,507	2670	48%
GB	825	455	55%
AJK	600	444	74%
Overall	14,932	5,915	40%

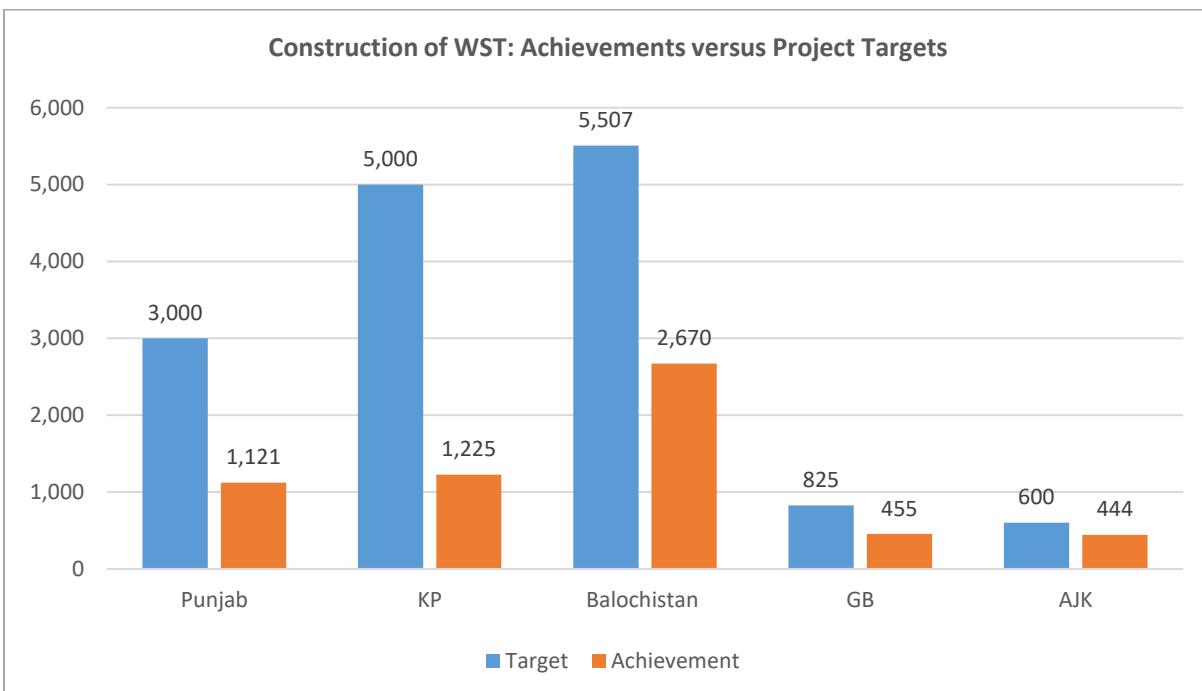


Figure 2: Construction of WST: Achievements versus Project Targets

3.3. Delivery of Precision Laser Land Leveling (PLL) Units

During the Project period (5 years), a total number of 11,610 Precision Laser Land Leveling (PLL) Units were targeted to be delivered. By the end of June 2024, 6,219 PLL Units have been delivered which are 54% of total project 5 years targets. This short fall is only 36% (100%-64%) in Punjab, but 98 (100%-2%) in Balochistan and 92% (100%-8%) in KP province. However, 100% PLL delivered as per target in GB and AJK province.

Further zone wise / unit wise detail target achievements may be seen in **Table 13** and **Figure 3** below:

Table 13: Provision of PLL Units: Achievements versus Project Targets by the End of June, 2024

Zone/Unit	Project Targets	Targets Achievement by the end of June 2024	
		Physical Achievement	Per cent Achievement of
Punjab	9,500	6122	64%
KP	600	50	8%
Balochistan	1,500	37	2%
GB	5	5	100%
AJK	5	5	100%
Overall	11,610	6,219	54%

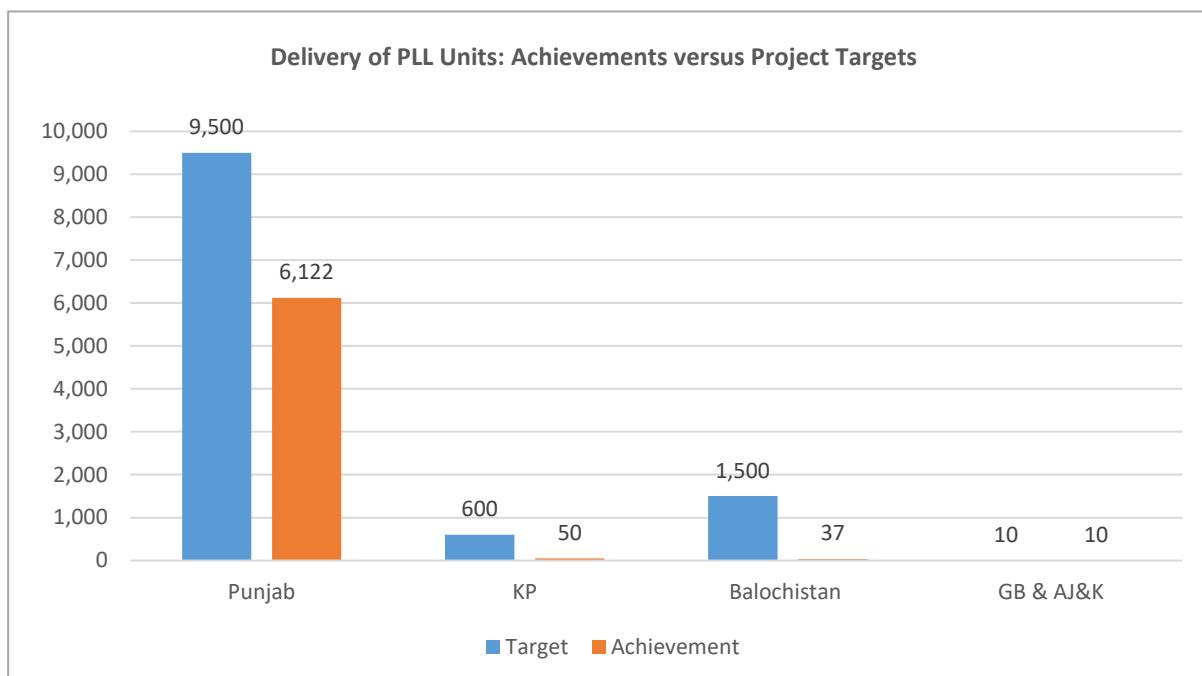


Figure 3: Delivery of PLL Units: Achievements versus Project Targets

4. MONITORING EVALUATION OF 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:** Farmer awareness increased significantly, from **85% at baseline to 99% post-project**, demonstrating successful outreach.
- **Democratic Formation and Functionality:** About **94% of WUAs** were democratically established, maintaining strong legitimacy throughout the project.
- **Meeting Regularity:** Regular meetings were consistently held by **72% of WUAs**, up from **49% at baseline**, indicating improved community engagement.
- **Participation:** Active farmer participation increased from **71% at baseline to 90% post-project**, reflecting effective community mobilization.
- **Conflict Resolution:** The rate of resolved water-related disputes rose markedly, with **90% of reported disputes resolved by WUAs**, significantly reducing local conflicts.

The significant increase in farmer awareness, participation, and dispute resolution effectiveness clearly indicates enhanced functionality and sustainability of WUAs. Continued capacity-building initiatives will sustain these gains, further strengthening community water management in project areas. 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 14**, which highlights regional variations in WUA awareness levels.

Table 14: 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	3,310	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 15** below:

Table 15: 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	0%	100%
Overall	2826	87%	13%

Out of total 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 16** below:

Table 16: 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 WUAs 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 17** below:

Table 17: 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% of 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 18** below:

Table 18: 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 19**.

Table 19: Distribution of WUA's Members 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 details may be seen in **Table 20** below.

Table 20: WUA's Members 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 91% of the farmers aware of WUAs reported that WUAs were functioning properly.

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

Table 21: 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 (9%) 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 22**.

Table 22: Reasons for 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 23**.

Table 23: 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 the remaining 4% did not give any response.

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

Table 24: 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 25**.

Table 25: 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%	0%
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 26**.

Table 26: 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%	0%	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 27**.

Table 27: Frequency of WUA's Meetings

Zone/Unit	Total Member Respondents	Every Month	Quarterly	Once an 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%	0%
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 28**.

Table 28: 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%
GB	169	42%	5%	53%
AJK	177	57%	0%	43%
ICT	2	0%	0%	0%
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 29**.

Table 29: 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	0%	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 30** below.

Table 30: 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 31** below.

Table 31: 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%	0%	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 32** below.

Table 32: 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 33** below.

Table 33: 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 34** below:

Table 34: 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. IMPACT EVALUATION OF COMPONENT C2

For conducting Impact Evaluation of Component C2 and in order to assess the agro-Economic impacts of Watercourses Improvement, before and after approach has been used as given in the inception report. Information about this component has been collected through **ANNEX-N**. For this purpose, baseline and impact survey/ studies have to be conducted @ 5% sample of completed schemes under revised methodology. Thus, for 14,443 completed watercourses, baseline and impact sample size works out 722. As of the end of June 2024, the baseline and impact surveys have been completed on 744 watercourses. Consequently, the impact assessment has been conducted on 744 watercourses, rather than the required sample of 722 as per completed schemes up to June 2024.

As indicated in **Table 35**, the required baseline sample size is 722. However, the actual sample sizes used for both the baseline and impact surveys were 744, exceeding the required sample size. A comprehensive profile of the 744 watercourses included in the impact survey is provided below:

5.1. Profile of Sample Watercourses

For studying profile of sample Watercourses, Monitoring Template MT-01 was used.

5.1.1. Impact Sample Size

Up to the end of June 2024, total Water Courses improved are 14,443. The required Sample size for this watercourses @ 5%, calculates 722 watercourses, however, actual baseline sample drawn is 744 watercourses and impact survey also cover 744 watercourses as mentioned below.

Zone / Unit wise distribution of this sample is shown in **Table 35**.

Table 35: Impact Sample Size for Monitoring Evaluation of Watercourses

Zone/ Unit	Completed Schemes	5% Sample	BLS	Impact
			Up to June 2024	
Punjab	5,108	255	250	250
KP	3285	164	205	205
Balochistan	4510	226	203	203
GB	913	46	40	40
AJK	586	29	39	39
ICT	41	2	7	7
Overall	14,443	722	744	744

5.1.1. 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, when the number of farmers on a watercourse was less than 6, all the farmers were selected. The total number of farmers interviewed in impact surveys was 3,310 and average respondents per watercourse were 4.45 detail of which is given in **Table 36** below.

Table 36: Respondent Sample Farmers on 744 Sample Watercourses

Zone/Unit	Total WC	Baseline	Impact	Average Respondents per WC
Punjab	250	1500	1500	6.00
KP	205	883	883	4.31
Balochistan	203	510	510	2.51
GB	40	211	211	5.28
AJK	39	199	199	5.10
ICT	7	7	7	1.00
Overall	744	3310	3310	4.45

5.1.2. Types of Sample Watercourses

There are three types of watercourses to be lined under NPIWC-II. 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 37** below.

Table 37: 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

5.1.3. Types of Lining of 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 total 744 Endline sample watercourses, 30 are rectangular /bricks lined, 347 are PCP lined, 185 PVC Pipelined, 74 PCC Pipelined, 77 HDPE Pipelined, 1 Stone masonry lined and 30 mixed lining types. Zone / Unit wise sample distribution has been shown in **Table 38** below.

Table 38: ample Watercourses According to Type of Lining

Zone/Unit	Total Sample WC	Rectangular /Bricks	PCP	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

5.1.4. Water Source of 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 39** below.

Table 39: 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

5.1.5. Water Source of Sample Non-Canal 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 40**.

Table 40: 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

5.1.6. Location of Sample Canal Watercourses

Location wise distribution of sample watercourse on head, middle and tail of the minors / distributaries is given in **Table 41** below. Out of a total of 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 41: 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

5.1.7. Quality of Ground Water

Out of 744 sample watercourses, 583 (78%) fell in the sweet water area and 161 (22%) in the Brackish water zone. Zone / Unit wise break up is given in **Table 42** below.

Table 42: 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	-
AJK	39	39	-
ICT	7	7	-
Overall	744	583	161

5.1.8. 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 43** below.

Table 43: 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 44** and that of tenure in **Table 45**.

Table 44: 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%)	-	-
AJK	199	199 (100%)	-	-
ICT	7	7 (100%)	-	-
Overall	3310	2745 (83%)	365 (11%)	200 (6%)

Table 45: 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%)	-	-
AJK	199	199 (100%)	-	-
ICT	7	7 (100%)	-	-
Overall	3310	2916 (88%)	150 (5%)	244 (7%)

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 46** below.

Table 46: 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%)
Overall	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 47** and depicted in **Figure 4**. It may be seen from **Table 47** 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 47: 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	3.19
Overall	26052.3	3310	7.87

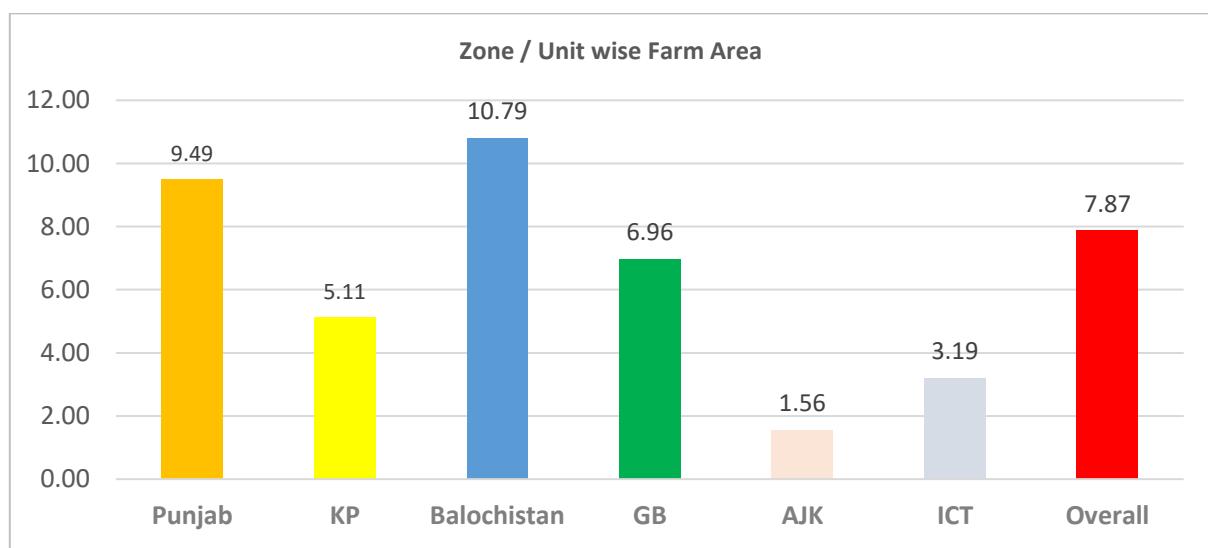


Figure 4: Average Farm Area of Watercourse Sample Farms

5.3. Agro Economic Impact of Watercourses Improvement

5.3.1. Impact of Watercourses Improvement on Land Use

5.3.1.1. Impact on Cultivated Area

Cultivated areas are defined as part of the farm area which is under cultivation by the farmer or on which crops are / can be sown by the farmers. 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 area is always less than or equal to the Farm area. Additional availability of the water or saved water can increase the area under cultivation. Thus, the impact of additional availability of water or saved water on cultivated areas both on sample farms and at all farms on all Completed Watercourses have been given in **Table 48**.

Table 48: Impact of WC Improvement on Cultivated Area (In acres)

Zone/Unit	Cultivated Area on Sample Farms			Cultivated Area on all Farms on all Completed WC			Per cent Increase
	Before WC Improvement	After WC Improvement	Increase/Impact	Before WC Improvement	After WC Improvement	Increase/Impact	
Punjab	13,390	13,718	328	1,440,814	1,476,074	35,260	2.45%
KP	4,118	4,246	128	177,174	182,669	5,494	3.10%
Balochistan	3,932	4,894	962	222,987	277,534	54,547	24.46%
GB	1,273	1,288	15	72,068	72,914	846	1.17%
AJK	280	287	6	10,905	11,157	253	2.32%
ICT	18	20	2	120	133	13	10.57%
Overall	23,012	24,452	1,441	1,924,067	2,020,480	96,412	5.01%

5.3.1.2. Impact on Overall Land Use Intensities

As the land use intensity is defined as ratio of cultivated area and farm area and the cultivated area is always less than or equal to farm area, hence, by definition land use intensity is always less than or equal to one or 100%. It can never exceed unity or 100%. While analyzing the land use pattern of the respondent farms, it was found that land use intensity has increased on an overall basis from 88.3% to 93.9%. Zone / Unit wise break up / detail has been given in **Table 49** and depicted in **Figure 5**. The highest increases of 17.5%age points and 8.5%age points have been noted in Balochistan and ICT whereas the lowest have been in GB (1.0%age point) and in AJK (2.1%age points).

Table 49: Impact of WC Improvement on Overall Land Use Intensities on Sample Farms

Zone/Unit	Total Farm Area of Sample Farms (Acres)	Total Cultivated Area of Sample Farms (Acres)		Land Use Intensity (%)		
		Before WC Improvement	After WC Improvement	Before WC Improvement	After WC Improvement	Increase/Impact
Punjab	14,235	13,390	13,718	94.1%	96.4%	2.3%
KP	4,512	4,118	4,246	91.3%	94.1%	2.8%
Balochistan	5,503	3,932	4,894	71.5%	88.9%	17.5%
GB	1,469	1,273	1,288	86.7%	87.7%	1.0%
AJK	311	280	287	90.1%	92.2%	2.1%
ICT	22	18	20	80.3%	88.8%	8.5%
Overall	26,052	23,012	24,452	88.3%	93.9%	5.5%



Figure 5: Impact of Watercourses Improvement on Land Use Intensities on Sample Farms

5.3.1.3. Impact on Land Use on Canal Command Sample Farms

On canal command areas, Impact on land use has been shown in **Table 50**. The average increase in land use intensity on canal command areas has been noted 3.6%.

Table 50: Impact of WC Improvement on Land Use on Canal Command Sample Farms

Zone /Unit	Farm Area (Acres)	Before WC Improvement		After WC Improvement		Impact of Improvement	
		Cultivated Area (Acres)	Land Use Intensity (%)	Cultivated Area (Acres)	Land Use Intensity (%)	Cultivated Area (Acres)	Land Use Intensity (%)
Punjab	14,235	13,390	94.1%	13,718	96.4%	328	2.3%
KP	880	839	95.3%	857	97.4%	18	2.1%
Balochistan	1,310	1,016	77.6%	1,269	96.9%	252	19.3%
GB	-	-	0.0%	-	0.0%	-	0.0%
AJK	-	-	0.0%	-	0.0%	-	0.0%
ICT	-	-	0.0%	-	0.0%	-	0.0%
Overall	16,424	15,245	92.8%	15,844	96.5%	598	3.6%

5.3.1.4. Impact on Land Use on Non-Canal Command Sample Farms

On non-canal command areas, Impact on land use has been shown in **Table 51**. Average increase in land use intensity on non-canal command areas has been noted 8.7%.

Table 51: Impact of WC Improvement on Land Use on Non-Canal Command Sample Farms

Zone /Unit	Farm Area (Acres)	Before WC Improvement		After WC Improvement		Impact of Improvement	
		Cultivated Area (Acres)	Land Use Intensity (%)	Cultivated Area (Acres)	Land Use Intensity (%)	Cultivated Area (Acres)	Land Use Intensity (%)
Punjab	-	-	-	-	-	-	-
KP	3,633	3,279	90.3%	3,389	93.3%	109	3.0%
Balochistan	4,193	2,916	69.5%	3,625	86.5%	710	16.9%
GB	1,469	1,273	86.7%	1,288	87.7%	15	1.0%
AJK	311	280	90.1%	287	92.2%	6	2.1%
ICT	22	18	80.3%	20	88.8%	2	8.5%
Overall	9,628	7,766	80.7%	8,609	89.4%	842	8.7%

5.3.2. Impact of Watercourses Improvement on Crops

5.3.2.1. Impact on Overall Cropped Area

Another indicator used to measure agricultural efficiency is the number of crops grown during the crop year on a single piece of cultivated land. It is quite possible that during the year, all the cultivated area might not be cultivated and some of it is left fallow (unplanted) due to shortage of water or non-availability of some other critical factor. 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. The impact of additional water saved through watercourses improvement both on sample farms and on all farms on all completed watercourses is shown in **Table 52** below.

Table 52: Impact of WC Improvement on Overall Cropped Area

Zone/Unit	Cropped Area on Sample Farms				Cropped Area on all Farms on all Completed Watercourses		
	Before WC Improvement	After WC Improvement	Increase/ Impact		Before WC Improvement	After WC Improvement	Increase/ Impact
			Acres	%			
Punjab	25,297	26,646	1,349	5.33%	2,722,012	2,867,126	145,114
KP	4,213	5,216	1,003	23.81%	181,244	224,390	43,146
Balochistan	4,455	7,063	2,608	58.54%	252,640	400,537	147,897
GB	1,674	1,772	98	5.84%	94,741	100,278	5,537
AJK	470	503	33	7.08%	18,288	19,582	1,294
ICT	27	33	6	23.94%	180	223	43
Overall	36,135	41,232	5,097	14.11%	3,269,106	3,612,136	343,030

5.3.2.2. Impact on Overall Cropping Intensities on Sample Farms

By definition the cropping intensity (the ratio between the cropped area and cultivated area) may be less than, equal to or greater than unity or 100%. The impact of watercourses improvement on cropping intensities is given in **Table 53** below. On an overall basis, cropping intensity has increased by 11.6% point. Zone wise Impact or increases in cropping intensities has been given in **Table 53** and shown in **Figure 6**. The highest increase of 31.0%age point has been recorded in Balochistan whereas lowest increase of 5.3%age point found in the Punjab.

Table 53: Impact of WC Improvement on Overall Cropping Intensities on Sample Farms

Zone/Unit	Total Cultivated Area of Sample Farms		Total Cropped Area of Sample Farms		Cropping Intensities		
	Before WC Improvement	After WC Improvement	Before WC Improvement	After WC Improvement	Before WC Improvement	After WC Improvement	Increase/ Impact
Punjab	13,390	13,718	25,297	26,646	188.9%	194.2%	5.3%
KP	4,118	4,246	4,213	5,216	102.3%	122.8%	20.5%
Balochistan	3,932	4,894	4,455	7,063	113.3%	144.3%	31.0%
GB	1,273	1,288	1,674	1,772	131.5%	137.5%	6.1%
AJK	280	287	470	503	167.7%	175.5%	7.8%
ICT	18	20	27	33	149.7%	167.8%	18.1%
Overall	23,012	24,452	36,135	41,232	157.0%	168.6%	11.6%

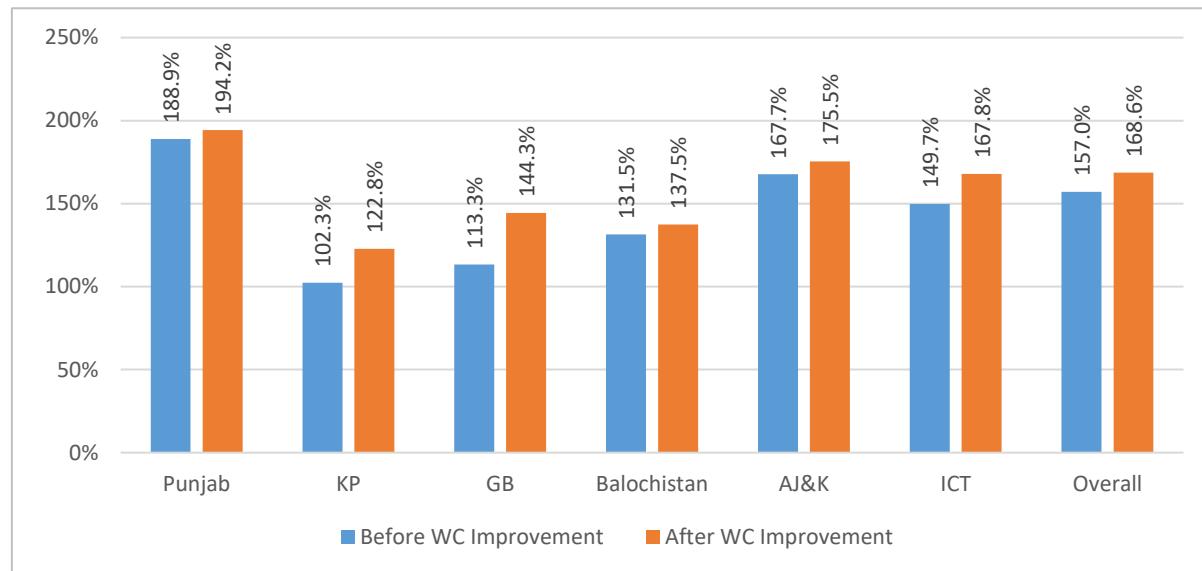


Figure 6: Impact of Watercourses Improvement on Cropping Intensities on Sample Farms

5.3.2.3. Impact on Cropping Intensities on Canal Command Sample Farms

On canal command areas, Impact on cropping intensity has been shown in **Table 54**. Average increase in cropping intensity on canal command areas has been noted 7.9%.

Table 54: Impact of WC Improvement on Cropping Intensities on Canal Command Sample Farms

Zone/Unit	Total Cultivated Area of Sample Farms		Total Cropped Area of Sample Farms		Cropping Intensities		
	Before WC Improvement	After WC Improvement	Before WC Improvement	After WC Improvement	Before WC Improvement	After WC Improvement	Increase/Impact
Punjab	13,390	13,718	25,297	26,646	188.9%	194.2%	5.3%
KP	839	857	903	1,109	107.7%	129.4%	21.7%
Balochistan	1,016	1,269	1,195	1,963	117.6%	154.7%	37.1%
GB	-	-	-	-	-	-	-
AJK	-	-	-	-	-	-	-
ICT	-	-	-	-	-	-	-
Overall	15,245	15,844	27,396	29,718	179.7%	187.6%	7.9%

5.3.2.4. Impact on Cropping Intensities on Non-Canal Command Sample Farms

On non-canal command areas, Impact on cropping intensity has been shown in **Table 55**. The average increase in cropping intensity on non-canal command areas has been noted 21.2%.

Table 55: Impact of WC Improvement on Cropping Intensities on Non-Canal Sample Farms

Zone/Unit	Total Cultivated Area of Sample Farms		Total Cropped Area of Sample Farms		Cropping Intensities		
	Before WC Improvement	After WC Improvement	Before WC Improvement	After WC Improvement	Before WC Improvement	After WC Improvement	Increase/Impact
Punjab	-	-	-	-	-	-	-
KP	3,279	3,389	3,310	4,107	100.9%	121.2%	20.3%
Balochistan	2,916	3,625	3,260	5,100	111.8%	140.7%	28.9%
GB	1,273	1,288	1,674	1,772	131.5%	137.5%	6.1%
AJK	280	287	470	503	167.7%	175.5%	7.8%
ICT	18	20	27	33	149.7%	167.8%	18.1%
Overall	7,766	8,609	8,739	11,515	112.5%	133.8%	21.2%

5.3.3. Impact of Watercourses Improvement on Crop Yields

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 5.3.1 and 5.3.2 above) reflecting crop area under various crops. Moreover, it also 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, the impact of improving watercourses on crop yields has been shown. These impacts have been given in **Table 56** and in **Figures 7, 8 and 9** below. It may be seen from **Table 56** that yield of various crops has increased by 4.2% in the case of Kharif Fodder to 49% in case of other vegetables. However, the average weighted impact of watercourses improvement on overall crop Yields has been around 12.3%.

Table 56: Impact of Watercourse Improvement on Crop Yields on Sample Farms

Crops	Crop Yields			Impacts of WC Improvement
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs) per Acre	
			Percent	
Wheat	30.48	32.84	2.36	7.7%
Rice	28.19	31.55	3.37	11.9%
Cotton	26.17	28.59	2.41	9.2%
Maize	47.97	50.93	2.96	6.2%
Sugarcane	728.79	772.36	43.57	6.0%
Oil Seeds	17.10	17.39	0.30	1.7%
Pulses	5.43	6.32	0.90	16.6%
Tobacco	58.69	62.21	3.52	6.0%
Okra	111.15	120.78	9.63	8.7%
Onions	166.62	187.72	21.10	12.7%
Potato	193.27	216.88	23.61	12.2%
Tomato	99.33	116.94	17.61	17.7%
Other Vegetables	75.40	139.13	63.73	84.5%
Apple	93.00	102.60	9.60	10.3%
Peach	100.17	105.05	4.88	4.9%
Other Fruits	96.11	106.03	9.92	10.3%
Rabi Fodder	383.52	418.31	34.79	9.1%
Kharif Fodder	357.15	365.91	8.76	2.5%
Weighted Average Percent of Yield Impact				12.3%

Zone / Unit wise breakup of the Impact on Crop Yields has given in ANNEX-G.

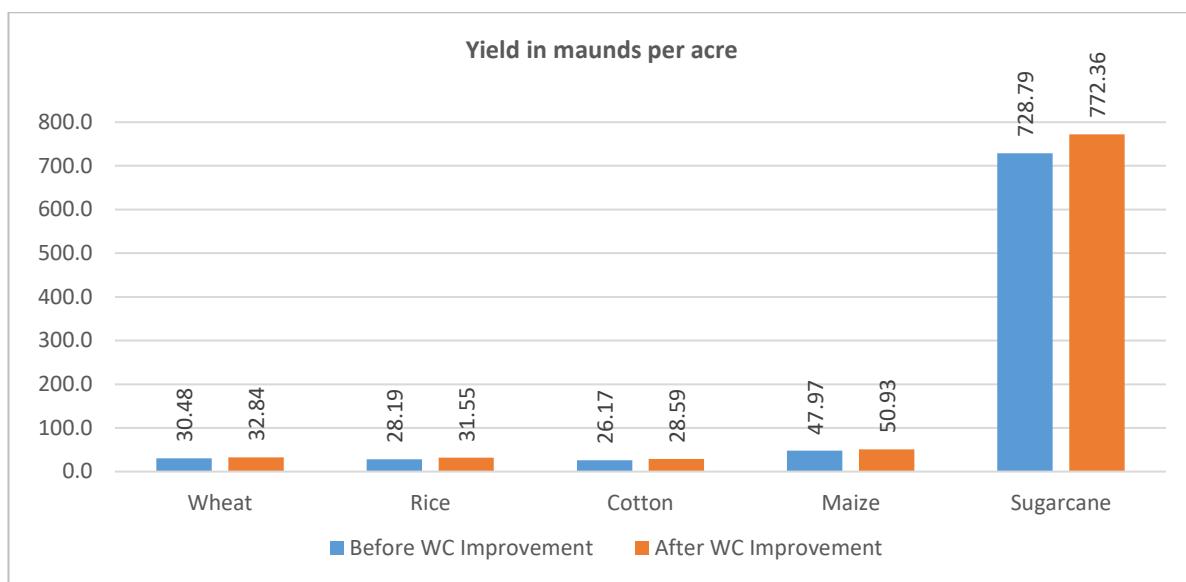


Figure 7: Impact of WC improvement on Major Crop Yields on Sample Farms

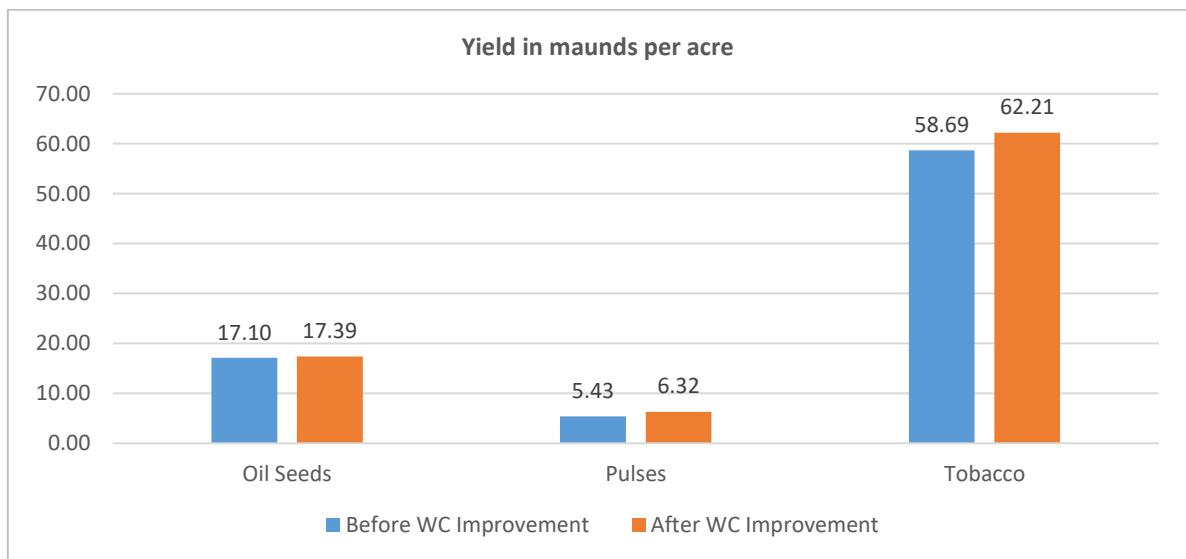


Figure 8: Impact of WC improvement on Minor Crop Yields on Sample Farms

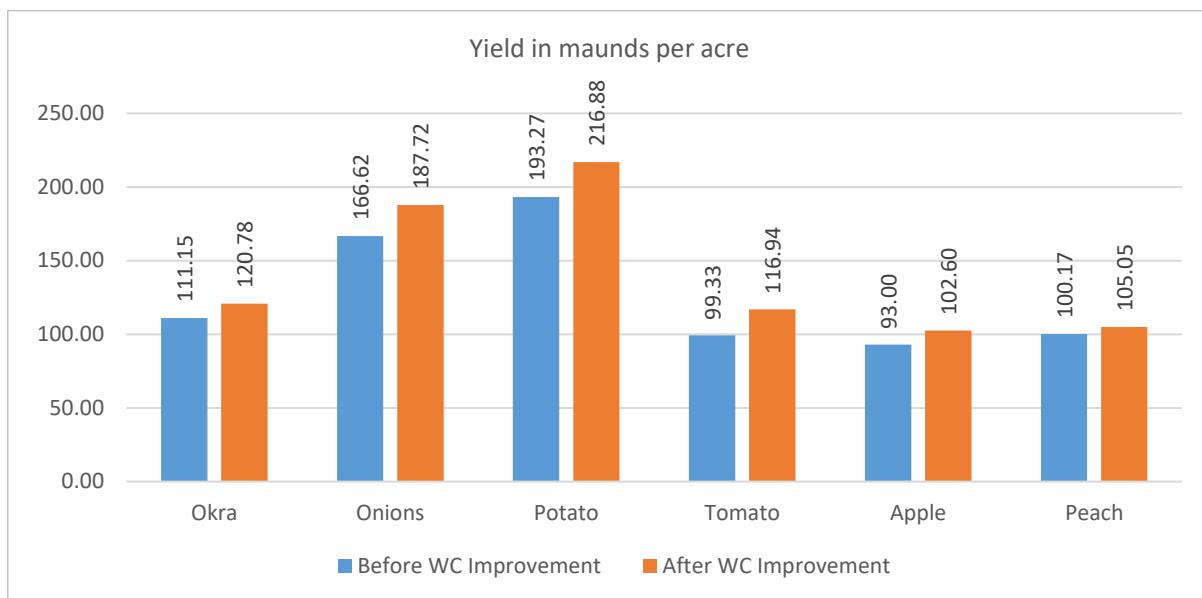


Figure 9: Impact of WC improvement on Fruit Vegetables Yields on Sample Farms

5.3.4. WC Improvement Impact on Crop Area /Cropping Patterns (Crop Share)

The primary impact of watercourses improvement is the saving in water losses. These losses have been estimated through water flow measurements in **section 5.4**. The saved water enhances crop yields on the one hand and increases crop area under various crops on the other. The impact of the saved water on crop yields has already been described in **section 5.3.3**. In this section the impact on cropped areas has been estimated. The area impact varies from crop to crop and averages 14.1% for all crops. Crop-wise details are given in **Table 57** and depicted in **Figures 10, 11 and 12**.

Table 57: Impact of WC Improvement on Crop Area and Cropping Pattern on Sample Farms

Crop	Before WC Improvement		After WC Improvement		Impact	
	Crop Acres	Crop Share (%)	Crop Acres	Crop Share (%)	Crop Acres	Percent Increase
Wheat	14,760	40.8%	15,405	37.4%	645	4.4%
Rice	5,521	15.3%	5,711	13.9%	190	3.4%
Cotton	5,098	14.1%	5,437	13.2%	339	6.6%
Maize	2,052	5.7%	2,380	5.8%	328	16.0%
Sugarcane	1,447	4.0%	1,826	4.4%	379	26.2%
Oil Seeds	572	1.6%	898	2.2%	326	57.0%
Pulses	1,598	4.4%	2,999	7.3%	1,401	87.7%
Tobacco	166	0.5%	239	0.6%	73	43.7%
Okra	12	0.03%	14	0.03%	2	17.8%
Onions	156	0.4%	207	0.5%	51	32.9%
Potato	889	2.5%	1,019	2.5%	130	14.6%
Tomato	249	0.7%	397	1.0%	148	59.4%
Other Vegetables	258	0.7%	637	1.5%	379	147.1%
Apple	543	1.5%	584	1.4%	41	7.5%
Peach	360	1.0%	380	0.9%	20	5.7%
Other Fruits	1,103	3.1%	1,135	2.8%	32	2.9%
Rabi Fodder	840	2.3%	1,343	3.3%	503	59.8%
Kharif Fodder	512	1.4%	620	1.5%	109	21.3%
Overall	36,135	100.0%	41,232	100.0%	5,097	14.1%

Zone/ Unit wise breakup of the Improvement on Crop Area and Cropping Pattern on Sample Farms has given in **ANNEX-F**.

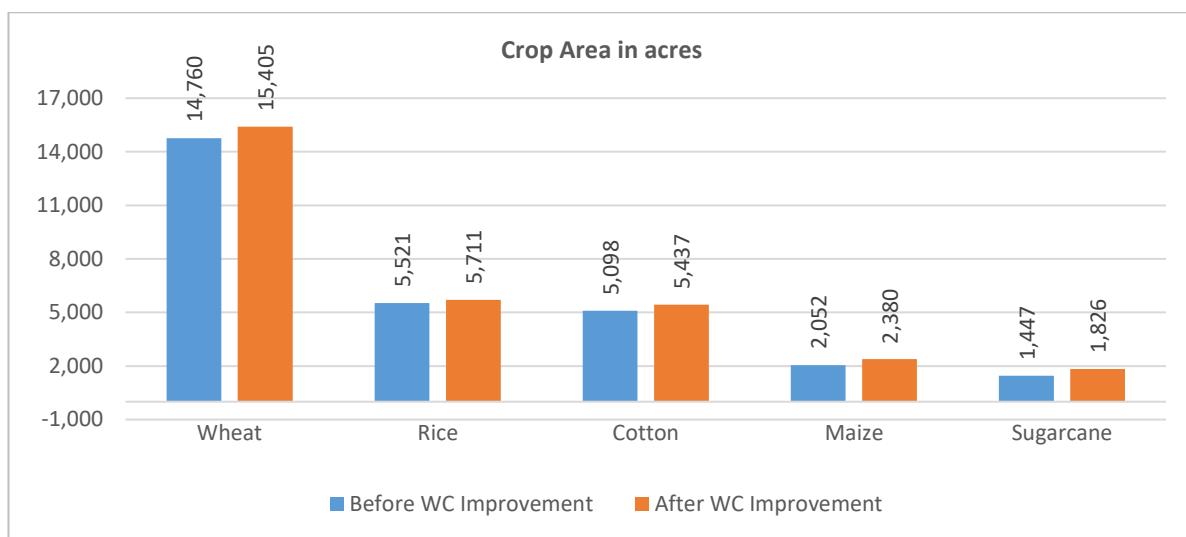


Figure 10: Impact of WC Improvement on Major Crop Area of Major Crops

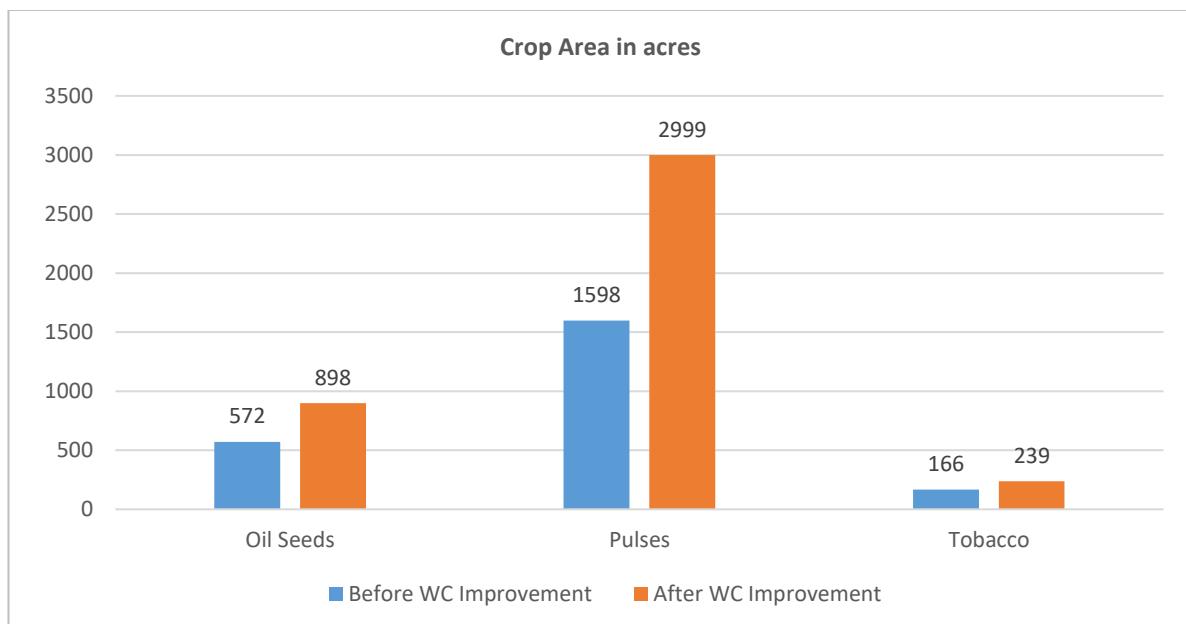


Figure 11: Impact of WC Improvement on Minor Crop Area of Major Crops

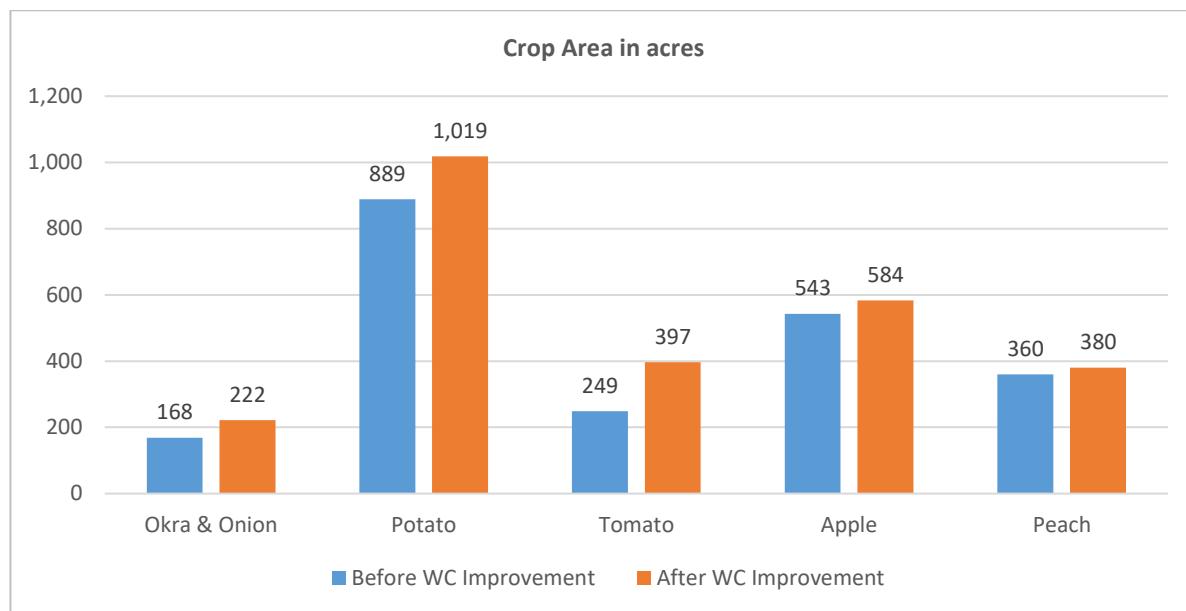


Figure 12: Impact of WC Improvement on Crop Area under Fruit Vegetables on Sample Farms

5.3.5. Watercourse Improvement Impact on Crop Production

Final impact of Watercourses Improvement is reflected in total production of various crops. Production of various crops has increased at different rates varying from 10.8% in the case of peaches to 254.8% in the case of other vegetables. However, weighted average impact calculates at 28.1% (12.3% due to yield increase and 14.1% due to area increase and 1.7 percent due to interaction between the two). Crop-wise production impact is given in **Table 58** and shown graphically in **Figures 13, 14 and 15**.

Table 58: Impact of Watercourse Improvement on Crop Production on Sample Farms

Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs)	Percent
Wheat	449,863	505,870	56,007	12.4%
Rice	155,629	180,198	24,569	15.8%
Cotton	133,435	155,427	21,991	16.5%
Maize	98,416	121,217	22,801	23.2%
Sugarcane	1,054,372	1,410,324	355,953	33.8%
Oil Seeds	9,777	15,619	5,841	59.7%
Pulses	8,671	18,967	10,296	118.7%
Tobacco	9,745	14,842	5,097	52.3%
Okra	1,350	1,728	378	28.0%
Onions	25,989	38,909	12,920	49.7%
Potato	171,740	220,906	49,166	28.6%
Tomato	24,722	46,408	21,686	87.7%
Other Vegetables	19,449	68,997	49,548	254.8%
Apple	50,464	59,876	9,412	18.7%
Peach	36,069	39,973	3,904	10.8%
Other Fruits	106,020	120,390	14,370	13.6%
Rabi Fodder	322,344	561,820	239,475	74.3%
Kharif Fodder	182,707	226,974	44,267	24.2%
Weighted Average Percent of Production Impact				28.1%

Zone/ Unit wise breakup of the Impact on Crop production has given in **ANNEX-H**.

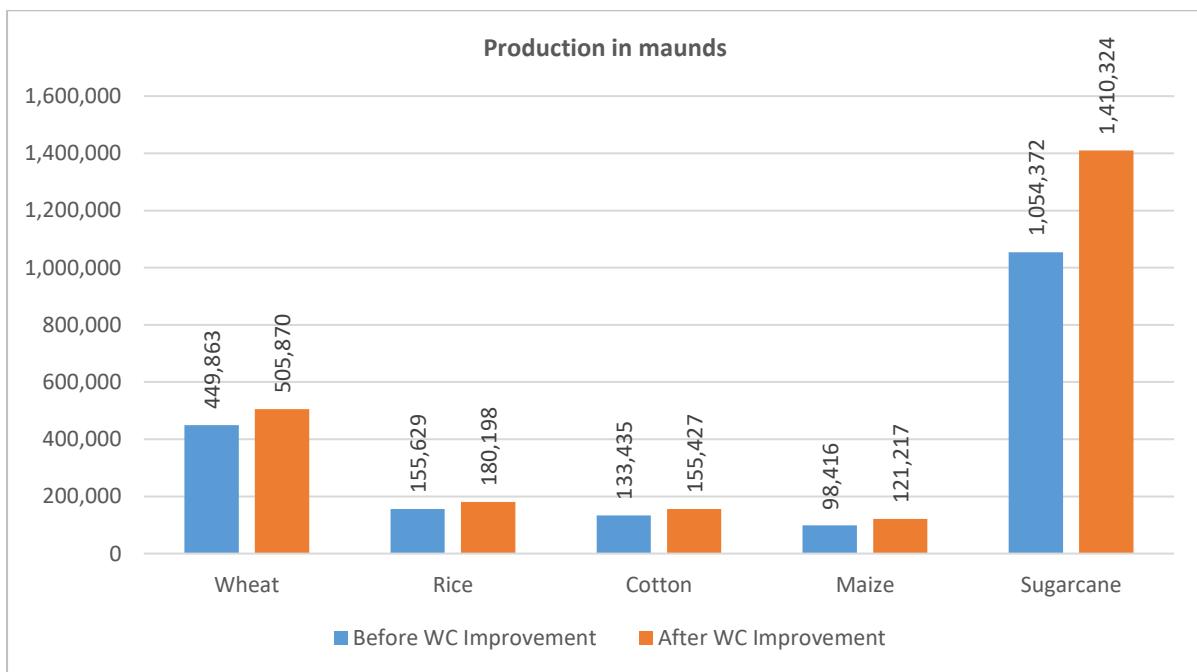


Figure 13: Impact of WC Improvement on Production of Major Crops on Sample Farms

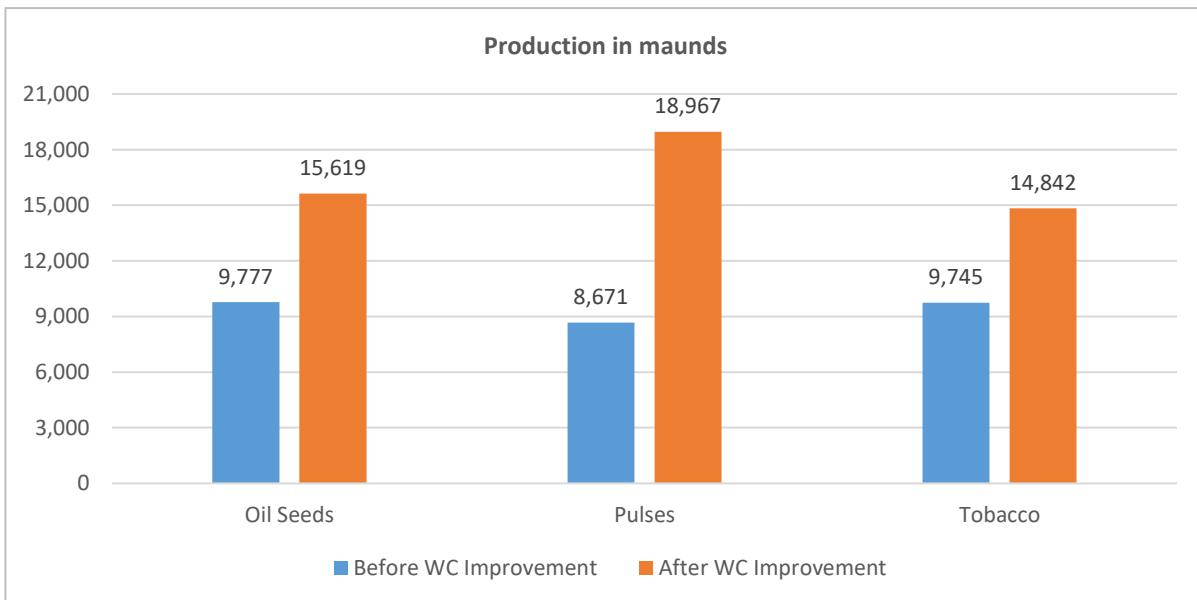


Figure 14: Impact of WC Improvement on Production of Minor Crops on Sample Farms

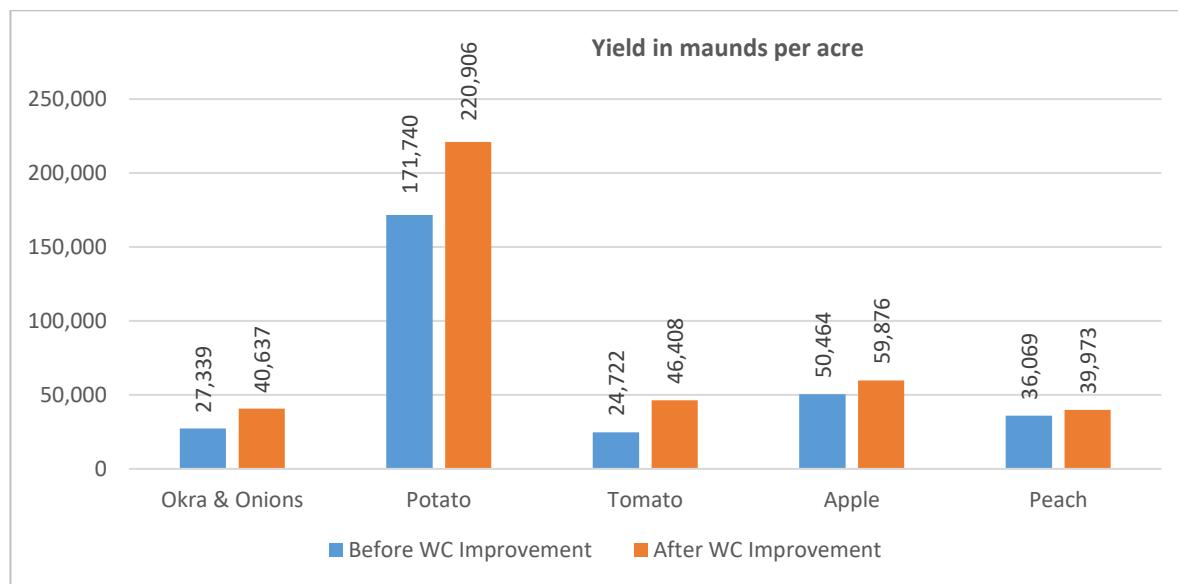


Figure 15: Impact of WC on Production of Vegetables on Sample Farms

5.3.6. Watercourse Improvement Impact on Agriculture Employment

The impact of watercourse improvement on agriculture employment has also been significant. Labor man days at the farm have increased ranging from 2.9% percent to more than 147.1% after WC Improvement. Crop-wise use of labor on farms has been given in **Table 59**. On an overall basis, employment at farms has increased by 11.8% due to an increase in crop area, crop yields and crop production.

Table 59: Impact of Watercourse Improvement on Agriculture Employment

Crops	Agricultural Employment		Change	
	Before WC Improvement	After WC Improvement	Labor Man Days	
	Labor Man Days			Percent
Wheat	381,990	398,692	16,702	4.4%
Rice	174,460	180,458	5,998	3.4%
Cotton	300,953	320,953	20,001	6.6%
Maize	92,978	107,855	14,877	16.0%
Sugarcane	82,956	104,703	21,747	26.2%
Oil Seeds	6,011	9,438	3,427	57.0%
Pulses	13,745	25,793	12,048	87.7%
Tobacco	7,579	10,890	3,312	43.7%
Okra	663	782	118	17.8%
Onions	10,098	13,419	3,321	32.9%
Potato	58,062	66,554	8,492	14.6%
Tomato	11,240	17,921	6,681	59.4%
Other Vegetables	10,486	25,909	15,423	147.1%
Apple	35,395	38,067	2,672	7.5%
Peach	25,421	26,863	1,442	5.7%
Other Fruits	66,187	68,126	1,939	2.9%
Rabi Fodder	24,878	39,755	14,876	59.8%
Kharif Fodder	10,052	12,189	2,137	21.3%
Total	1,313,156	1,468,368	155,212	11.8%
Average per crop acre	36.3	35.6	-	-
Average per farm	397	444	47	11.8%

Zone / Unit wise Impact on Agricultural Employment is given in **ANNEX-I**.

5.3.7. WC Improvement Impact on Agriculture Household Income

Impact of WC Improvement on per acre net income varies from crop to crop. It varies from PKR 1,008 for cotton to PKR 37,905 for other vegetables per acre averaging at PKR 3,719 for all crops. Crop-wise detail is given in **Table 60**.

Table 60: Impact of Watercourse Improvement on Agriculture Household Income

Crops	Before WC Improvement			After WC Improvement			Increase in Net Income
	Gross Income	Cost of Production	Net Income	Gross Income	Cost of Production	Net Income	
	PKR per Acre						
Wheat	69,428	31,520	37,908	74,569	35,377	39,192	1,284
Rice	86,432	46,860	39,572	94,985	53,814	41,171	1,599
Cotton	76,440	43,275	33,165	83,677	49,504	34,173	1,008
Maize	91,885	52,645	39,240	101,256	60,624	40,632	1,392
Sugarcane	146,188	66,124	80,063	155,987	73,732	82,255	2,192
Oil Seeds	69,041	24,782	44,259	76,979	28,875	48,104	3,845
Pulses	46,275	21,256	25,018	48,295	22,183	26,112	1,094
Tobacco	511,500	217,397	294,103	544,677	241,915	302,762	8,659
Okra	183,740	126,243	57,497	201,987	143,025	58,962	1,465
Onions	135,876	79,711	56,165	154,589	94,771	59,818	3,653
Potato	289,787	121,871	167,916	320,033	140,648	179,385	11,469
Tomato	143,714	68,862	74,852	177,608	88,933	88,675	13,823
Other Vegetables	129,438	37,927	91,511	186,531	57,115	129,416	37,905
Apple	175,375	67,930	107,445	196,970	79,728	117,242	9,797
Peach	236,500	71,579	164,921	259,573	82,097	177,476	12,555
Other Fruits	241,500	123,925	117,575	267,408	143,395	124,013	6,438
Rabi Fodder	109,506	20,381	89,124	115,934	22,548	93,386	4,262
Kharif Fodder	83,018	11,448	71,570	86,468	12,461	74,007	2,437
Average	94,682	44,389	50,293	104,114	50,102	54,012	3,719

5.3.8. Impact on Farmers' Gross and Net Incomes under Completed Schemes

In the previous sub sections of this Chapter, we evaluated the impact on 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 gross and net incomes of all the farms on 14,443 improved watercourses have been estimated at 309,525 and 164,413 million rupees respectively. Zone wise / unit wise detail has been shown in **Table 61**. Gross increase has increased by PKR 66,549 million and Net Income by PKR 30,687 million due to improvement of watercourses under all completed schemes.

Table 61: Impact on Total Gross and net Income of all the farms under completed Watercourses

Zone / Unit	Impact on Gross Income of All Farms under Completed Schemes			Impact on Net Income of All Farms under Completed Schemes		
	Gross Income			Net Income		
	Before WC Improvement	After WC Improvement	Increase/ Impact	Before WC Improvement	After WC Improvement	Increase/ Impact
	Million Rupees					
Punjab	257,725	298,508	40,783	136,898	154,860	17,962
KP	17,161	23,362	6,202	9,115	12,120	3,004
Balochistan	23,920	41,702	17,781	12,706	21,634	8,928
GB	8,970	10,440	1,470	4,765	5,416	651
AJK	1,732	2,039	307	920	1,058	138
ICT	17	23	6	9	12	3
Overall	309,525	376,074	66,549	164,413	195,100	30,687

5.4. Water Saving Impact of Watercourses Improvement

To measure and evaluate the impact / reduction in water conveyance losses due to Watercourse Improvement / Lining, the ME&IE Consultants planned to measure water flows in sample watercourses under NPIWC-II before and after their improvement. So far about 379 before lining and after lining measurements have been taken on open watercourses. In addition, 365 piped watercourses have been also surveyed to get basic information about their capacity and annual flowing day. The work of measuring the water flows is further going on. Final Estimation / Evaluation of losses and reductions therein will only be possible once before and after water flow measurements are complete for all sample watercourses. Types of these watercourses are given in **Table 62**.

Table 62: Number and Type of Sample Watercourses

Sample Watercourses		No of WC
50% lined Watercourses	Perennial Canal Watercourses	206
	Non perennial Watercourses	27
	Non-Canal Watercourses	50
	Sub Total	283
20% lined Watercourses	Perennial Canal Watercourses	74
	Non perennial Watercourses	16
	Non-Canal Watercourses	6
	Sub Total	96
100% lined PVC, PPC, HDPE etc., Watercourses		365
Grand Total Lined Sample Watercourses		744

5.4.1. Water Flows Before and After Improvement / Lining

Average water flows recorded in Liters per second at 3 points i.e., at MOGHA, 50% distance and 75% distance from MOGHA before and after the watercourse improvement have been shown in **Table 63**.

Table 63: Average Water Flows Recorded at 3 Points

TYPE OF WATER COURSES	TIME OF TAKING WFM	WATER FLOWS IN LITERS PER SECOND (LPS) AT THE DISTANCE FROM MOGHA		
		0%	50%	75%
50% Lined 283 Watercourses	Before Lining	27.17	18.07	14.40
	After Lining	28.31	27.63	22.76
20% Lined 96 Watercourses	Before Lining	29.27	23.71	19.20
	After Lining	28.09	27.56	22.84

5.4.2. Water Conveyance Efficiency

Water Conveyance Efficiencies have been calculated assuming Head level discharges as 100%. Since flow was measured at three points i.e., at the head measuring inlet discharge, at 50% and 75% distance from head. Water conveyance efficiencies and water conveyance losses have been computed at these three points. *A priori*, efficiency will always be 100% or conversely losses will always be 0% before and after lining at the head. On 283 new 50% Lined Watercourses, average Water Conveyance Efficiency (WCE) has been calculated 66.5% before and 97.6% after lining hence an increase of 31.1% at 50% distance from the head. At the distance of 75%, the respective figures are 53% and 80.4% for before and after situations and the increase in WCE is 27.4%. On 96 Additional 20% Lined Watercourses, average WCE has been calculated 81% before and 98.1% after lining, hence an increase of 17.1% at 50% distance from the head. At the distance of 75%, the respective figures are 65.6% and 81.3% for before and after situations and the increase in WCE is 15.7%. Details are given in **Table 64**.

Table 64: Average Water Conveyance Efficiency (WCE) at 50% and 75% distances from MOGHA

TYPE OF WATER COURSES	TIME OF TAKING WFM	AVERAGE WATER CONVEYANCE EFFICIENCY AT THE DISTANCE FROM MOGHA		
		0%	50%	75%
213 new 50% Lined Watercourses	Before Lining	100%	66.5%	53.0%
	After Lining	100%	97.6%	80.4%
Increase in Water Conveyance Efficiency (WCE) after Lining		0%	31.1%	27.4%
72 Additional 20% Lined Watercourses	Before Lining	100%	81.0%	65.6%
	After Lining	100%	98.1%	81.3%
Increase in Water Conveyance Efficiency (WCE) after Lining		0%	17.1%	15.7%

5.4.3. Water Conveyance Losses

Water conveyance losses are converse to watercourse conveyance efficiencies. These can be calculated by just subtracting the WCE from unity or 100%. These have been calculated for the sake of convenience and shown in **Table 65** for ready reference:

Table 655: Average Water Conveyance Losses (WCL) at 50% and 75% distances from MOGHA

TYPE OF WATER COURSES	TIME OF TAKING WFM	AVERAGE WATER CONVEYANCE LOSSES AT THE DISTANCE FROM MOGHA		
		0%	50%	75%
213 new 50% Lined Watercourses	Before Lining	0%	33.5%	47.0%
	After Lining	0%	2.4%	19.6%
Decrease in Water Conveyance Losses (WCL) after Lining		0%	31.1%	27.4%
72 Additional 20% Lined Watercourses	Before Lining	0%	19.0%	34.4%
	After Lining	0%	1.9%	18.7%
Decrease in Water Conveyance Losses (WCL) after Lining		0%	17.1%	15.7%

5.4.4. Annual Water Saved (AF) per Watercourse

Based on our sample of 744 watercourses, annual water saving per watercourse has been calculated as 154 Acre Feet. Calculations may be seen in **Table 66**.

Table 66: Water Saving Estimates as per 744 sample watercourses

Sample Watercourses on		No of WC	Annual Flowing Days	Average WC Capacity (Cusecs)	AF per Cusec Per Day	Water Use before WC lining in AF	Water Saving (%)	Water Saved in AF
50% lined Watercourses	Perennial Canal	206	330	1.0	1.98	134,600	29%	39,371
	Non perennial	27	165	1.0	1.98	8,821	29%	2,580
	Non-Canal	50	300	1.0	1.98	29,700	29%	8,687
20% lined Watercourses	Perennial Canal	74	330	1.0	1.98	48,352	16%	7,930
	Non perennial	16	165	1.0	1.98	5,227	16%	857
	Non-Canal	6	300	1.0	1.98	3,564	16%	584
PVC, PPC and HDPE Lined		365	300	0.5	1.98	108,405	50%	54,203
Total Sample Watercourses	744					338,669	34%	114,212
Annual Water Use saved Per Watercourse in AF						455	34%	154

5.5. Spot Checking of Watercourses

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

5.5.1. Profile of Spot-Checked Watercourses

Out of these 744 watercourses, 30 watercourses were rectangular/ bricks lined, 347 were PCP lined and 185 were pipelined. Pipe-lining included PVC, PCC, and HDPE lining. Lining type wise and Zone/Unit wise sample distribution of the spot-checked watercourses is shown in **Table 67**.

Table 67: Spot Checking of Watercourses Distributed by Type of Lining

Zone/Unit	Total Water-courses Spot Checked	Type of Lining						Total	
		Rectangular/ Bricks Lined	PCP Lined	Pipelined					
				PVC	PCC	HDPE	Mixed		
Punjab	250	-	250	-	-	-	-	-	
KP	205	1	81	45	72	4	2	123	
Balochistan	203	29	-	133	-	41	-	174	
GB	40	-	-	-	1	17	22	40	
AJK	39	-	16	-	1	15	7	23	
ICT	7	-	-	7	-	-	-	7	
Overall	744	30	347	185	74	77	31	367	

5.5.2. Results of Spot-Checking Watercourses

5.5.2.1. Spot Checking Trees on Watercourses

On all 744 spots checked at 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 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 68**.

Table 68: Trees cut down, Planted, and Survived at Watercourses

Zone/Unit	Cut Down	Saplings Planted	Survived Trees	Protection Arrangement Made (%)
Punjab	5,264	8,738	2,708	77%
KP	124	310	86	66%
Balochistan	-	180	40	82%
GB	-	-	-	-
AJK	-	-	-	-
ICT	-	30	10	80%
Overall	5,388	9,258	2,844	77%

5.5.2.2. 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 69**.

Table 69: Results of Rectangular / Brick Lined Watercourses' Spot Checking

Sr. #	Spot check Items	Yes	No
1	Removal of vegetation from watercourse properly?	83%	17%
2	Aligning according to design?	90%	10%
3	Proper compaction of soil?	83%	17%
4	Actual discharge (as per Irrigation Department) (LPS)?	93%	7%
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?	80%	20%
8	Is the thickness of walls as per design?	93%	7%
9	Depth of watercourse is as per design?	97%	3%
10	Width of watercourse is as per design?	80%	20%
11	Is the thickness of plaster at wall adequate?	83%	17%
12	Is the thickness of bed adequate?	87%	13%
13	Is the thickness of the mortar at wall adequate?	93%	7%
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	20%	
16.2	Satisfactory	70%	
16.3	Not Satisfactory	10%	
17	Back filling of the lining portion?	Percent	
17.1	Good	23%	
17.2	Satisfactory	47%	
17.3	Not Satisfactory	30%	
18	Type of mogha/outlet	Percent	
18.1	Open	37%	
18.2	Closed	30%	
18.3	Closed pipe	33%	
18.4	Closed pump	0%	
		Full length improved	Only lined Portion
19	Rehabilitation of katcha/earthen portion of watercourse	23%	77%

5.5.2.3. 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 70**.

Table 70: 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%	

Sr. #	Spot check Items	Yes	No
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%

5.5.2.4. Spot Checking of Pipelined Watercourses

The quality of pipe was found good in 58% cases, satisfactory in 39% cases and poor in 3% cases only. Pipeline length 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%, as per the design. Information on other parameters is given in **Table 71**.

Table 71: Results of Pipelined Watercourses' Spot Checking

Sr. #	Spot Check Items	Yes	No
1	Excavation of trenches for water supply pipelines 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%	

6. IMPACT EVALUATION OF COMPONENT C3

For conducting Impact Evaluation of Component C3 and in order to assess the agro-Economic impacts of WSTs constructed, before and after approach has been used as given in the inception report. Information for this component has been collected through **ANNEX-O**, for this purpose, baseline and midline / endline impact survey studies have to be conducted @ 5% sample of completed schemes under revised methodology. Thus, for 5,915 constructed WSTs, baseline and impact sample size works out 296. By now (end of June 2024), baseline has been completed on 347 WSTs. The consolidated baseline report covering these 347 WSTs has already been submitted. However, impact surveys have been carried out on 347 WSTs up to the end of June 2024. Thus, the Endline impact has been calculated for 347.

As mentioned above, baseline sample calculates / requires as 296 (**Table 72**), however, actual sample size taken for baselines survey is 347 and for Impact survey is 347, which are obviously greater than the required one. A complete profile of the baseline of 347 sample Water Storage Tank is given below:

6.1. Profile of Sample Water Storage Tanks

6.1.1. Sample Size

Up to the end of June 2024, total WSTs constructed are 5,915. The required Sample size for this WSTs @ 5%, calculates 296 WSTs, however, actual sample drawn is 347 WSTs. The zone / Unit wise distribution of this sample is shown in **Table 72**.

Table 72: Sample Size for Monitoring Evaluation WST

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

6.1.2. Area Operated Under Sample WSTs

The total area operated under these 347 WSTs is 3,674.3 acres or 10.6 acre per WST. Zone / Unit wise total and average operated area is shown in **Table 73** and **Figure 16**.

Table 73: Area Operated under Sample WSTs

Zone / Unit	No. of WST	Area Operated (Acres)	Avg. Area (Acres)
Punjab	80	848.0	10.6
KP	79	949.3	12.0
Balochistan	148	1332.0	9.0
GB	15	195.0	13.0
AJK	25	350.0	14.0
Overall	347	3,674.3	10.6

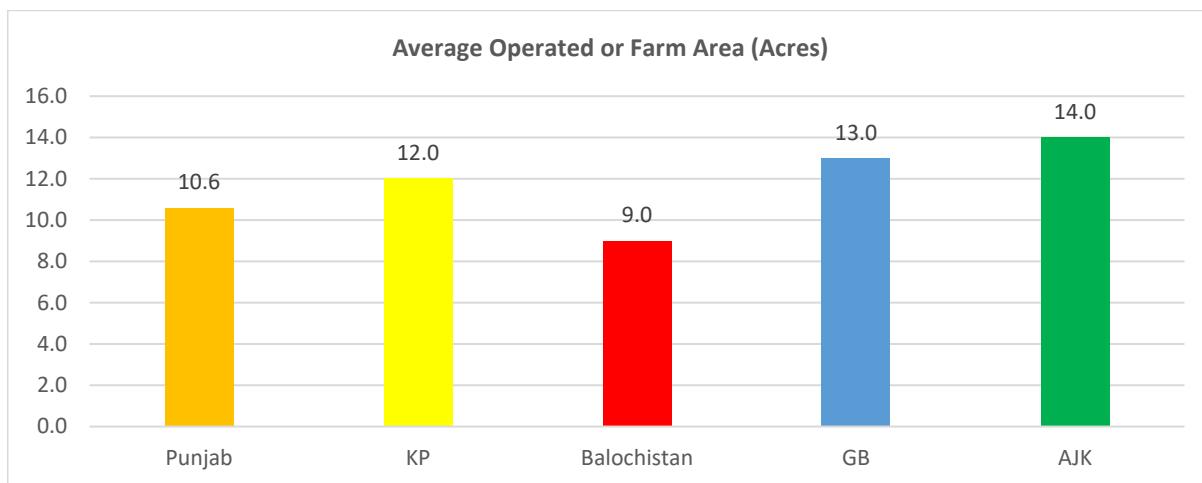


Figure 16: Average Size of Holding or Farm Size of Sample WSTs' Farms

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 (72%) draw water from tube wells, 24 (7%) from perennial canals, 16 (5%) from non-perennial canals and 57 (16%) from other sources. Source wise and zone /unit wise distribution is given in **Table 74** below.

Table 74: 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, 17% on uneven surfaces and the rest 4% on slightly sloped surfaces. Information on zone / unit wise topography of the area where WSTs were located is given in **Table 75**.

Table 75: 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	12 (80%)	2 (13%)	1 (7%)
AJK	25	21 (84%)	2 (8%)	2 (8%)
Overall	347	273 (79%)	61 (17%)	13 (4%)

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 75% OFWM staff was friendly and supportive in dealing with the WSTs cases. 82% of farmers reported that the maintenance of WSTs is easy. Details of feedback are given in **Table 76**.

Table 76: 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%	73%	28%
KP	79	100%	100%	100%	0%	100%	0%
Balochistan	148	100%	100%	61%	39%	74%	26%
GB	15	100%	100%	100%	0%	100%	0%
AJK	25	100%	100%	100%	0%	100%	0%
Overall	347	100%	100%	75%	25%	82%	18%

6.1.6. Perception of Farmers on Cropping Intensity and Crop Yields

About 71% of farmers have a perception that WSTs have positive impact on Cropping intensity to the extent of 23% and 68% farmers were of the view that WSTs increase crop yields to the extent of 28%. Zone / Unit wise farmers' perceptions are shown in **Table 77**.

Table 77: 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	75%	25%	23%	76%	24%	30%
KP	79	95%	5%	21%	89%	11%	29%
Balochistan	148	66%	34%	24%	61%	39%	27%
GB	15	100%	0%	19%	100%	0%	25%
AJK	25	0%	100%	0%	0%	100%	0%
Overall	347	71% (248)	29% (99)	23%	68% (236)	32% (111)	28%

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, 66% of them responded that WSTs increase the cultivated area while 86% were of the view that the number of irrigations also increases. Zone Unit wise responses of the farmers are summarized in **Table 78**.

Table 78: 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	76%	24%	100%	0%
KP	79	81%	19%	100%	0%
Balochistan	148	70%	30%	68%	32%
GB	15	0%	100%	100%	0%
AJK	25	0%	100%	100%	0%
Overall	347	66% (228)	34% (119)	86% (300)	14% (47)

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 79** below.

Table 79: 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 80** and that of tenure in **Table 81**.

Table 80: 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	56 (69%)	18 (23%)	6 (8%)
KP	79	60 (76%)	15 (19%)	4 (5%)
Balochistan	148	78 (53%)	12 (18%)	58 (39%)
GB	15	12 (82%)	2 (13%)	1 (5%)
AJK	25	21 (87%)	3 (11%)	1 (2%)
Overall	347	227 (66%)	50 (14%)	70 (20%)

Table 81: Distribution of Farmers According to Tenure

Zone/Unit	Total Respondents	Distribution of Sample Farmers According to Tenure		
		Owners	Owner / Tenants	Tenants
Punjab	80	74 (93%)	4 (5%)	2 (2%)
KP	79	64 (81%)	6 (7%)	9 (12%)
Balochistan	148	135 (91%)	6 (4%)	7 (5%)
GB	15	14 (95%)	0 (0%)	1 (5%)
AJK	25	24 (96%)	0 (0%)	1 (4%)
Overall	347	311 (90%)	16 (4%)	20 (6%)

Since the M&E teams have to visit each of the selected farmers two times (i.e., at the time of baseline, Midline 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. Agro-Economic Impact of Water Storage Tanks Construction

6.2.1. Impact of WSTs Construction on Land Use

6.2.1.1. Impact on Cultivated Area

Cultivated areas are defined as part of the farm area which is under cultivation by the farmer or on which crops are / can be sown by the farmers. 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 area is always less than or equal to the Farm area. Additional availability of the water or saved water can increase the area under cultivation. Thus, the impact of additional availability of water or saved water due to WST construction on cultivated areas has been summarized in **Table 82** and graphically depicted in **Figure 17**.

Table 82: Impact of WST Construction on Cultivated Area

Zone/Unit	Cultivated Area on Sample Farms			Cultivated Area on all Farms on all Improved WST		
	Before WST Construction	After WST Construction	Increase/Impact	Before WST Construction	After WST Construction	Increase/Impact
Punjab	777.2	811.3	34.0	10,891	11,368	477
KP	818.3	867.1	48.9	12,689	13,446	758
Balochistan	917.4	1019.4	102.0	16,551	18,390	1,840
GB	145.5	166.1	20.6	4,414	5,038	624
AJK	266.2	293.5	27.3	4,727	5,212	485
Overall	2924.6	3157.4	232.8	49,271	53,454	4,184

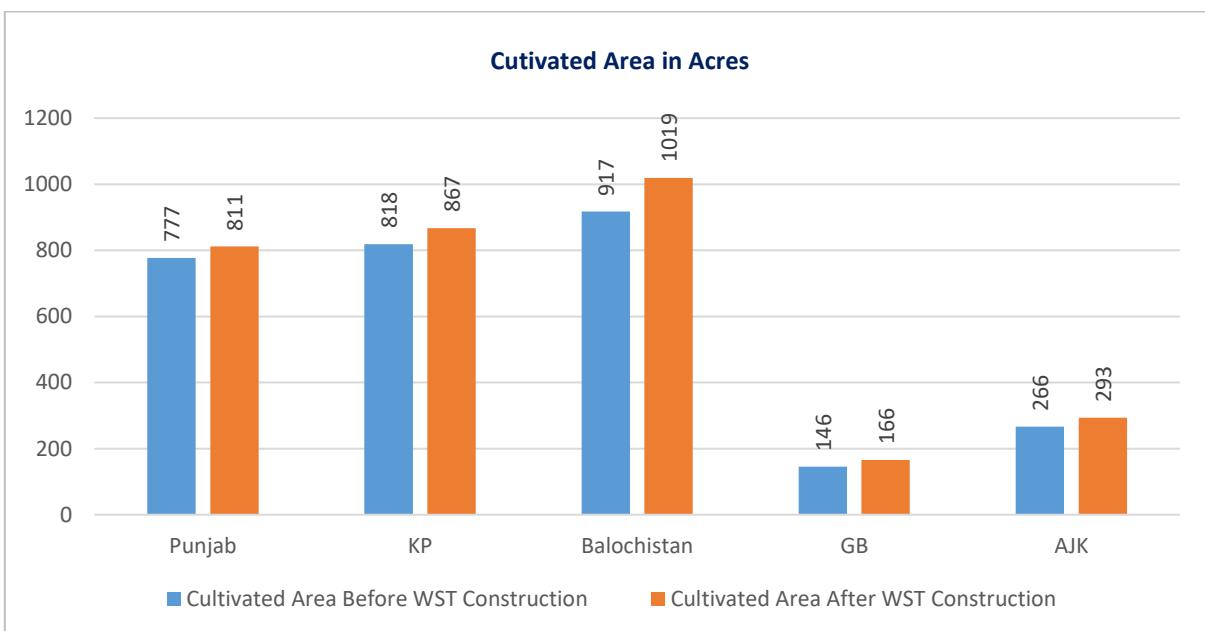


Figure 17: Impact of WST Construction on Cultivated Area on Sample Farms

6.2.1.2. Impact on Land Use Intensities

As the land use intensity is defined as ratio of cultivated area to farm area and the cultivated area is always less than or equal to farm area, hence, by definition land use intensity is always less than or equal to one or 100%. It can never exceed unity or 100%. While analyzing the land use pattern of the respondent farms, it has been found that land use intensity has increased on an overall basis from 79.6% to 85.9%. Zone / Unit wise break up / detail has been given in **Table 83** and depicted in **Figure 18**. The highest increases of 9.5%age points and 7.8%age points have been noted in AJK and Balochistan whereas the lowest have been in Punjab (3.8%age point).

Table 83: Impact of WST Improvement on Land Use Intensities

Zone/Unit	Total Farm Area of Sample Farms	Total Cultivated Area of Sample Farms		Land Use		
		Before WST Improvement	After WST Improvement	Before WST Improvement	After WST Improvement	Increase/Impact
Punjab	848.0	777	811	91.7%	95.7%	4.0%
KP	949.3	818	867	86.2%	91.4%	5.1%
Balochistan	1332.0	917	1019	68.9%	76.5%	7.7%
GB	195.0	146	166	74.6%	85.2%	10.6%
AJK	350.0	266	293	76.0%	83.9%	7.8%
Overall	3674.3	2925	3157	79.6%	85.9%	6.3%

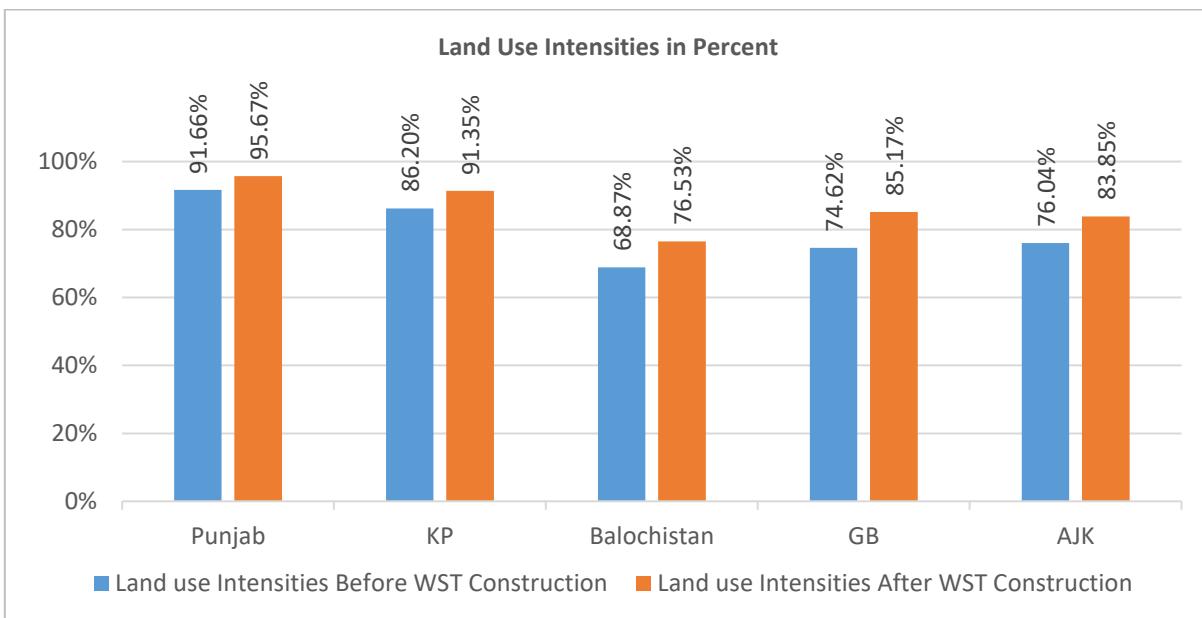


Figure 18: Impact of WST Construction on Land Use Intensities on Sample Farms

6.2.2. Impact Watercourses Improvement on Crops

6.2.2.1. Impact on Cropped Area

Another indicator used to measure agricultural efficiency is the number of crops grown during the crop year on a single piece of cultivated land. It is quite possible that during the year, all the cultivated area might not be cultivated and some of it is left fallow (unplanted) due to shortage of water or non-availability of some other critical factor. 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. The impact of additional water saved through WSTs construction on cropped area is shown in **Table 84** and depicted in **Figure 19**.

Table 84: Impact of WST Construction on Cropped Area

Zone/Unit	Cropped Area on Sample Farms			Cropped Area on all Farms on all Constructed WSTs		
	Before WST Construction	After WST Construction	Increase/Impact	Before WST Construction	After WST Construction	Increase/Impact
Punjab	1237.1	1456.5	219.4	17,335	20,409	3,074
KP	805.2	1003.6	198.5	12,485	15,563	3,078
Balochistan	915.4	1169.8	254.4	16,515	21,105	4,590
GB	170.4	231.7	61.3	5,170	7,029	1,859
AJK	277.9	361.4	83.6	4,935	6,419	1,484
Overall	3406.0	4223.1	817.1	56,440	70,524	14,084



Figure 19: Impact of WST Construction on Cropped Area on Sample Farms

6.2.2.2. Impact on Cropping Intensities

By definition the cropping intensity (the ratio between the cropped area and cultivated area) may be less than, equal to or greater than unity or 100%. The impact of watercourses improvement on cropping intensities is shown in Table 86 below. On an overall basis, cropping intensity has increased by 17.3%age point. Zone wise Impact or increases in cropping intensities has been given in **Table 85** and shown in **Figure 20**. The highest increase of 22.4%age point has been recorded in GB whereas lowest increase of 15.0%age point found in Balochistan.

Table 85: Impact of WST Improvement on Land Use Intensities

Zone/Unit	Total Cultivated Area of Sample Farms		Total Cropped Area of Sample Farms		Cropping Intensities		
	Before WST Improvement	After WST Improvement	Before WST Improvement	After WST Improvement	Before WST Improvement	After WST Improvement	Increase/Impact
Punjab	777	811	1,237	1,456	159.2%	179.5%	20.4%
KP	818	867	805	1,004	98.4%	115.7%	17.3%
Balochistan	917	1,019	915	1,170	99.8%	114.8%	15.0%
GB	146	166	170	232	117.1%	139.5%	22.4%
AJK	266	293	278	361	104.4%	123.2%	18.8%
Overall	2,925	3,157	3,406	4,223	116.5%	133.8%	17.3%

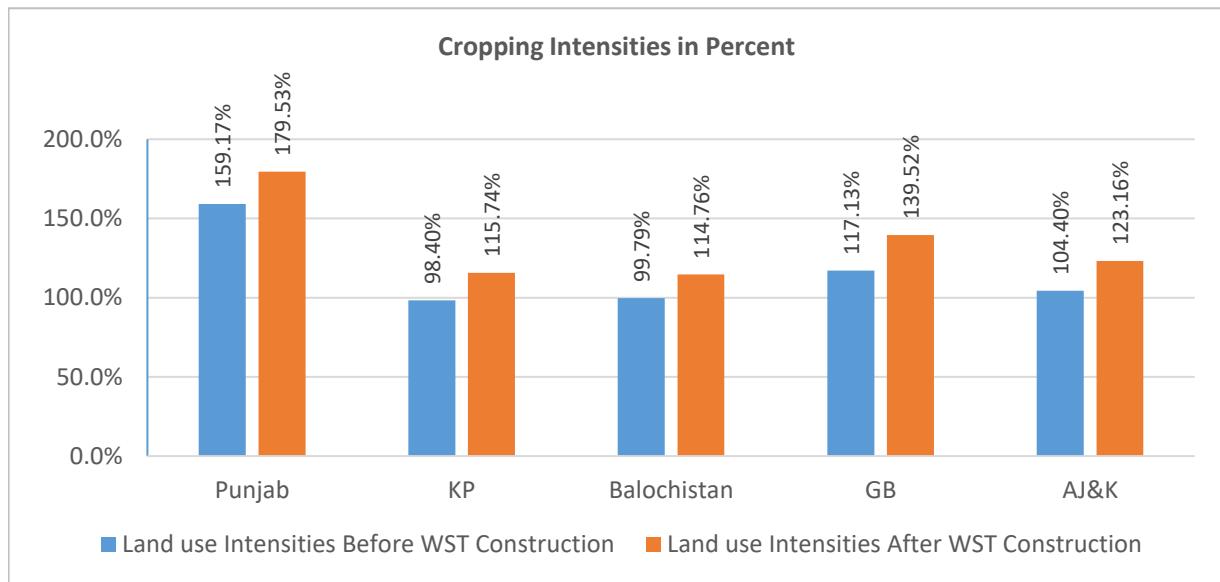


Figure 20: Impact of WST Construction on Cropping Intensities on Sample Farms

6.2.3. Impact of Watercourses Improvement on Crop Yields

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 **6.2.1 and 6.2.2 above**) reflecting crop area under various crops. Moreover, it also 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, the impact of improving watercourses on crop yields has been shown. These impacts have been given in **Table 86** and in **Figures 21 and 22**. It may be seen from **Table 86** that the yield of various crops has increased by 4.6% in the case of Kharif Fodder to 15.8% in the case of onion. However, the average weighted impact of Water Storage Tank construction on overall crop Yields has been 11.6%.

Table 86: Impact of WST Construction on Crop Yields on Sample Farms

Crops	Crop Yields			Impacts of WST Construction	
	Before WST Construction	After WST Construction	Maunds (40 Kgs) per Acre		
			Percent		
Wheat	29.3	31.7	2.5	8.5%	
Rice	27.0	30.2	3.2	11.8%	
Cotton	26.2	28.6	2.4	9.2%	
Maize	53.3	57.9	4.5	8.5%	
Sugarcane	745.9	798.0	52.1	7.0%	
Pulses	6.0	6.7	0.7	11.7%	
Onions	158.0	183.0	25.0	15.8%	
Potato	160.0	185.0	25.0	15.6%	
Tomato	92.0	102.5	10.5	11.4%	
Other Vegetables	101.6	110.2	8.6	8.5%	
Apple	74.0	85.0	11.0	14.9%	
Other Fruits	69.3	79.1	9.8	14.2%	
Rabi Fodder	371.9	394.3	22.4	6.0%	
Kharif Fodder	358.1	374.5	16.4	4.6%	
Weighted Average of Yield Impact				11.6	

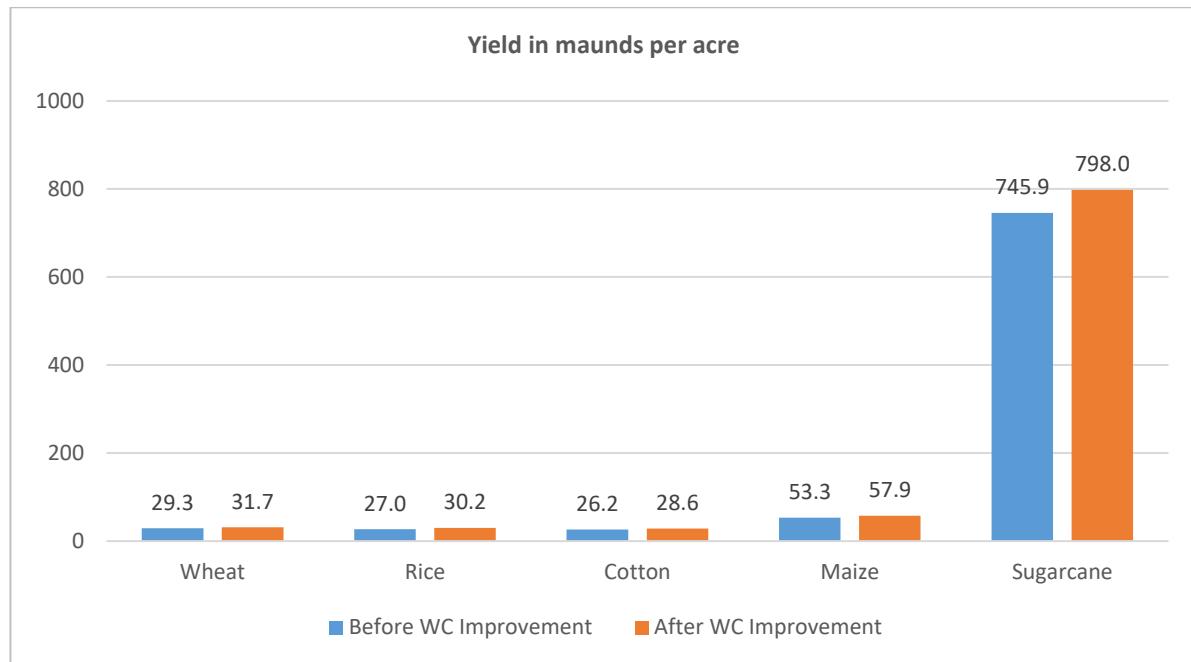


Figure 21: Impact of WST Construction on Major Crop Yields on Sample Farms

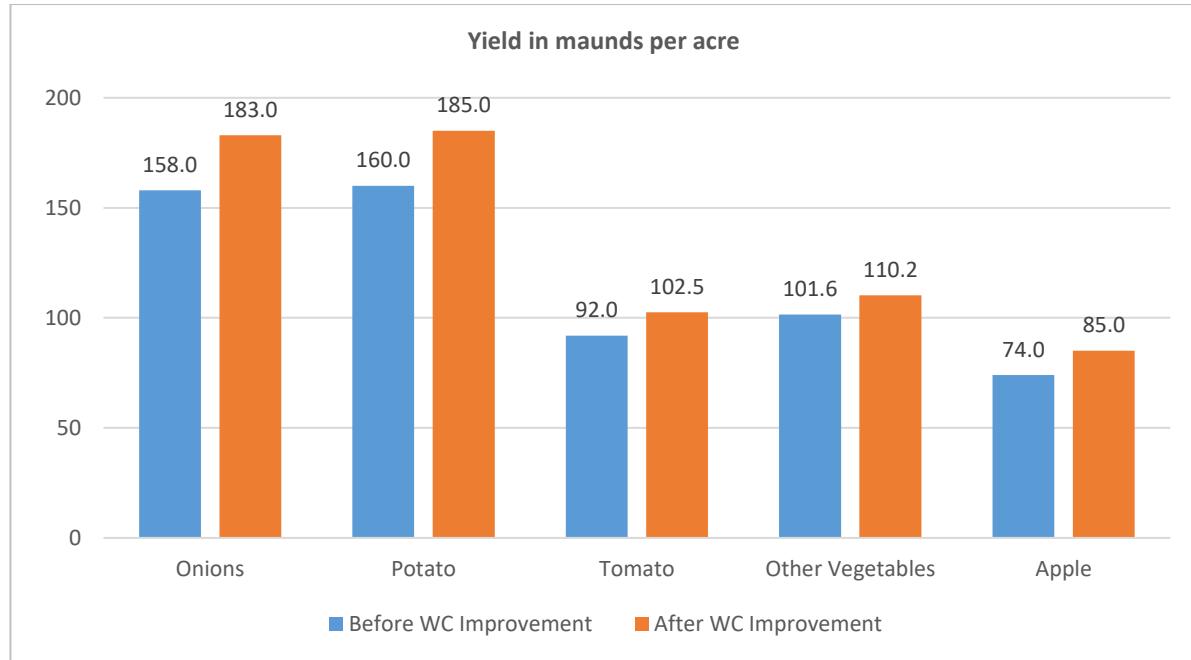


Figure 22: Impact of WST Construction on Fruit Vegetables Yields on Sample Farms

6.2.4. WST Construction Impact on Crop Area /Cropping Patterns on Sample Farms

The primary impact of WST construction is the saving in water losses. These losses have been estimated in section 6.3. The saved water enhances crop yields on the one hand and increases crop area under various crops on the other. Impact of the saved water on crop yields has already been described in section 6.2.3. In this section impact on cropped area has been estimated. The area impact varies from crop to crop and averages 24% for all crops. Crop wise detail is given in Table 87 and depicted in Figures 23 and 24.

Table 87: Impact of WST Improvement on Crop Area and Cropping Pattern on Sample Farms

Crop	Before WST Improvement		After WST Improvement		Impact	
	Crop Acres	Crop Share (%)	Crop Acres	Crop Share (%)	Crop Acres	Percent Increase
Wheat	917.2	26.9%	1024.3	24.3%	107.1	11.7%
Rice	361.1	10.6%	403.4	9.6%	42.4	11.7%
Cotton	38.6	1.1%	41.9	1.0%	3.3	8.6%
Maize	307.8	9.0%	338.0	8.0%	30.3	9.8%
Sugarcane	22.4	0.7%	35.7	0.8%	13.3	59.5%
Pulses	67.6	2.0%	101.6	2.4%	34.0	50.2%
Onions	162.6	4.8%	207.3	4.9%	44.6	27.5%
Potato	36.0	1.1%	46.0	1.1%	10.0	27.8%
Tomato	89.4	2.6%	112.5	2.7%	23.2	25.9%
Other Vegetables	549.8	16.1%	809.5	19.2%	259.7	47.2%
Apple	357.0	10.5%	394.8	9.3%	37.8	10.6%
Other Fruits	309.0	9.1%	443.3	10.5%	134.2	43.4%
Rabi Fodder	107.1	3.1%	147.0	3.5%	39.9	37.2%
Kharif Fodder	80.4	2.4%	117.6	2.8%	37.2	46.3%
Overall	3406	100.0%	4223	100.0%	817	24.0%

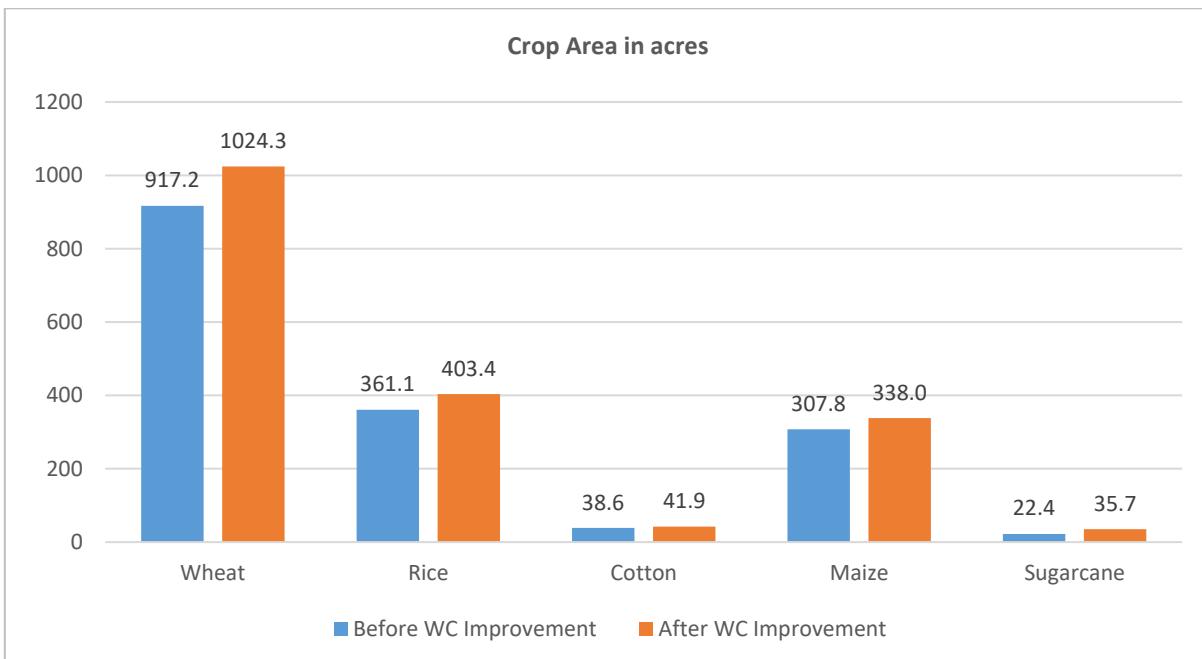


Figure 23: Impact of WST Construction on Crop Area of Major Crops on Sample Farms

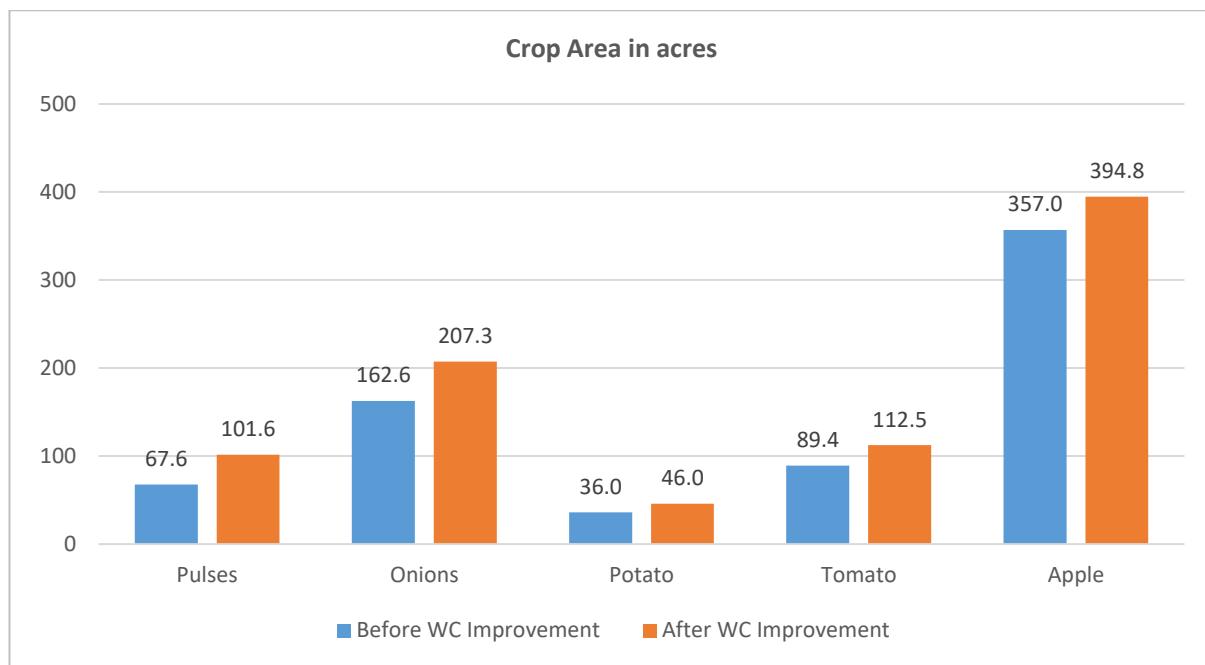


Figure 24: Impact of WST Construction on Area under Pulses, Fruit Vegetables on Sample Farms

6.2.5. WST Construction Impact on Crop Production on Sample Farms

Final impact of Watercourses Improvement is reflected in total production of various crops. Production of various crops has increased at different rates varying from 19% in the case of maize to 71% in the case of sugarcane. However, weighted average impact calculates at 38.4% (11.6% due to yield increase and 24% due to area increase and 2.8 percent due to interaction between the two). Crop-wise production impact is given in **Table 88** and shown graphically in **Figures 25 and 26**.

Table 88: Impact of WST Improvement on Crop Production on Sample Farms

Crops	Crop Production		Impacts of WST Construction	
	Before WST Construction	After WST Construction	Maunds (40 Kgs)	
			Percent	
Wheat	26843.31	32520.86	5677.55	21%
Rice	9742.05	12173.22	2431.17	25%
Cotton	1011.29	1198.85	187.56	19%
Maize	16414.77	19562.84	3148.07	19%
Sugarcane	16702.37	28498.84	11796.48	71%
Pulses	405.80	680.70	274.90	68%
Onions	25697.49	37933.98	12236.49	48%
Potato	5753.72	8502.47	2748.75	48%
Tomato	8218.32	11530.44	3312.12	40%
Other Vegetables	55842.22	89219.27	33377.05	60%
Apple	26419.60	33561.45	7141.85	27%
Other Fruits	21413.93	35072.60	13658.67	64%
Rabi Fodder	39848.33	57987.27	18138.94	46%
Kharif Fodder	28780.71	44037.82	15257.10	53%
Weighted Average of Production Impact				38.4%

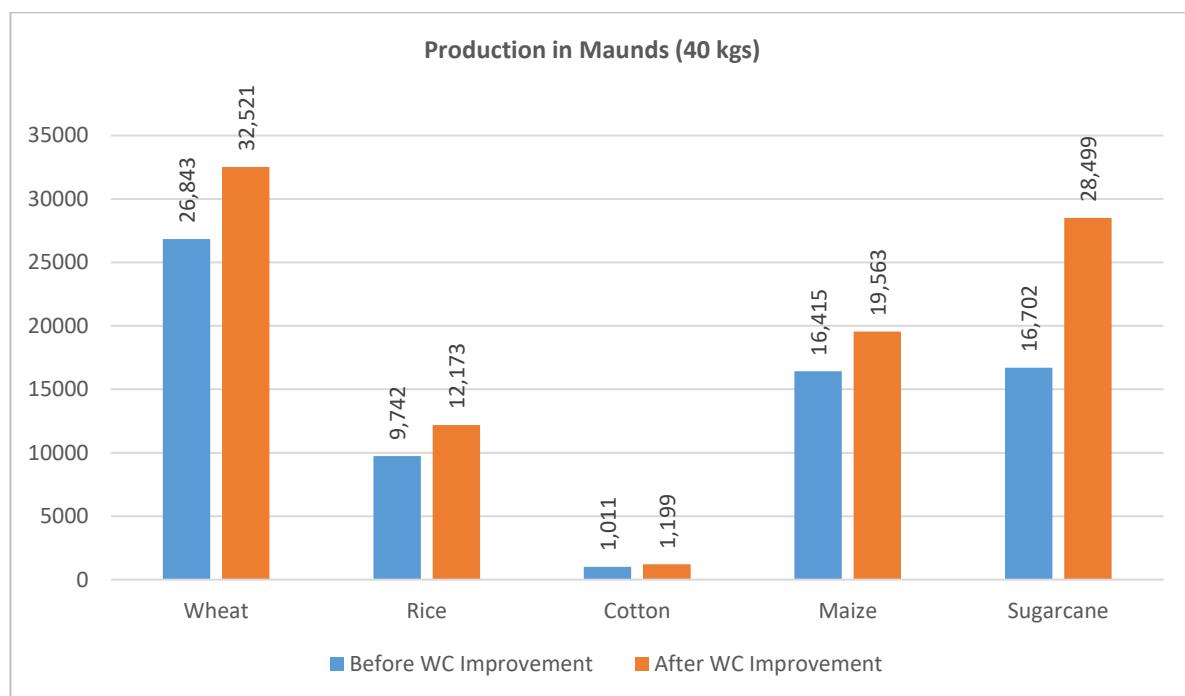


Figure 25: Impact of WST Construction on Major Crops Production on Sample Farms

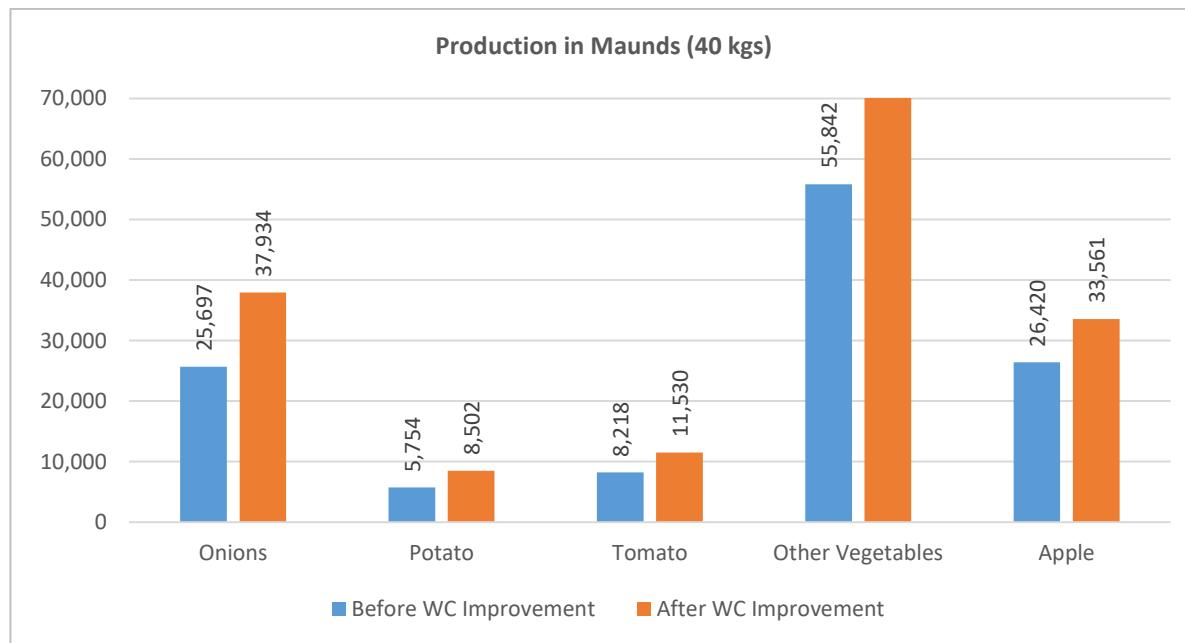


Figure 26: Impact of WST Construction on Fruit & Vegetable Production on Sample Farms

6.2.6. WST Construction Impact on Agriculture Employment

The impact of WST construction on agriculture employment has also been significant. Labor man days at the farm have increased ranging from 9 percent to more than 59% after WST construction. Crop-wise use of labor on farms has been given in **Table 89**. On an overall basis, employment at farms has increased by 25% due to the increase in crop area, crop yields and crop production.

Table 89: Impact of WST Construction on Agriculture Employment

Crops	Agricultural Employment		Change Impact	
	Before WST Construction		Percent	
			Labor Man Days	
Wheat	23738	26510	2772	12%
Rice	11409	12749	1340	12%
Cotton	2278	2474	196	9%
Maize	13947	15318	1371	10%
Sugarcane	1284	2048	764	59%
Pulses	582	874	292	50%
Onions	10529	13420	2890	27%
Potato	2350	3003	653	28%
Tomato	4036	5082	1046	26%
Other Vegetables	22349	32908	10559	47%
Apple	23289	25755	2467	11%
Other Fruits	18542	26596	8054	43%
Rabi Fodder	3171	4353	1181	37%
Kharif Fodder	1579	2311	732	46%
Total	139084	173401	34317	25%
Average per crop acre	40.8	41.1	0.2	1%
Average per farm	401	500	99	25%

Zone / Unit wise Impact on Agricultural Employment is given in **ANNEX-M**.

6.2.7. WST Construction Impact on Agriculture Household Income

Impact of WST construction on per acre net income varies from crop to crop. It varies from PKR. 1,008 for cotton to PKR. 37,905 for other vegetables per acre averaging at PKR. 12,744 for all crops. Crop-wise detail is given in **Table 90**

Table 90: Impact of WST Construction on Agriculture Household Income

Crops	Before WST Construction			After WST Construction			Increase in Net Income
	Gross Income	Cost of Production	Net Income	Gross Income	Cost of Production	Net Income	
	PKR per Acre						
Wheat	69,428	31,520	37,908	74,569	35,377	39,192	1,284
Rice	86,432	46,860	39,572	94,985	53,814	41,171	1,599
Cotton	76,440	43,275	33,165	83,677	49,504	34,173	1,008
Maize	91,885	52,645	39,240	101,256	60,624	40,632	1,392
Sugarcane	146,188	66,124	80,063	155,987	73,732	82,255	2,192
Pulses	46,275	21,256	25,018	48,295	22,183	26,112	1,094
Onions	135,876	79,711	56,165	154,589	94,771	59,818	3,653
Potato	289,787	121,871	167,916	320,033	140,648	179,385	11,469
Tomato	143,714	68,862	74,852	177,608	88,933	88,675	13,823
Other Vegetables	129,438	37,927	91,511	186,531	57,115	129,416	37,905
Apple	175,375	67,930	107,445	196,970	79,728	117,242	9,797
Other Fruits	241,500	123,925	117,575	267,408	143,395	124,013	6,438
Rabi Fodder	109,506	20,381	89,124	115,934	22,548	93,386	4,262
Kharif Fodder	83,018	11,448	71,570	86,468	12,461	74,007	2,437
Average	118,818	51,858	66,961	143,066	63,361	79,705	12,744

6.2.8. Impact on Farmers' Gross and Net Incomes under Completed Schemes

In the previous sub sections of this Chapter, we evaluated the impact on gross and net incomes of the 347 sample farms/ WSTs. In this sub section, sample results have been super imposed on all the 5,915 farms located on all

5,915 constructed Water Storage Tanks. Total gross and net incomes of all the farms on 5,915 constructed WSTs has been estimated at 6,706, and 3,779 million rupees respectively before the WST construction. Zone wise / unit wise detail is given in **Table 91**. The total Gross increase has increased by PKR 3,384 million and Net Income by PKR 1,842 million due to improvement of watercourses under all completed schemes.

Table 91: Impact on Total Gross and net Income of all the farms under completed WSTs

Zone / Unit	Impact on Gross Income of All Farms under Completed Schemes					
	Gross Income			Net Income		
	Before WST Construction	After WST Construction	Increase/ Impact	Before WST Construction	After WST Construction	Increase/ Impact
<i>Million Rupees</i>						
Punjab	2,060	2,920	860	1,161	1,627	466
KP	1,483	2,226	743	836	1,240	404
Balochistan	1,962	3,019	1,057	1,106	1,682	576
GB	614	1,006	391	346	560	214
AJK	586	918	332	330	512	181
Overall	6,706	10,090	3,384	3,779	5,621	1,842

6.3. Water Saving Impact of WSTs Construction

A Water Storage Tank is a structural best management practice that enables to capture and store canal water, surface water runs off during the rainy season, Tube well water, Tail water Recovery Ditches, Nullah, Steams, Springs, and dug wells waters etc., so that it may be used subsequently at required time for irrigation. The tanks are constructed at the locations where canal water can be collected and stored under gravity and adequate runoff can be accessible for the fields that will be irrigated using the stored water.

As before the construction of the tank, there was no such saving of water losses. The total water storage capacity from above mentioned sources of tanks along with the reported filing up frequency leads to calculating the water saving impact. On overall basis, saving in water losses calculates to 7.18 AF per Water Storage Tank per annum. For the 5,915 completed schemes total Savings calculated at 42,461 Acre Feet.

Zone wise details are given **Table 92** below.

Table 92: Zone wise Impact of Water Storage Tanks Construction on Water Saving

Zone / Unit	Completed Schemes	Savings in Water (AF)
Punjab	1121	8,015
KP	1225	8,955
Balochistan	2670	19,518
GB	455	2,976
AJK	444	2,997
Total	5,915	42,461
Average per WST		7.18

6.4. 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:

6.4.1. 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 93** below.

Table 93: 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%)

6.4.2. 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.

Zone / Unit wise detail has been given in **Table 94**.

Table 94: 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 total 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 95** below.

Table 95: 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 96** below.

Table 96: 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 case of 171 (49%) WSTs the variations were found in the specifications of the material used.

Zone / Unit wise detail has been given in **Table 97** below.

Table 97: Variation in Specifications of Material Used

Zone / Unit	No. of WST	According to Specifications	Not According to Specifications
Punjab	80	54 (68%)	26 (32%)
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	176 (51%)	171 (49%)

Out of 347 spots checked WSTs, in case of 309 (89%) WSTs, subsidy was paid as per cost estimates.

Zone / Unit wise detail has been given in **Table 98** below.

Table 98: 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 to be cut down. In their place 1,866 (more than thrice as per requirement) Saplings were planted out of which 394 survived after one year. WST protection arrangements were about 79% satisfactory and 96% WSTs were properly being maintained.

Zone and unit wise details are given in **Table 99**.

Table 99: 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	1,866	394	79%	96%

7. IMPACT EVALUATION OF COMPONENT C4

For conducting Impact Evaluation of Component C4 i.e., Delivery of Precision (Laser) Land Levelers (PLL), a sample of 318 PLL recipients was drawn randomly. In order to assess the agro-Economic impacts of PLL Units, Monitoring and Impact surveys were conducted after one year of their delivery using a monitoring tool in ANNEX-R. For this purpose, these Monitoring and Impact surveys have to be conducted on a 5% sample basis under revised methodology. Thus, for 6,196 PLL units delivered up to June 2024. Thus, the survey covered 318 PLL, exceeding the required sample size. A complete profile of these 318 sample PLL is given below:

7.1. Sample Size

For conducting Impact Evaluation Survey of Component C4 i.e., Precision (Laser) Land Leveling, a sample of 318 beneficiaries was drawn at random. Sample required as per 5% of the delivered PLL was 311. However, as mentioned above 318 PLL covered more than the required sample one year after their delivery. Further details are given in **Table 100**.

Table 100: Sample Size for Monitoring Evaluation of Precision Land Levelers

Zone	Delivered PLL	% Sample Required	Sample Required	Actual Sample Drawn
Punjab	6,112	5%	306	306
KP	50	5%	3	5
Balochistan	34	5%	2	7
Overall	6,196	5%	311	318

7.2. Educational Profile of Sample Beneficiaries

Most of the beneficiaries (87%) found literate. About 32.1% beneficiaries are primary / middle level, 26.1% matric, 13.2% Intermediate, 11.9% Graduates and 3.5% postgraduate. Zone-wise break up is given in **Table 101**.

Table 101: Educational Background of PLL Service Provider

Zone	Sample Size	Illiterate	Primary / Middle	Matric	FA	Graduate	Masters / Ph.D.
Punjab	13.4%	33.3%	26.8%	13.4%	9.8%	3.3%	13.4%
KP	20.0%	0.0%	0.0%	0.0%	60.0%	20.0%	20.0%
Balochistan	0.0%	0.0%	14.3%	14.3%	71.4%	0.0%	0.0%
Overall	318	13.2%	32.1%	26.1%	13.2%	11.9%	3.5%

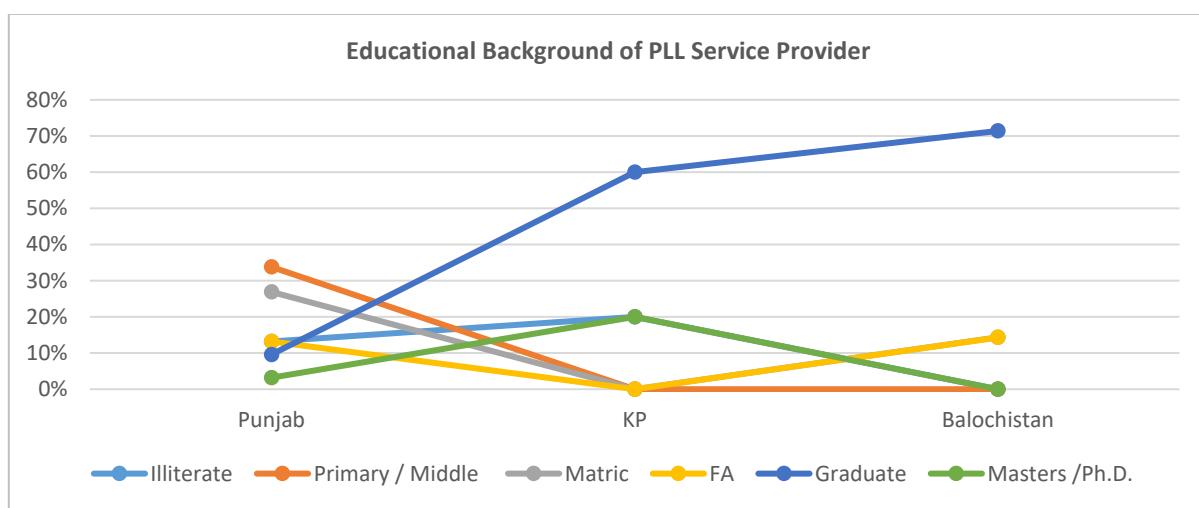


Figure 27: Educational Background of PLL Service Provider

7.3. Suppliers of Precision (Laser) Land levelers

About 50% i.e., 180 PLL sample units were supplied by 4 Supply and Service Companies (SSCs), namely 61 by Easy Farming, 57 by Crosfield Agro, 46 by Ruba Digital Laser and 21 by Modern Farming PLL Services. The other 133 sample units were supplied by other 14 different SSCs. Out of the total 318 PLL units surveyed, 306 were delivered in Punjab, 5 in KP and 7 in Balochistan. Further, SSC wise detail of PPL deliveries is given in **Table 102**.

Table 102: Supply and Service Companies for PLL Supplying to Service Provider

SSC	Punjab	KP	Balochistan	Total
Easy Farming	61	0	0	61
Cross Field Agro	54	3	0	57
Ruba Digital Laser	45	1	0	46
Modern Farming PLL Services	20	1	0	21
Others SSCs	126	0	7	133
Total	306	5	7	318

7.4. Monitoring of PLL Units

7.4.1. Training in PLL Drivers

About 59% of PLL drivers were fully trained for running PLLs in the field. Around 39% were self-trained and the rest 2% were found un-trained during the monitoring survey.

Zone-wise detail is given in **Table 103**.

Table 103: Training of PLL Operators

Zone	Trained	Self-trained	Not trained
Punjab	59%	40%	2%
KP	80%	0%	20%
Balochistan	29%	57%	14%
Overall	58%	39%	2%

7.4.2. Type of Training

There are three types of training for running PLL units. These include training for operation of PLL, Training for trouble shooting and repair & maintenance training. All the trained drivers in the all the three provinces were found to have got these trainings

Zone-wise detail is given in **Table 104** and can also be seen in **Figure 28**.

Table 104: Type of Training to PLL Trained Operators

Zone	Training for Operation of PLL	Training of Trouble Shooting	Training of Repair & Maintenance
Punjab	100%	100%	100%
KP	100%	100%	100%
Balochistan	100%	100%	100%
Overall	100%	100%	100%

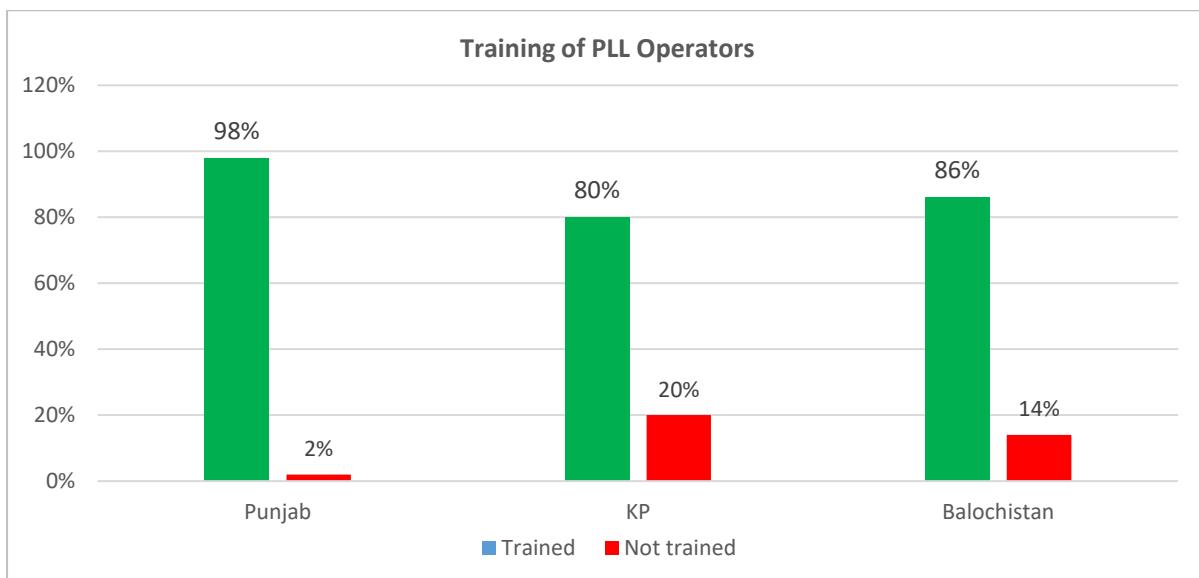


Figure 28: PLL Training of PLL Operators

7.4.3. Quality / Durability of PLL units

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

Zone-wise detail is given in **Table 105**, and a comparison can also be seen in **Figures 29**.

Table 105: Quality / Durability of the PLL unit

Zone	Good	Satisfactory	Not Satisfactory	Do not Know
Punjab	67%	28%	3%	1%
KP	100%	0%	0%	0%
Balochistan	14%	71%	0%	14%
Overall	66%	29%	3%	2%

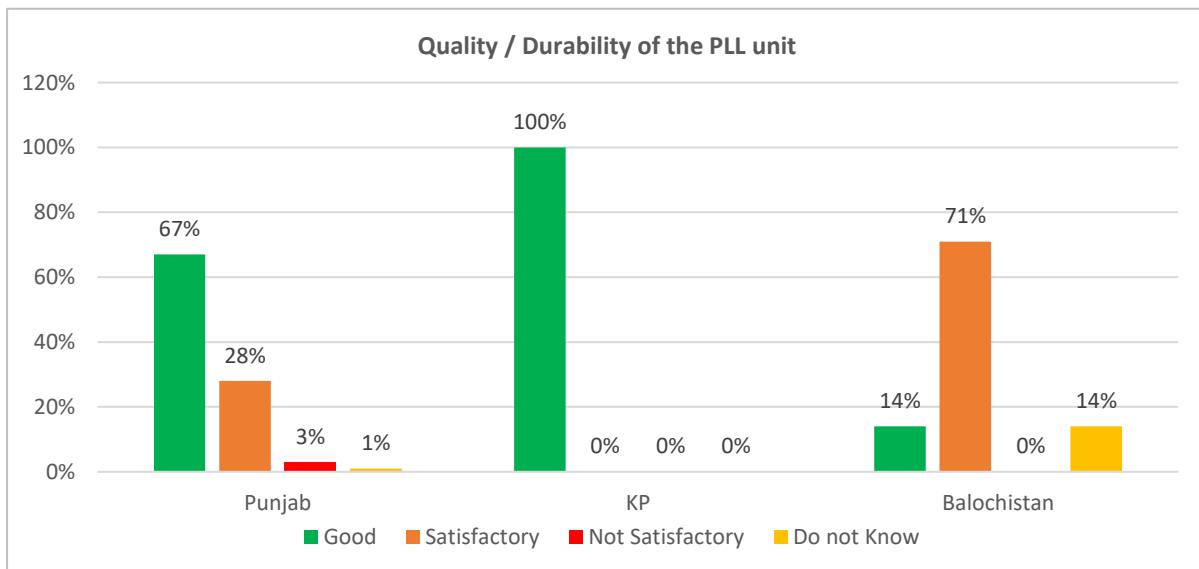


Figure 29: PLL Quality / Durability of the PLL unit

7.4.4. After Sale Service

Regarding after-sales service, 49% responded that it was good, 9% as poor, 5% as very poor and 37% responded that they do not know.

Zone-wise detail is given in **Table 106**, and a comparison can also be seen in **Figures 30**.

Table 106: After Sale Service by the SSC

Zone	Good	Poor	Very Poor	Didn't need Yet
Punjab	50%	8%	5%	37%
KP	0%	0%	0%	100%
Balochistan	29%	57%	0%	14%
Overall	49%	9%	5%	37%

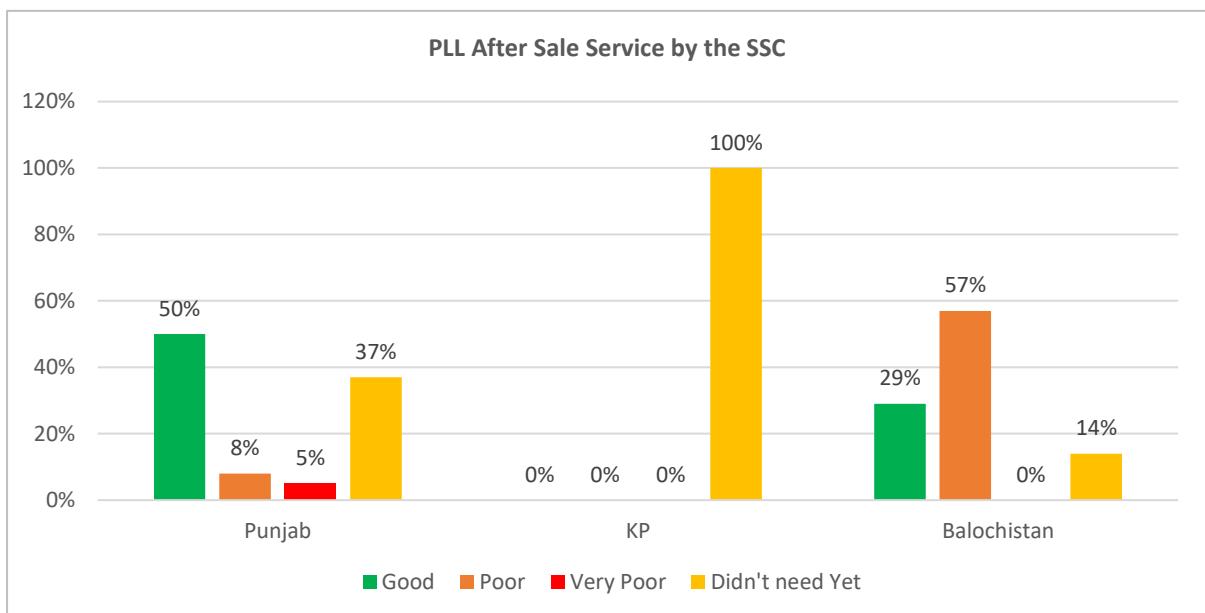


Figure 30: PLL After Sale Service by the SSC

7.4.5. Complaints Attended by SSCs

About 41% of beneficiaries responded that the attending of complaints by SSCs has been prompt and 15% said that the complaints were not being attended promptly. The rest 44% informed that they do not know.

Zone-wise detail is given in **Table 107**, and a comparison can also be seen in **Figures 31**.

Table 107: Complaints Attended by SSCs

Zone	Promptly	Not Promptly	Didn't need Yet
Punjab	42%	15%	43%
KP	0%	0%	100%
Balochistan	14%	14%	71%
Overall	41%	15%	44%

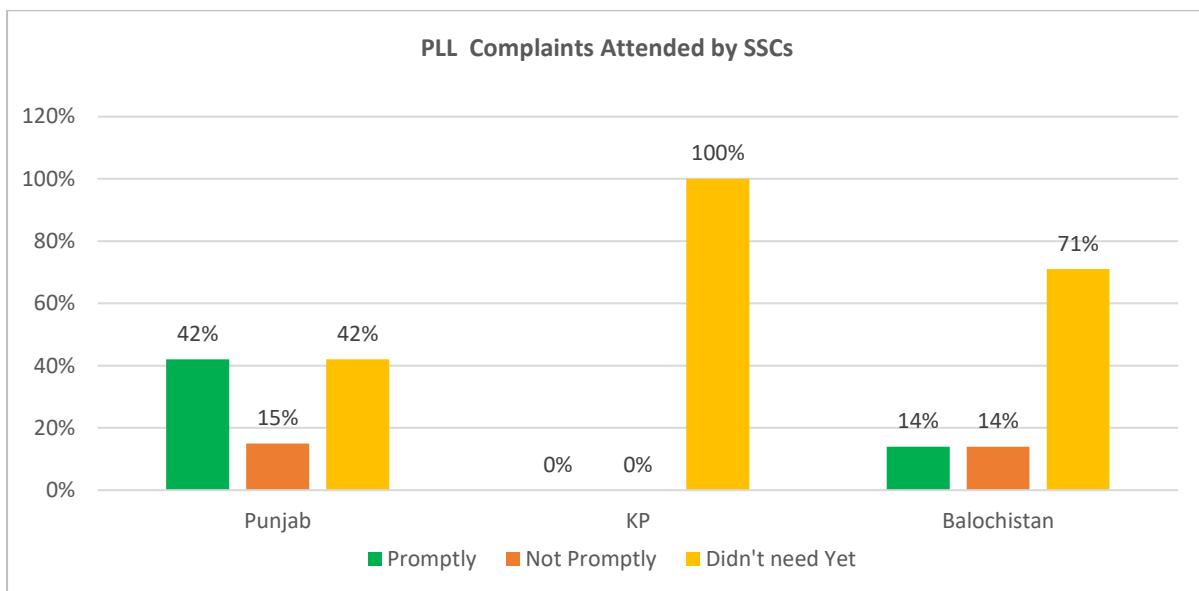


Figure 31: PLL Complaints Attended by SSCs

7.4.6. Prices of the PLL Units Charged by SSCs

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

Zone-wise detail is given in **Table 108**, and a comparison can also be seen in **Figures 32**.

Table 108: Prices of the PLL Units Charged by SSCs

Zone	High	Normal	Don't Know
Punjab	9%	44%	47%
KP	0%	0%	100%
Balochistan	0%	43%	57%
Overall	8%	44%	48%

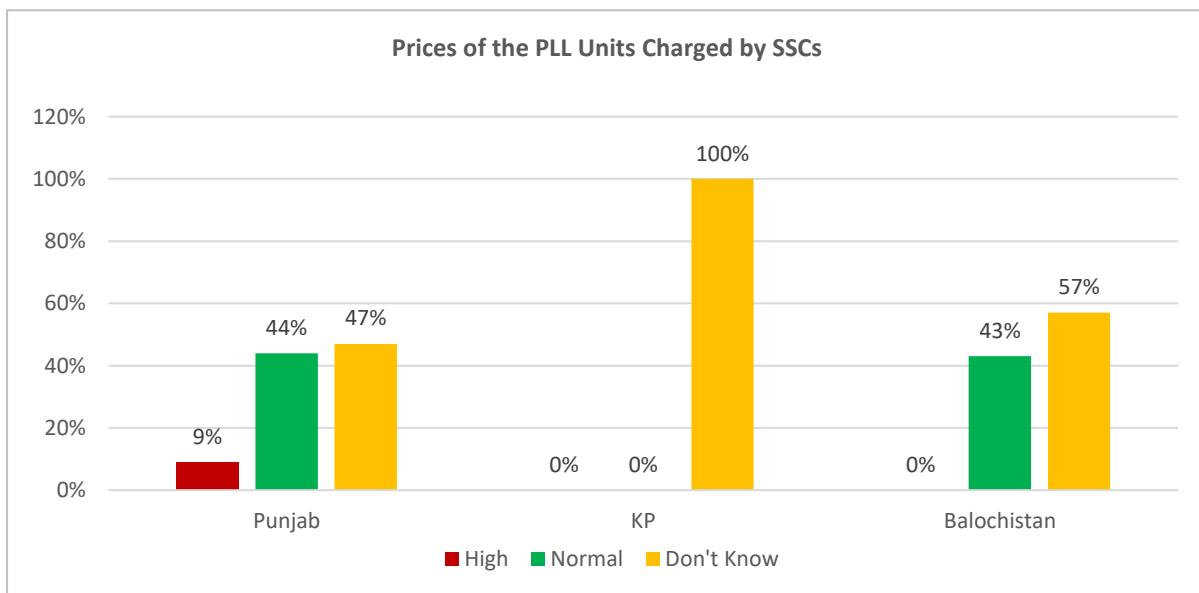


Figure 32: Prices of the PLL Units Charged by SSCs

7.4.7. Availability of Spare Parts by SSCs

The respondents were also asked about the availability of spare parts by the SSCs. Out of total 318 respondents, 26% responded that spare parts were available with SSCs whenever required, 6% informed that it took time long time, whereas the rest 68% reported that they did not need these spare parts yet.

Zone wise detail is given in **Table 109**, and a comparison can also be seen in **Figures 33**.

Table 109: Availability of Spare Parts with SSCs

Zone	When required	Takes Long Time	Didn't need Yet
Punjab	26%	6%	68%
KP	0%	0%	100%
Balochistan	43%	0%	57%
Overall	26%	6%	68%

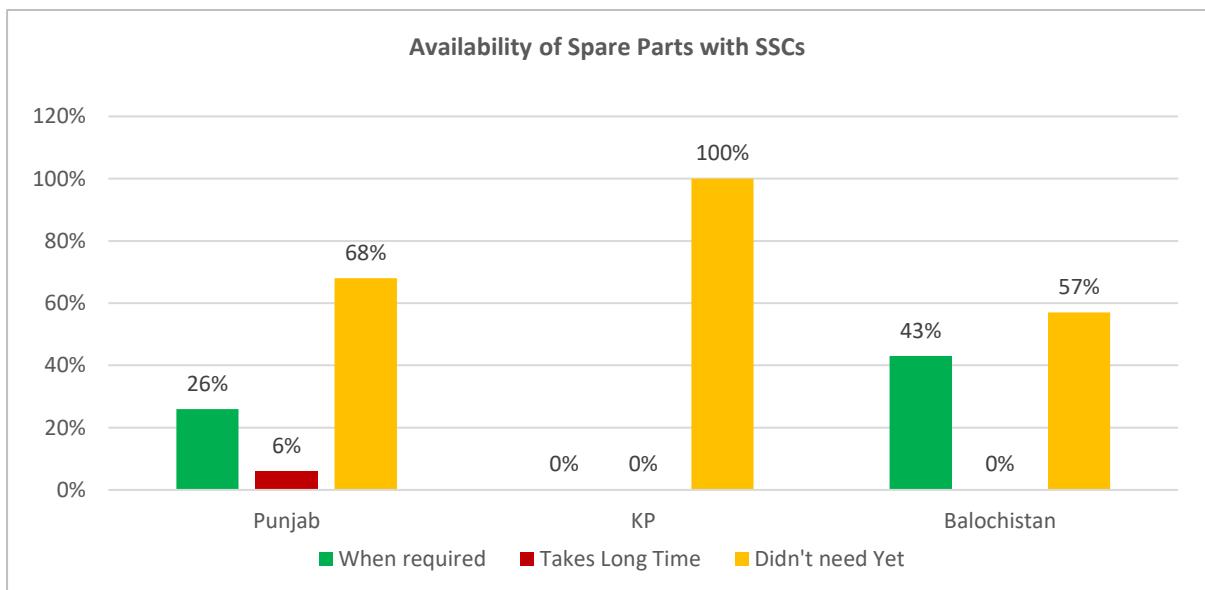


Figure 33: Availability of Spare Parts with SSCs

7.4.8. Price Charged for the Spare Parts

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

Zone-wise detail is given in **Table 110**, and a comparison can also be seen in **Figures 34**.

Table 110: Price Charged by the SSC for the Spare Parts

Zone/Unit	High	Normal	Didn't need Yet
Punjab	10%	20%	70%
KP	0%	0%	100%
Balochistan	0%	71%	29%
Overall	9%	21%	70%

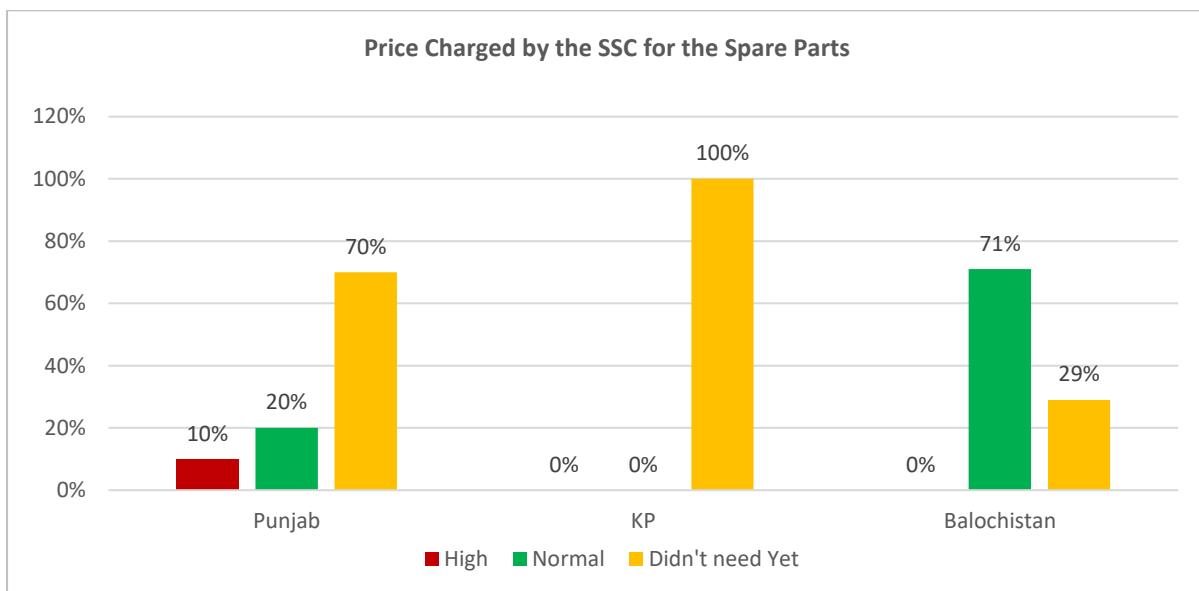


Figure 34: Price Charged by the SSC for the Spare Parts

7.4.9. Availability of Spare Parts in the Market

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

Zone-wise detail is given in **Table 111**, and a comparison can also be seen in **Figures 35**.

Table 111: Availability of Spare Parts in the Market

Zone/Unit	Only with SSC	From open market	Didn't know
Punjab	28%	31%	41%
KP	0%	0%	100%
Balochistan	43%	14%	43%
Overall	28%	30%	42%

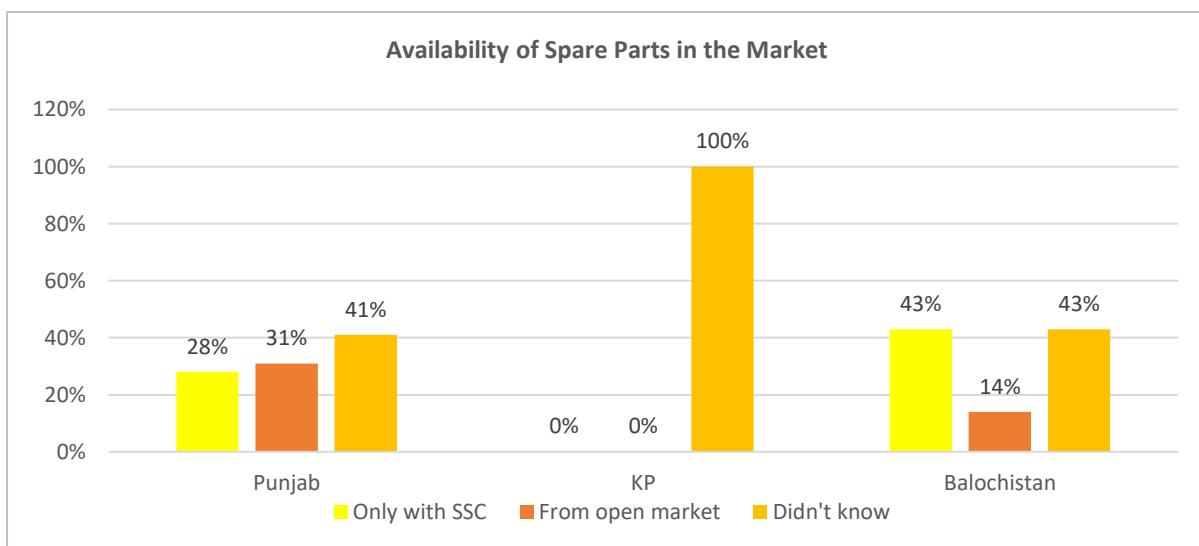


Figure 35: Availability of Spare Parts in the Market

7.5. Spot Checking of PLL

7.5.1. Purpose / Use of PLL

While spot checking, all 318 (100%) respondents were using PLL for agricultural purposes. No respondent was found using this equipment for non-agricultural purposes. Details may be seen in **Table 112**.

Table 112: Purpose / Use of PLL

Zone/Unit	Total PLL	Use for Agriculture Purpose	
		No	%
Punjab	306	306	100%
KP	5	5	100%
Balochistan	7	7	100%
Overall	318	318	100%

7.5.2. Spot Checking at Site

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

Zone-wise details are provided in **Table 113**, and a comparison can also be seen in **Figures 36 and 37**.

Table 113: Spot Checking at Site

Zone/Unit	Found at Location	Rented Out to other location	Condition / Upkeep of the unit		
			Good	Satisfactory	Poor/ Un-Satisfactory
Punjab	285	21	66%	30%	4%
KP	5	0	100%	0%	0%
Balochistan	4	3	25%	50%	25%
Overall	294	24	66%	30%	4%

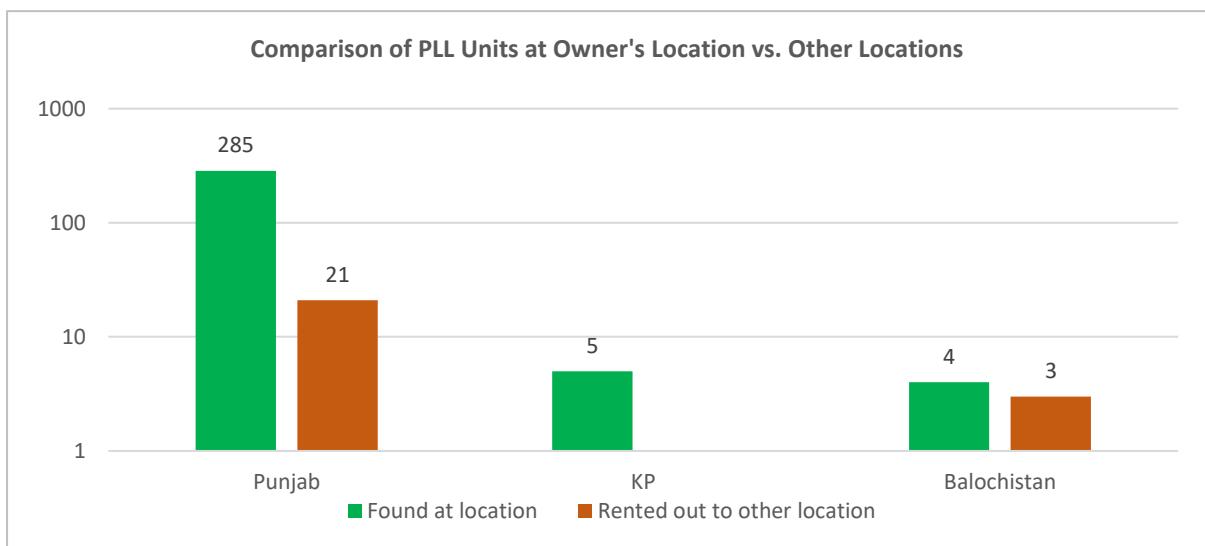


Figure 36: Comparison of PLL Units at Owner's Location vs. Other Locations

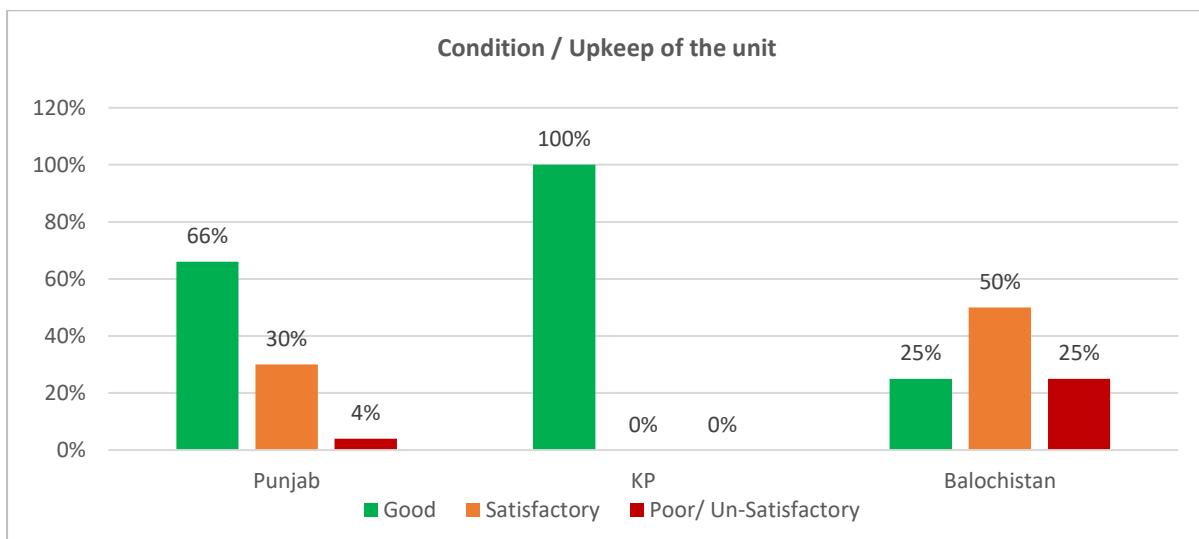


Figure 37: Comparison of PLL Units at Owner's Location vs. Other Locations

7.6. Agro-Economic Monitoring Impact Evaluation of PLL Units

7.6.1. Record Keeping of Laser Land Leveling Services to Other Farmer

About 95% of PLL owners provide laser leveling services to the other fellow farmers. Out of these service providers only 13% keep a complete or partial record of their lending services. Out of these 13 percent, 63% keep record on logbooks, 31% on loose papers.

Zone Wise Details may be seen in **Table 114** and in **Figure 38**.

Table 114: Record Keeping of Laser Land Leveling Services to Other Farmer

Zone/Unit	Provide service to other farmers	Record Keeping of Lending PLL Services to Other Fellow Farmers						
		Keep Record			Keep Record in			
		Complete	Partial	No	logbook	Loose papers	Not in Writing	
Punjab	96%	9%	4%	87%	63%	31%	6%	
KP	80%	0%	0%	100%	0%	0%	0%	
Balochistan	57%	0%	0%	100%	3%	0%	0%	
Overall	95%	9%	4%	87%	63%	31%	6%	

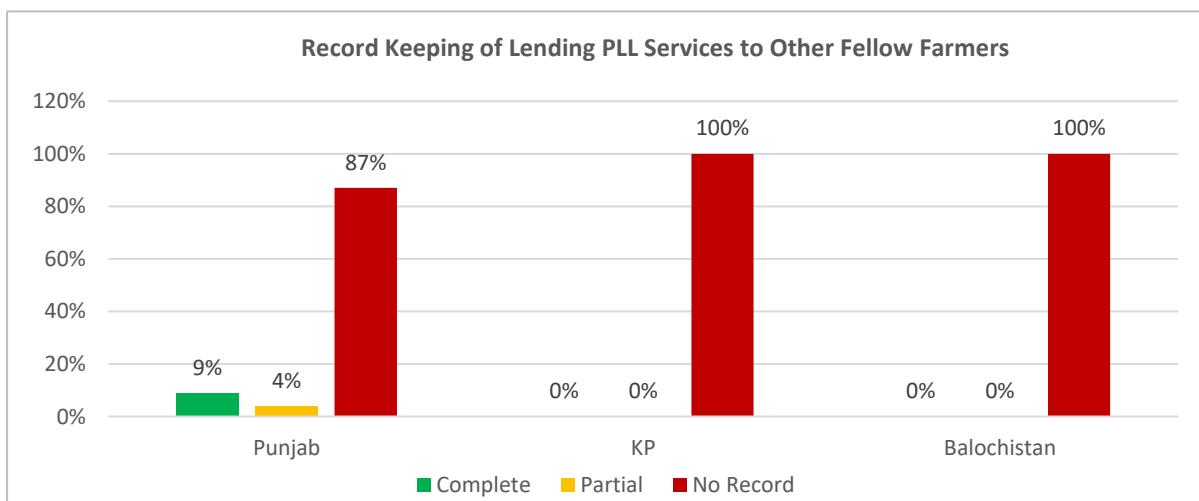


Figure 38: Record Keeping of Lending PLL Services to Other Fellow Farmers

7.6.2. Land Leveled during the last Rabi and Kharif Cropping Seasons

Total laser land levelled by the 318 respondent PLL owners during last Rabi and Kharif cropping seasons was 111,422 acres or 350 acres per PLL. Out of these total 111,422 acres, 9,645 acres (30 acres per equipment) was owned land, and 101,777 acres (320 acres per equipment) were laser levelled on rent of other fellow farmers. Further detail may be seen in **Table 115** and in **Figure 39**.

Table 115: Land Leveled during last Rabi and Kharif cropping Seasons

Zone/Unit	PLL Numbers	Own Land levelled (acres)		Other Farmers Land Levelled (acres)		Total Land Levelled (Acres)	
		Total	Per PLL	Total	Per PLL	Total	Per PLL
Punjab	306	9,238	30.2	100,833	329.5	110,071	359.7
KP	5	48	9.6	294	58.8	342	68.4
Balochistan	7	359	51.3	650	92.9	1,009	144.1
Overall	318	9,645	30.3	101,777	320.1	111,422	350.4

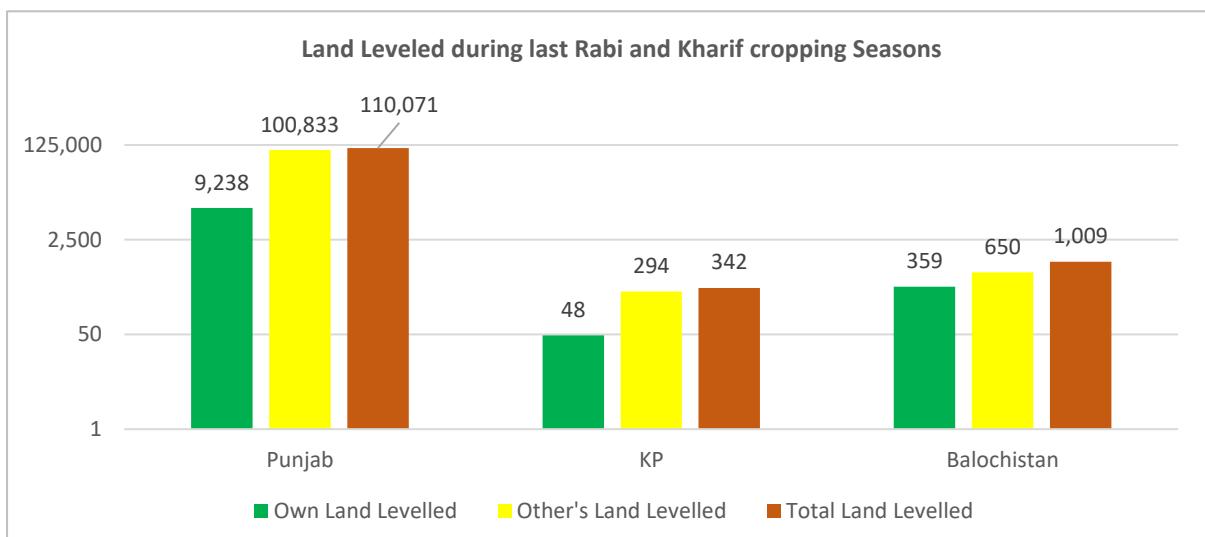


Figure 39: Land Leveled during last Rabi and Kharif cropping Seasons

7.6.3. PLL Beneficiaries

Total annual PLL beneficiaries calculates to 16,742 farmers including the owners themselves or 53 farmers per equipment. Details are given in **Table 116** and in **Figure 40**.

Table 116: PLL Beneficiaries

Zone/Unit	Owner Beneficiaries		Other Beneficiaries		Total Beneficiaries	
	Total	Average Per PLL	Total	Average Per PLL	Total	Average Per PLL
Punjab	306	1	16286	53.2	16,592	54.2
KP	5	1	92	18.4	97	19.4
Balochistan	7	1	46	6.6	53	7.6
Overall	318	1	16,424	51.6	16,742	52.6

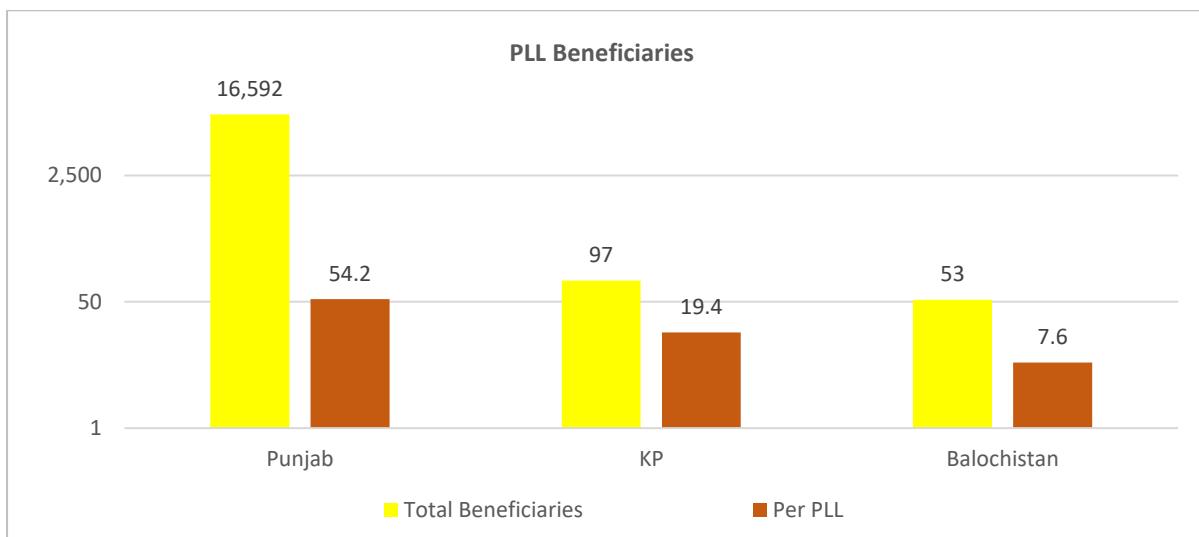


Figure 40: PLL Zone Wise Beneficiaries

7.6.4. Impact of PLL on Crop yields

Impact of PLL on crop yield was also assessed through the farmers' perception. The growers were of the view that laser leveling increases yields of various crops ranging from 20% to 34% averaging at 24.3% on the whole. Crop-wise detail is given in **Table 117** and in **Figure 41**.

Table 117: Impact of PLL on Crop yields

Crops	Crop Yields Before PLL	Crop Yields After PLL	Increase in Crop Yields Due to PLL	
			Maunds / Per acre	Percent Increase
Wheat	35.7	44.3	8.7	24.4%
Sugarcane	741.2	931.2	190.0	25.6%
Rice	45.1	54.5	9.4	20.7%
Cotton	14.3	19.3	4.9	34.2%
Maize	76.8	100.1	23.3	30.3%
Vegetables	447.6	544.3	96.7	21.6%
Other Crops	68.7	82.7	14.0	20.4%
Weighted average increase in crop yields				24.3%

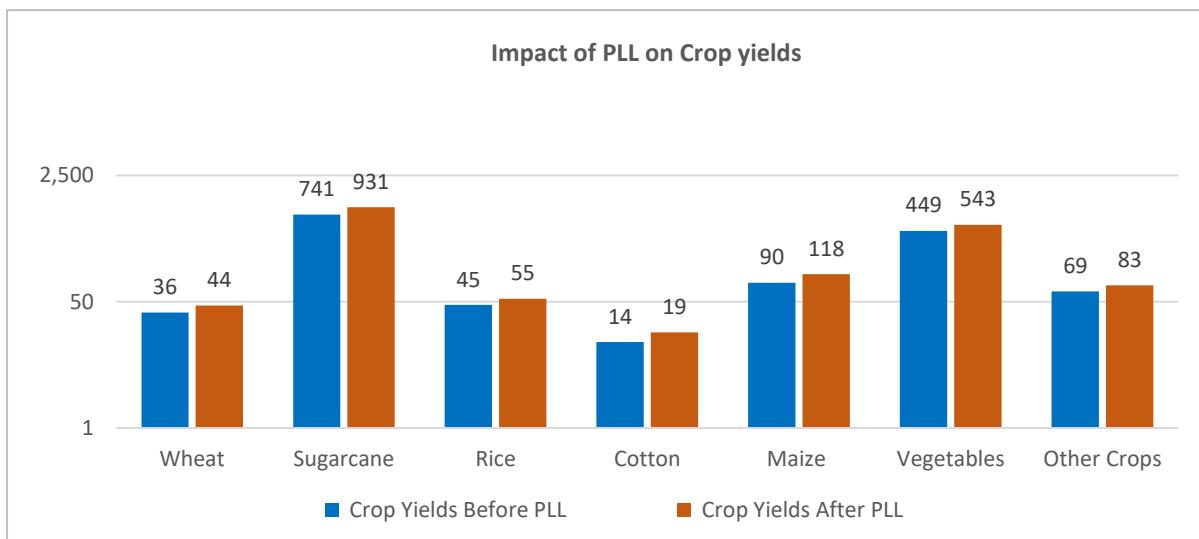


Figure 41: Impact of PLL on Crop yields

7.6.5. Impact of PLL on Net Income / Benefits

Benefits of PLL have also been estimated on a basis yield increases at the same rate as estimated under watercourses improvement. Details are given in **Table 118**. Total Annual Net income or benefits of all the delivered PLL are estimated as 4,213 million PKR whereas, per PPL unit these works out as 677 thousand PKR annum.

Table 118: Impact of PLL on Annual Net Income or Benefits

Total PLL delivered	No.	6,219
Area Levelled per PLL	Acres	394
Total area Levelled	1000 Acres	2,450
Net Benefits per acre as under watercourses improvement	PKR	3,719
Less Operating cost per acre	PKR	2,000
Net Benefits per PLL	1000 PKR	677
Total Net Benefits due to 6,219 delivered PLL	Million PKR	4,213

7.6.6. Water Saving Impact of PLL Units

Information was also asked for from the growers regarding the saving of water due to Precision Land Leveling. On an average 0.57 to 1.24 hours were reported per acre to be saved of water due to Precision Land Leveling. Overall weighted average per cent saving in water has been estimated as 34%. Crop-wise detail is given in **Table 119**.

Table 119: Crop wise average irrigation time per acre (Hrs.)

Crops	Before PLL	After PLL	Saving	
	Hours / Acre		% %	
Wheat	3.4	2.2	1.2	35.6%
Sugarcane	2.8	1.8	1.0	35.3%
Rice	3.5	2.3	1.2	35.5%
Cotton	2.3	1.7	0.7	28.4%
Maize	2.2	1.3	0.9	40.0%
Vegetables	1.7	1.2	0.6	33.0%
Other Crops	2.4	1.7	0.7	30.4%
Weighted Average increase saving in water				34%

7.6.7. Annual Water Savings due to Laser Land Levelling

Based on information, obtained through field surveys annual water savings due to Laser Land Levelling has been estimated and given in **Table 120**. Total water saved due to all 6,219 PLL units is estimated as 1,225,143 acre-feet (AF), whereas it calculates as 197 AF per PLL unit.

Table 120: Annual Water Savings due to Laser Land Levelling

PLL delivered	6,219
Area Levelled per PLL	394
Total Acres Levelled	2,450,286
Average Annual Water Requirement per acre (1inches)	24
Average Annual Water Requirement per acre (AF)	4,900,572
Savings due to Laser levelling (%)	25%
Total Saving due to Laser levelling under completed activities (AF)	1,225,143
Saving due to Laser levelling per PLL (AF)	197.0

8. 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.

8.1. Impact on Waterlogging Reduction

Following watercourse improvements—including partial lining of critical reaches, canal embankment stabilization, and improved discharge structures—farmers across provinces reported measurable improvements:

- **Punjab:** Waterlogged area decreased by **45%** ($\downarrow 1,706$ acres)
- **KP:** Decrease of **41%** ($\downarrow 1,331$ acres)
- **Balochistan:** Decrease of **32%** ($\downarrow 4,593$ acres)

Table 121: Impact of Watercourse Improvement on Waterlogged Area (Acres)

Zones / Units	Before WC Improvement			After WC Improvement			Impact	
	Average Area	WCs	Total Area	Average Area	WCs	Total Area	Reduction	%age
Punjab	0.75	5,108	3,808	0.41	5,108	2,102	1,706	45%
KP	0.98	3,285	3,210	0.57	3,285	1,879	1,331	41%
Balochistan	3.21	4,510	14,480	2.19	4,510	9,887	4,593	32%
GB	-	913	-	-	913	-	-	-
AJK	-	586	-	-	586	-	-	-
ICT	-	41	-	-	41	-	-	-
Overall	1.49	14,443	21,497	0.96	14,443	13,867	7,630	35%

These changes represent a cumulative recovery of **7,630 acres** of land from waterlogging. Farmers highlighted faster water delivery, reduced infiltration, and greater control at turnouts as key contributors to this positive change.

8.2. Impact on Salinity Reduction

Improvements in water delivery not only helped reduce over-irrigation but also minimized the rise of saline water through capillary action:

- **KP** exhibited the most significant improvement, with a **59% decrease** in salinity-affected lands ($\downarrow 3,491$ acres).
- **Punjab** reported a **28% decrease** ($\downarrow 2,153$ acres), while **Balochistan** recorded a **17% reduction** ($\downarrow 1,411$ acres).

Table 122: Impact of Watercourse Improvement on Salinity Area (Acres)

Zones / Units	Before WC Improvement			After WC Improvement			Impact	
	Average Area	WCs	Total Area	Average Area	WCs	Total Area	Reduction	%age
Punjab	1.50	5,108	7,657	1.08	5,108	5,504	2,153	28%
KP	1.80	3,285	5,915	0.74	3,285	2,424	3,491	59%
Balochistan	1.88	4,510	8,463	1.56	4,510	7,051	1,411	17%
GB	-	913	-	-	913	-	-	-
AJK	-	586	-	-	586	-	-	-
ICT	-	41	-	-	41	-	-	-
Overall	1.53	14,443	22,034	1.04	14,443	14,979	7,055	32%

The total area reclaimed from salinity amounted to **7,055 acres**. Farmers noted visible changes in soil structure, better germination rates, and increased crop yields, especially in wheat and cotton belts.

Observations and Analysis

- **Hydraulic Efficiency:** Lined watercourses displayed visibly higher flow velocities and reduced head losses, minimizing seepage.
- **Seepage Control:** Concrete and brick lining prevented lateral infiltration into adjacent soils, a key factor in suppressing waterlogging.
- **Water Management Practices:** WUA members indicated improved awareness and discipline in rotational irrigation after the infrastructure upgrades.
- **Soil Rehabilitation:** The reduction in standing water and salt crusts has gradually led to the revitalization of previously non-productive plots.

8.3. Conclusion

The quantitative and perceptual data gathered from the field validate the role of watercourse improvement in combating waterlogging and salinity. These findings strengthen the case for scaling up similar interventions in vulnerable zones and demonstrate the economic and environmental value of targeted irrigation infrastructure development under NPIWC-II.

9. ENDLINE ECONOMIC ANALYSIS

9.1. Project Benefits

In the previous sections, we had an estimated annual net income or benefits for each component. These are summarized in **Table 123**. Total annual projects benefits are PKR 36,742 million PKR. Component wise break up is presented in **Table 123**.

Table 123: Component wise Project Benefits

Project Components	Net Income of Benefits in Million PKR
Component C2 Improvement of Watercourses	30,687
Component C3 Construction of WSTs	1,842
Delivery of Precision Land Levelers (PLL)	4,213
Total tangible Project Benefits	36,742

9.2. Project Costs

Zone wise, year wise and category wise break up of Project cost / releases during the last 4 years has been shown in **Table 124**. Total project cost in the 5 years calculates as 42,629 million PKR.

Table 124: Zone wise and Year wise Project Expenditure / Cost (Million PKR)

Zone	Financial Year	ADP Cost	PSDP Cost	Total Cost	Community Share	Total Project Cost
Punjab	2019-20	797	1,385	2,182	826	3,008
KP	2019-20	486	675	1,161	331	1,492
Balochistan	2019-20	986	725	1,711	544	2,255
GB	2019-20	0	830	830	100	930
AJK	2019-20	0	325	325	8	333
ICT	2019-20	0	25	25	0	25
FWMC	2019-20	0	410	410	0	410
Punjab	2020-21	1,729	879	2,608	1,338	3,946
KP	2020-21	709	165	874	161	1,035
Balochistan	2020-21	800	330	1,130	243	1,373
GB	2020-21	0	200	200	50	250
AJK	2020-21	0	130	130	32	162
ICT	2020-21	0	60	60	0	60
FWMC	2020-21	0	800	800	0	800
Punjab	2021-22	5,212	724	5,936	2,422	8,358
KP	2021-22	790	373	1,163	345	1,508
Balochistan	2021-22	1,490	653	2,143	316	2,459
GB	2021-22	0	215	215	50	265
AJK	2021-22	0	107	107	42	149
ICT	2021-22	0	12	12	0	12
FWMC	2021-22	0	628	628	0	628
Punjab	2022-23	1,000	1,870	2,870	759	3,629
KP	2022-23	256	297	553	133	686
Balochistan	2022-23	501	802	1,303	30	1,333
GB	2022-23	0	200	200	57	257
AJK	2022-23	0	253	253	42	295
ICT	2022-23	0	12	12	0	12
FWMC	2022-23	0	587	587	0	587
Punjab	2023-24	2,986	484	3,470	975	4,445
KP	2023-24	38	140	177	159	337
Balochistan	2023-24	360	281	641	620	1,261
GB	2023-24	0	151	151	28	178
AJK	2023-24	0	68	68	1	69
ICT	2023-24	0	3	3	0	3
FWMC	2023-24	0	78	78	0	78
Total		18,139	14,877	33,016	9,612	42,629

A zone wise and year wise summary of the above Project releases / cost is produced in **Table 125**. In 2019-20, an amount of 8,453 million PKR was incurred, in 2020-21, 7,626 million PKR, in 2021-22, 13,378 million PKR, in 2022-23, 6,800 million PKR, in 2023-24, 6,371 million PKR, and 42,629 million PKR in all 5 years.

Table 125: A Summary of Zone wise and Years wise Project costs /Releases

Zone	2019-20	2020-21	2021-22	2022-23	2023-24	Total
Punjab	3,008	3,946	8,358	3,629	4,445	23,386
KP	1,492	1,035	1,508	686	337	5,058
Balochistan	2,255	1,373	2,459	1,333	1,261	8,681
GB	930	250	265	257	178	1,880
AJK	333	162	149	295	69	1,008
ICT	25	60	12	12	3	112
FWMC	410	800	628	587	78	2,504
Total	8,453	7,626	13,378	6,800	6,371	42,629

9.3. Benefit Cost Ratio

Benefit Cost Ratio is a ratio of Present Value of project benefits to the Present Value of Project costs. At 12% discount rate, Benefit Cost Ratio (BCR) has been calculated at 2.8 in **Table 126**.

Table 126: Calculation of Benefit Cost Ratio at 12% discount Rate

dis. Factor at 12% dis. Rate/year	Year	Current Annual Project Costs and Benefits				Discounted	
		Capital Cost	Recurring R&M Cost	Project Costs	Project Benefits	Project Costs	Project Benefits
1	0	0	0	0	0	0	0
0.892857143	1	8,453	0	8,453	0	7548	0
0.797193878	2	7,626	193	7,819	5348	6233	4263
0.711780248	3	13,378	378	13,756	10478	9792	7458
0.635518078	4	6,800	709	7,509	19659	4772	12494
0.567426856	5	6,371	876	7,247	24285	4112	13780
0.506631121	6		876	42,629	36742	22041	18614
0.452349215	7		876	876	36742	396	16620
0.403883228	8		876	876	36742	354	14839
0.360610025	9		876	876	36742	316	13249
0.321973237	10		876	876	36742	282	11830
0.287476104	11		876	876	36742	252	10562
0.256675093	12		876	876	36742	225	9431
0.22917419	13		876	876	21194	201	4857
0.204619813	14		876	876	21194	179	4337
0.182696261	15		876	876	21194	160	3872
0.163121662	16		876	876	21194	143	3457
0.145644341	17		876	876	21194	128	3087
0.13003959	18		876	876	21194	114	2756
0.116106777	19		876	876	21194	102	2461
0.103666765	20		876	876	21194	91	2197
Present Values of Project Costs and Project Benefits					57439	160165	
					Benefit Cost Ratio	2.8	

9.4. Internal Rate of Return (IRR)

Internal Rate of Return (IRR) is the rate of discount at which Net Present Value of both costs and benefits becomes equal or BCR turns out unity. It has been calculated at 50% in **Table 127**.

Table 127: Calculation of Internal Rate of Return (IRR)

dis. Factor at 50% dis. Rate/year	Year	Current Annual Project Costs and Benefits				Discounted	
		Capital Cost	Recurring R&M Cost	Project Costs	Project Benefits	Project Costs	Project Benefits
1	0	0	0	0	0	0	0
0.666666667	1	8,453	0	8,453	0	5635	0
0.444444444	2	7,626	193	7,819	5348	3475	2377
0.296296296	3	13,378	378	13,756	10478	4076	3105
0.197530864	4	6,800	709	7,509	19659	1483	3883
0.131687243	5	6,371	876	7,247	24285	954	3198
0.087791495	6		876	43,505	36742	3819	3226
0.058527663	7		876	876	36742	51	2150
0.039018442	8		876	876	36742	34	1434
0.026012295	9		876	876	36742	23	956
0.01734153	10		876	876	36742	15	637
0.01156102	11		876	876	36742	10	425
0.007707347	12		876	876	36742	7	283
0.005138231	13		876	876	21,194	5	109
0.003425487	14		876	876	21,194	3	73
0.002283658	15		876	876	21,194	2	48
0.001522439	16		876	876	21,194	1	32
0.001014959	17		876	876	21,194	1	22
0.000676639	18		876	876	21,194	1	14
0.000451093	19		876	876	21,194	0	10
0.000300729	20		876	876	21,194	0	6
Present Values of Project Costs and Project Benefits					19,597	21,987	
					Benefit Cost Ratio	1.1	

9.5. Project Development Objective Level Results

The endline analysis shows that as the physical targets are under achieved, some of the PDO Level Results are also lagging behind. However, a comparison between the Endline targets and achievements have been made in Table 128.

Table 128: PDO Level Results Indicators under NPIWC-II

Sr. No.	PDO Level Results Indicators	Unit	Baseline	Mid-term		Endline	
				Target	Achieve- ment	Target	Achieve- ment
1	Watercourses with an increase in watercourse conveyance efficiency of at least 15%.	Number	0	27,871	11,454	47,278	14,443
2	Direct project beneficiaries of watercourse improvements-households (number) ^(a)	Number	0	975,485	601,878	1,654,730	2,133,278
3	Construction of Water Storage Tanks	Number	0	8,472	5,390	14,932	5,915
4	Provision of Laser Land Leveling	Number	0	7,460	5,928	11,610	6,219
5	Increase in cropping intensity in Canal command areas (watercourses).	Percentage	168%	5%	8%	5%	8%
6	Increase in Cropping Intensity in non-canal command areas	Percentage	110%	24%	18%	24%	21%
7	Increase in Agriculture output per unit of water (watercourses)	PKR/M ³	8	3	7	3	7
8	Reduction in water losses in project area due to watercourse lining	% age	45%	33%	30%	33%	30%
9	Reduction in field application losses due to laser land leveling	% age	30%	33%	25%	33%	25%
10	Increase in agriculture output per unit of water (laser leveling)	PKR/M ³	8	3	3	3	3
11	Area benefited due to improvement of watercourses ^(b)	Acres	0	6,689,040	1,300,965	11,346,720	2,133,278
12	Area leveled by laser Land Leveling units	Acres	0	2,238,000	1,508,343	3,483,000	2,450,286
13	Area served by Water Storage Tanks ^(c)	Acres	0	69,894	53,657	95,782	62,763

REFERENCES

1. *Umbrella PC-I of NPIWC-II*
2. *Feasibility Study*
3. *Consolidated Baseline Survey Report*
4. *Various Monitoring and Impact Evaluation Surveys*
5. *SIAPEP Mid-term Impact Assessment*
6. *Various SIAPEP FFS Studies*
7. *Various SIAPEP KG Kits Studies*
8. *Various SIAPEP Baseline Studies on Watercourses Lining*
9. *Various SIAPEP Baseline Studies on High Efficiency Irrigation Systems*
10. *PLL SIAPEP Monitoring and Impact Report*
11. *PLL SIAPEP Monitoring and Impact Report*
12. *Various SIAPEP Flow Measurement Reports*
13. *Pakistan Economic Survey-----Various Issues*
14. *Agricultural Statistics of Pakistan-----Various Issues*

ANNEX-A: MONITORING LOG-FRAME

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
C1: Organization of Water Users' Associations (WUAs)	Reactivation of existing / organization of water users' associations. Ensuring one on each target watercourse. Total WUAs ensured 47,278.	a) Community mobilization at 47,278 watercourses	a) Total 47,278 WUAs reactivated / established/registered	a) Right of way of 47,278 watercourses available b) Skilled and unskilled labor required for watercourse improvement available. c) Construction material for civil works of watercourses procured. d) Alternate arrangement for water conveyance during construction made. e) Watercourse improved	a) Disputes among the water users settled. b) Farmers branched improved. c) Water allocation was made amicably. d) Maintenance of watercourses, WST and laser units done e) Cooperation among farmers increased	a) 47,278 watercourses improved and 15 percentage points conveyance losses reduced. b) Litigation among farmers reduced.	a) The functioning of the WUAs will be established through sample interview surveys of WUAs members twice during the project period
C2: Watercourses Improvements	Improvement of 47,278 watercourses on cost sharing basis: 40% farmers in terms of labor, and 60% funded by project.	a) Establishment of 47,278 Water users' associations (WUAs); b) Registration of 47,278 WUAs. c) Improvement and realignment of earthen section of 47,278 watercourses.	a) 47,278 WCAs were established. b) 47,278 WCAs registered. c) 47,278 watercourses improved and lined.	a) Conveyance losses for improved watercourses decreased by about 15 percentage points. b) 1.654 million households benefited from the activity.	a) Increase in cropping intensity on improved watercourses by 5-24%. b) Increase in crop yields. c) Increase in irrigated area. d) Increase in agriculture output	a) Increase in farm income. b) Increase in employment for farm labor. c) Reduction in poverty. d) Enhanced food security for the country.	a) The water flow measurements will be carried out before and after watercourse improvement on 2-5% sample basis. b) Agriculture survey before and after watercourse

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
		<p>d) Lining of up to 50% length of 47,278 watercourse either by:</p> <ul style="list-style-type: none"> • Precast concrete parabolic lining (PCPL) segments, or • Rectangular brick masonry, or any other method as approved by the project. 		<p>c) 11.347 million acres served with improved watercourses</p>	<p>per unit of water by about 37%</p>		<p>improvement on 2-5% sample basis.</p> <p>c) The survey will determine:</p> <ul style="list-style-type: none"> • Cropping pattern before and after the improvement. • Cropping intensities before and after improvement. • Before and after crop yields. • Before and after employment. <p>d) The difference between before and after will be considered the result of the intervention after netting out the contribution of the growth pattern of the crop sector otherwise.</p>
C3: Construction of Water Storage Tanks (WSTs)	a) Construction of 14,932 water storage tanks	a) 14,932 small farmers mobilized to construct	a) 14,932 WSTs were constructed.	a) Water which was otherwise largely	a) More area irrigated.	a) Increased crop yields	a) 2-5% sample of WSTs will be surveyed.

Project subcomponents	Targets	Activities	Outputs	Outcome-1	Outcomes-2	Goals / Impact	Methodology for measuring results
		<p>water storage tanks for irrigation.</p> <p>b) They agree to contribute 40% of the cost.</p> <p>c) Agree to first construct the tank with his/her own funds and then received subsidy at 40% on issuance of FCR</p>	<p>b) 14,932 WSTs operated and maintained</p>	<p>going to be wasted is saved.</p> <p>b) Irrigation is provided at critical stages of the crops.</p> <p>c) Flexibility achieved for irrigation</p>	<p>b) Increased cropping intensities</p>	<p>b) Increased total crop output quantum.</p> <p>c) Increased farm income</p> <p>d) Increased farm employment</p>	<p>b) A data collection form will be designed to measure water saving due to WSTs.</p> <p>c) The forms used for baseline and impact surveys in case of watercourses will also be used for WSTs.</p> <p>d) Same data analysis will be carried out here as in case of watercourses.</p>
C4: Provision of Land Leveling Units	<p>a) Provision of 11,610 laser land leveling units to farmers and service providers on a cost sharing basis: 50% by farmer / service provider and 50% by the project.</p>	<p>a) 11,610 laser units provided to farmers / service providers.</p> <p>b) Farmers trained in using the units.</p>	<p>a) 11,610 farmers / service providers received PLL units.</p> <p>b) Farmers / service providers received training in using the units.</p>	<p>a) Land levelled on Farmers' / service providers' farms.</p> <p>b) Land levelled on fellow farmers on rent.</p> <p>c) Total 3.483 million acres levelled by 11,610 units.</p>	<p>a) Water application efficiency increased at field level.</p> <p>b) Even germination of seed.</p> <p>c) Field application losses reduced by 10 percentage points.</p> <p>d) Water productivity increased by 24%</p>	<p>e) Increased area under irrigated crops.</p> <p>f) Enhanced crop yields</p> <p>g) Increased farm income</p>	<p>a) The land leveling is expected to save irrigation water and result in better and even germination of seeds which can enhance crop yields. The crop yields thus affected will be reflected in agriculture sample surveys.</p> <p>b) 2-4% of sample units will be visited by ME&IE Consultants</p>

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

ANNEX-B: DISTRICT-WISE BASELINE SURVEY SAMPLE DISTRIBUTION

Zone	District	WC	WST	PLL	Overall
Punjab	Attock	0	6	0	6
Punjab	Bahawalnagar	22	3	15	40
Punjab	Bahawalpur	9	1	12	22
Punjab	Bhakkar	11	5	10	26
Punjab	Chakwal	0	7	0	7
Punjab	Chiniot	3	1	15	19
Punjab	Dera Ghazi Khan	9	3	8	20
Punjab	Faisalabad	9	2	14	25
Punjab	Gujranwala	7	1	12	20
Punjab	Gujrat	6	2	6	14
Punjab	Hafizabad	10	3	10	23
Punjab	Jhang	5	2	15	22
Punjab	Jhelum	0	2	0	2
Punjab	Kasur	6	2	12	20
Punjab	Khanewal	7	2	9	18
Punjab	Khushab	8	2	8	18
Punjab	Lahore	2	1	6	9
Punjab	Layyah	8	1	16	25
Punjab	Lodhran	15	1	8	24
Punjab	Mandi Bahauddin	4	2	8	14
Punjab	Mianwali	4	1	7	12
Punjab	Multan	9	5	8	22
Punjab	Muzaffargarh	6	2	12	20
Punjab	Nankana Sahib	3	2	7	12
Punjab	Narowal	1	0	7	8
Punjab	Okara	15	1	7	23
Punjab	Pakpattan	6	1	11	18
Punjab	Rahim Yar Khan	18	4	14	36
Punjab	Rajanpur	6	1	6	13
Punjab	Rawalpindi	0	4	0	4
Punjab	Sahiwal	8	1	8	17
Punjab	Sargodha	8	2	6	16
Punjab	Sheikhupura	8	2	7	17
Punjab	Sialkot	5	1	5	11
Punjab	Toba Tek Singh	6	3	9	18
Punjab	Vehari	6	1	8	15
Punjab Total		250	80	306	636
KP	Abbottabad	2	1	0	3
KP	Bannu	5	1	0	6
KP	Battagram	3	1	0	4
KP	Buner	6	2	0	8
KP	Charsadda	7	1	0	8
KP	Chitral	6	1	0	7
KP	Dera Ismail Khan	38	10	5	53
KP	Hangu	3	0	0	3
KP	Haripur	9	5	0	14
KP	Karak	4	4	0	8
KP	Khyber	2	2	0	4
KP	Kohat	5	1	0	6
KP	Lakki Marwat	6	2	0	8

Zone	District	WC	WST	PLL	Overall
KP	Lower Dir	7	1	0	8
KP	Lower Kohistan	1	0	0	1
KP	Lower Mohmand	2	3	0	5
KP	Malakand	6	2	0	8
KP	Mansehra	15	4	0	19
KP	Mardan	7	3	0	10
KP	Nowshera	20	8	0	28
KP	Peshawar	13	7	0	20
KP	Shangla	3	2	0	5
KP	Swabi	6	1	0	7
KP	Swat	14	8	0	22
KP	Tank	4	2	0	6
KP	Torghar	2	0	0	2
KP	Upper Dir	6	3	0	9
KP	Upper Kohistan	1	1	0	2
KP	Upper Mohmand	2	3	0	5
KP Total		205	79	5	289
Balochistan	Awaran	8	4	0	12
Balochistan	Barkhan	3	3	0	6
Balochistan	Chaghi	4	3	0	7
Balochistan	Dera Bugti	5	2	0	7
Balochistan	Duki	2	2	0	4
Balochistan	Gwadar	2	1	0	3
Balochistan	Harnai	2	1	0	3
Balochistan	Jafarabad	0	0	4	4
Balochistan	Jaffarabad	7	1	0	8
Balochistan	Jhal Magsi	2	4	0	6
Balochistan	Kachi	5	10	0	15
Balochistan	Kalat	13	9	0	22
Balochistan	Kech	6	5	0	11
Balochistan	Kharan	4	2	0	6
Balochistan	Khuzdar	8	7	0	15
Balochistan	Killa Abdullah	5	3	0	8
Balochistan	Killa Saifullah	12	6	0	18
Balochistan	Kohlu	3	2	0	5
Balochistan	Lasbela	10	8	0	18
Balochistan	Loralai	17	7	0	24
Balochistan	Mastung	9	8	0	17
Balochistan	Musakhail	11	1	0	12
Balochistan	Musakhel	0	1	0	1
Balochistan	Nasirabad	9	6	0	15
Balochistan	Nushki	6	3	0	9
Balochistan	Panjgur	8	8	0	16
Balochistan	Pishin	10	9	0	19
Balochistan	Quetta	4	15	0	19
Balochistan	Sherani	4	2	0	6
Balochistan	Sibi	3	3	0	6
Balochistan	Sohbatpur	10	1	3	14
Balochistan	Surab	2	2	0	4
Balochistan	Washuk	1	1	0	2
Balochistan	Zhob	4	4	0	8
Balochistan	Ziarat	4	4	0	8

Zone	District	WC	WST	PLL	Overall
Balochistan Total		203	148	7	358
GB	Astore	2	1	0	3
GB	Diamer	6	2	0	8
GB	Ghanche	6	0	0	6
GB	Ghizer	4	2	0	6
GB	Gilgit	5	3	0	8
GB	Hunza	2	1	0	3
GB	Kharmang	2	1	0	3
GB	Nagar	2	1	0	3
GB	Shigar	4	2	0	6
GB	Skardu	7	2	0	9
GB Total		40	15	0	55
AJK	Bagh	2	3	0	5
AJK	Bhimber	9	2	0	11
AJK	Haveli	1	2	0	3
AJK	Jhelum	3	4	0	7
AJK	Kotli	2	2	0	4
AJK	Mirpur	8	1	0	9
AJK	Muzaffarabad	7	7	0	14
AJK	Neelum	4	0	0	4
AJK	Poonch	2	3	0	5
AJK	Sudhnoti	1	1	0	2
AJK Total		39	25	0	64
ICT	ICT	7	0	0	7
ICT Total		7	0	0	7
Overall		744	347	318	1322

ANNEX-C: WATERCOURSES ZONE-WISE IMPACT FIELD SURVEY SCHEDULE

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Punjab Zone							
Impact	25/04/2022	2	WC	11062232026	Punjab	Hafizabad	28495/L
Impact	26/04/2022	3	WC	11062112003	Punjab	Hafizabad	8210/L
Impact	26/04/2022	2	WC	11062132003	Punjab	Hafizabad	6990/R
Impact	26/04/2022	3	WC	11062132017	Punjab	Hafizabad	655/L
Impact	19/07/2022	1	WC	11032232016	Punjab	Okara	10483/L
Impact	20/07/2022	1	WC	11032212020	Punjab	Okara	20100/L
Impact	20/07/2022	1	WC	11032232005	Punjab	Okara	67700/L
Impact	20/07/2022	3	WC	11093532013	Punjab	Muzaffargarh	26590/L
Impact	21/07/2022	1	WC	11032232045	Punjab	Okara	18000/L
Impact	21/07/2022	3	WC	11093512013	Punjab	Muzaffargarh	26338/R
Impact	21/07/2022	3	WC	11093532049	Punjab	Muzaffargarh	17600/L
Impact	22/07/2022	3	WC	11093532012	Punjab	Muzaffargarh	94934/L
Impact	22/07/2022	3	WC	11093532021	Punjab	Muzaffargarh	211073/R
Impact	23/07/2022	3	WC	11093532022	Punjab	Muzaffargarh	46922/L
Impact	25/07/2022	1	WC	11012112001	Punjab	Kasur	3854/L
Impact	25/07/2022	1	WC	11012232008	Punjab	Kasur	11430/R
Impact	25/07/2022	2	WC	11051532010	Punjab	Gujranwala	58622/TL
Impact	26/07/2022	2	WC	11051532006	Punjab	Gujranwala	12445/R
Impact	26/07/2022	2	WC	11051532026	Punjab	Gujranwala	18715/L
Impact	28/07/2022	2	WC	11051232001	Punjab	Gujranwala	21600/R
Impact	28/07/2022	2	WC	11051412001	Punjab	Gujranwala	73300/R
Impact	28/07/2022	2	WC	11051432001	Punjab	Gujranwala	125800/R
Impact	03/08/2022	2	WC	11051432013	Punjab	Gujranwala	63100/L
Impact	16/08/2022	1	WC	11031132009	Punjab	Sahiwal	87112/L
Impact	16/08/2022	1	WC	11031132010	Punjab	Sahiwal	28240/R
Impact	18/08/2022	1	WC	11031132008	Punjab	Sahiwal	6300/L
Impact	18/08/2022	1	WC	11031232064	Punjab	Sahiwal	32150/L
Impact	10/12/2022	2	WC	11062232019	Punjab	Hafizabad	41350/TL
Impact	10/12/2022	2	WC	11063332004	Punjab	Mandi Bahauddin	7000/R
Impact	11/12/2022	2	WC	11062132025	Punjab	Hafizabad	22447/L
Impact	11/12/2022	2	WC	11062232010	Punjab	Hafizabad	15404/R

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	16/12/2022	2	WC	11062232024	Punjab	Hafizabad	4256/R
Impact	21/12/2022	2	WC	11091432008	Punjab	Dera Ghazi Khan	11470/L
Impact	22/12/2022	2	WC	11091412002	Punjab	Dera Ghazi Khan	19288/L
Impact	23/12/2022	2	WC	11091132008	Punjab	Dera Ghazi Khan	59100/TR
Impact	16/01/2023	3	WC	11042132003	Punjab	Bhakkar	26750/L
Impact	16/01/2023	3	WC	11042132043	Punjab	Bhakkar	74750/R
Impact	17/01/2023	3	WC	11042312003	Punjab	Bhakkar	34000/TL
Impact	18/01/2023	2	WC	11062132036	Punjab	Hafizabad	6730/L
Impact	25/04/2023	2	WC	11062212003	Punjab	Hafizabad	7224/R
Impact	06/06/2023	1	WC	11032332012	Punjab	Okara	16125/R
Impact	06/06/2023	2	WC	11061132004	Punjab	Gujrat	9136/L
Impact	06/06/2023	3	WC	11073132001	Punjab	Lodhran	33855/R
Impact	07/06/2023	1	WC	11032212001	Punjab	Okara	48010/TL
Impact	07/06/2023	2	WC	11061112002	Punjab	Gujrat	30000/L
Impact	07/06/2023	3	WC	11073132002	Punjab	Lodhran	15750/L
Impact	08/06/2023	1	WC	11032332008	Punjab	Okara	12535/TR
Impact	08/06/2023	2	WC	11061112001	Punjab	Gujrat	7132/R
Impact	08/06/2023	3	WC	11073132024	Punjab	Lodhran	63534/L
Impact	09/06/2023	1	WC	11032232007	Punjab	Okara	81400/R
Impact	09/06/2023	2	WC	11061132003	Punjab	Gujrat	12884/R
Impact	09/06/2023	3	WC	11073332002	Punjab	Lodhran	27405/L
Impact	10/06/2023	1	WC	11032332009	Punjab	Okara	7550/L
Impact	10/06/2023	2	WC	11061132002	Punjab	Gujrat	46895/L
Impact	10/06/2023	3	WC	11073312002	Punjab	Lodhran	18100/L
Impact	12/06/2023	1	WC	11032232040	Punjab	Okara	23980/R
Impact	12/06/2023	2	WC	11061132005	Punjab	Gujrat	30000/L
Impact	12/06/2023	3	WC	11073332004	Punjab	Lodhran	126231/R
Impact	13/06/2023	1	WC	11032212004	Punjab	Okara	14100/R
Impact	13/06/2023	2	WC	11053332003	Punjab	Sialkot	29800/L
Impact	13/06/2023	3	WC	11073332005	Punjab	Lodhran	49000/R
Impact	14/06/2023	1	WC	11032232006	Punjab	Okara	4050/L
Impact	14/06/2023	2	WC	11053232001	Punjab	Sialkot	2000/R
Impact	14/06/2023	3	WC	11073332006	Punjab	Lodhran	6900/R
Impact	15/06/2023	1	WC	11032132001	Punjab	Okara	87000/TL

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	15/06/2023	2	WC	11053332002	Punjab	Sialkot	131000/R
Impact	16/06/2023	1	WC	11032232004	Punjab	Okara	22627/R
Impact	16/06/2023	2	WC	11053232002	Punjab	Sialkot	1980/L
Impact	16/06/2023	3	WC	11073312006	Punjab	Lodhran	12702/L
Impact	16/06/2023	3	WC	11073332003	Punjab	Lodhran	2925/R
Impact	17/06/2023	1	WC	11032212002	Punjab	Okara	90600/TR
Impact	17/06/2023	2	WC	11053232003	Punjab	Sialkot	24200/TL
Impact	17/06/2023	3	WC	11073312005	Punjab	Lodhran	52200/TF
Impact	19/06/2023	1	WC	11011232007	Punjab	Lahore	13600/L
Impact	19/06/2023	3	WC	11073312001	Punjab	Lodhran	43818/L
Impact	20/06/2023	3	WC	11073312015	Punjab	Lodhran	61450/TL
Impact	20/06/2023	3	WC	11073332001	Punjab	Lodhran	70978/TL
Impact	21/06/2023	3	WC	11073312004	Punjab	Lodhran	102970/R
Impact	21/06/2023	3	WC	11081132021	Punjab	Bahawalpur	4320/L
Impact	22/06/2023	1	WC	11031232032	Punjab	Sahiwal	97580/L
Impact	22/06/2023	1	WC	11031232066	Punjab	Sahiwal	30470/R
Impact	22/06/2023	3	WC	11094132030	Punjab	Rajanpur	4000/L
Impact	23/06/2023	1	WC	11074132008	Punjab	Vehari	71750/L
Impact	23/06/2023	1	WC	11074212002	Punjab	Vehari	289500/R
Impact	24/06/2023	1	WC	11074232003	Punjab	Vehari	10780/R
Impact	24/06/2023	1	WC	11074232005	Punjab	Vehari	2000/R
Impact	26/06/2023	1	WC	11074132009	Punjab	Vehari	13020/R
Impact	26/06/2023	1	WC	11074432010	Punjab	Vehari	25178/L
Impact	04/07/2023	1	WC	11024332001	Punjab	Toba Tek Singh	443650/L
Impact	04/07/2023	3	WC	11072232014	Punjab	Khanewal	87400/R
Impact	05/07/2023	1	WC	11024332005	Punjab	Toba Tek Singh	2500/L
Impact	05/07/2023	2	WC	11041532008	Punjab	Sargodha	49050/R
Impact	05/07/2023	3	WC	11072232015	Punjab	Khanewal	11415/L
Impact	06/07/2023	1	WC	11024132013	Punjab	Toba Tek Singh	58460/L
Impact	06/07/2023	2	WC	11041832002	Punjab	Sargodha	6473/R
Impact	06/07/2023	3	WC	11072232001	Punjab	Khanewal	264704/L
Impact	07/07/2023	1	WC	11024132007	Punjab	Toba Tek Singh	30896/R
Impact	07/07/2023	2	WC	11041632008	Punjab	Sargodha	28900/R
Impact	07/07/2023	3	WC	11072232002	Punjab	Khanewal	24830/R

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	08/07/2023	1	WC	11024232007	Punjab	Toba Tek Singh	445/L
Impact	08/07/2023	2	WC	11041132021	Punjab	Sargodha	10990/L
Impact	08/07/2023	3	WC	11072232003	Punjab	Khanewal	47460/R
Impact	10/07/2023	1	WC	11023332018	Punjab	Jhang	35478/R
Impact	10/07/2023	2	WC	11041132032	Punjab	Sargodha	56900/L
Impact	10/07/2023	2	WC	11063232001	Punjab	Mandi Bahauddin	13726/L
Impact	10/07/2023	3	WC	11072412003	Punjab	Khanewal	1500/R
Impact	11/07/2023	1	WC	11023332015	Punjab	Jhang	43486/L
Impact	11/07/2023	2	WC	11063312002	Punjab	Mandi Bahauddin	23014/L
Impact	11/07/2023	3	WC	11072432019	Punjab	Khanewal	4050/R
Impact	12/07/2023	1	WC	11023312002	Punjab	Jhang	17720/R
Impact	12/07/2023	2	WC	11063212003	Punjab	Mandi Bahauddin	104720/R
Impact	12/07/2023	3	WC	11071432034	Punjab	Multan	10200/L
Impact	13/07/2023	1	WC	11021332010	Punjab	Faisalabad	18985/L
Impact	13/07/2023	1	WC	11023312005	Punjab	Jhang	88668/L
Impact	13/07/2023	2	WC	11052112001	Punjab	Narowal	18500/R
Impact	13/07/2023	3	WC	11071432018	Punjab	Multan	106200/TR
Impact	14/07/2023	1	WC	11021332001	Punjab	Faisalabad	30694/R
Impact	14/07/2023	2	WC	11033132017	Punjab	Pakpattan	20440/R
Impact	14/07/2023	3	WC	11071232013	Punjab	Multan	41440/L
Impact	15/07/2023	1	WC	11021432017	Punjab	Faisalabad	47007/L
Impact	15/07/2023	2	WC	11033112003	Punjab	Pakpattan	24763/L
Impact	15/07/2023	3	WC	11071232011	Punjab	Multan	27100/L
Impact	17/07/2023	1	WC	11022132002	Punjab	Chiniot	17006/R
Impact	17/07/2023	2	WC	11033112002	Punjab	Pakpattan	12996/R
Impact	17/07/2023	3	WC	11071432024	Punjab	Multan	10516/L
Impact	18/07/2023	1	WC	11014332011	Punjab	Sheikhupura	4735/R
Impact	18/07/2023	2	WC	11033232021	Punjab	Pakpattan	4393/L
Impact	18/07/2023	3	WC	11071232004	Punjab	Multan	43000/R
Impact	19/07/2023	1	WC	11014332014	Punjab	Sheikhupura	25400/R
Impact	19/07/2023	2	WC	11033132015	Punjab	Pakpattan	33500/R
Impact	19/07/2023	3	WC	11071112002	Punjab	Multan	25957/L
Impact	20/07/2023	1	WC	11014432004	Punjab	Sheikhupura	7600/TL
Impact	20/07/2023	2	WC	11033132013	Punjab	Pakpattan	37030/L

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	20/07/2023	3	WC	11071432022	Punjab	Multan	16410/R
Impact	21/07/2023	1	WC	11014432007	Punjab	Sheikhupura	67919/TF
Impact	21/07/2023	3	WC	11071132012	Punjab	Multan	12936/L
Impact	22/07/2023	1	WC	11014432017	Punjab	Sheikhupura	58292/R
Impact	24/07/2023	1	WC	11014532006	Punjab	Sheikhupura	935/R
Impact	25/07/2023	1	WC	11014332007	Punjab	Sheikhupura	20460/L
Impact	26/07/2023	1	WC	11014332006	Punjab	Sheikhupura	16800/R
Impact	02/08/2023	1	WC	11013132003	Punjab	Nankana Sahib	33400/TF
Impact	02/08/2023	3	WC	11082132001	Punjab	Bahawalnagar	55980/L
Impact	02/08/2023	2	WC	11083232003	Punjab	Rahim Yar Khan	92500/R
Impact	03/08/2023	1	WC	11013132005	Punjab	Nankana Sahib	24642/TL
Impact	03/08/2023	3	WC	11082112006	Punjab	Bahawalnagar	13880/R
Impact	03/08/2023	2	WC	11083232031	Punjab	Rahim Yar Khan	1560/L
Impact	04/08/2023	3	WC	11082532021	Punjab	Bahawalnagar	56830/L
Impact	04/08/2023	2	WC	11083232001	Punjab	Rahim Yar Khan	118915/TR
Impact	04/08/2023	2	WC	11083332031	Punjab	Rahim Yar Khan	20585/R
Impact	05/08/2023	1	WC	11012432002	Punjab	Kasur	45316/L
Impact	05/08/2023	3	WC	11082532002	Punjab	Bahawalnagar	173540/L
Impact	05/08/2023	2	WC	11083232002	Punjab	Rahim Yar Khan	95500/R
Impact	05/08/2023	2	WC	11083432003	Punjab	Rahim Yar Khan	58940/R
Impact	06/08/2023	2	WC	11083332035	Punjab	Rahim Yar Khan	93445/L
Impact	06/08/2023	2	WC	11083412005	Punjab	Rahim Yar Khan	9636/TR
Impact	08/08/2023	3	WC	11082132023	Punjab	Bahawalnagar	77560/L
Impact	08/08/2023	3	WC	11082612006	Punjab	Bahawalnagar	26066/L
Impact	08/08/2023	2	WC	11083312006	Punjab	Rahim Yar Khan	17635/R
Impact	08/08/2023	2	WC	11083412002	Punjab	Rahim Yar Khan	33100/R
Impact	09/08/2023	3	WC	11082132017	Punjab	Bahawalnagar	17132/R
Impact	09/08/2023	3	WC	11082532053	Punjab	Bahawalnagar	57890/L
Impact	09/08/2023	2	WC	11083412013	Punjab	Rahim Yar Khan	20245/R
Impact	10/08/2023	1	WC	11013132006	Punjab	Nankana Sahib	24642/TF
Impact	10/08/2023	3	WC	11082612007	Punjab	Bahawalnagar	10666/R
Impact	10/08/2023	3	WC	11082632004	Punjab	Bahawalnagar	22600/L
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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							
Impact	16/07/2022	2	WC	12021412080	KP	Dera Ismail Khan	Sona Khan
Impact	31/08/2022	3	WC	12033113007	KP	Haripur	Nazakat Khan
Impact	31/08/2022	3	WC	12033113013	KP	Haripur	Shakir Ali
Impact	31/08/2022	1	WC	12061112019	KP	Mardan	Ali Sarwar
Impact	01/09/2022	3	WC	12031116011	KP	Abbottabad	Bagotar Doga
Impact	01/09/2022	2	WC	12041113054	KP	Kohat	Asim Altaf
Impact	02/09/2022	2	WC	12011313019	KP	Bannu	Habib Ullah
Impact	02/09/2022	3	WC	12032116003	KP	Battagram	Badiuzzaman Khan
Impact	02/09/2022	3	WC	12036113010	KP	Mansehra	Ashique Hussain
Impact	03/09/2022	2	WC	12012113042	KP	Lakki Marwat	Gulo Khan
Impact	03/09/2022	3	WC	12037215005	KP	Torghar	Jaaga Bala
Impact	05/09/2022	2	WC	12021412079	KP	Dera Ismail Khan	Naimat Ullah
Impact	05/09/2022	1	WC	12062113002	KP	Swabi	Baz Muhammad
Impact	05/09/2022	1	WC	12062132002	KP	Swabi	026-L
Impact	06/09/2022	1	WC	12071118001	KP	Peshawar	Shad Muhammad
Impact	07/09/2022	1	WC	12072332008	KP	Charsadda	3077-R
Impact	07/09/2022	1	WC	12073113016	KP	Nowshera	Muhammad Tahir Shah
Impact	06/05/2023	1	WC	12051212017	KP	Malakand	Mogha 3593/R

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	06/05/2023	1	WC	12051212026	KP	Malakand	Mogha 1148/R
Impact	06/05/2023	1	WC	12051212029	KP	Malakand	Mogha 25461/ R
Impact	05/06/2023	2	WC	12021412063	KP	Dera Ismail Khan	2900-R
Impact	05/06/2023	2	WC	12021412082	KP	Dera Ismail Khan	Allah Dad Tw
Impact	06/06/2023	2	WC	12021412085	KP	Dera Ismail Khan	Malik Khurshid Tw
Impact	06/06/2023	2	WC	12021412086	KP	Dera Ismail Khan	Malik Habibullah Tw
Impact	06/06/2023	1	WC	12051116001	KP	Malakand	Asmatullah
Impact	06/06/2023	1	WC	12051212006	KP	Malakand	32650-L
Impact	06/06/2023	1	WC	12051212012	KP	Malakand	10181-L
Impact	07/06/2023	2	WC	12021412087	KP	Dera Ismail Khan	Ghulam Sadiq
Impact	07/06/2023	2	WC	12021412089	KP	Dera Ismail Khan	Muhammad Akram Tw Wc
Impact	07/06/2023	1	WC	12056216021	KP	Swat	Akbar shah
Impact	08/06/2023	2	WC	12021412090	KP	Dera Ismail Khan	Ghulam Rabani
Impact	08/06/2023	2	WC	12021412091	KP	Dera Ismail Khan	Nazeer Aehmad
Impact	08/06/2023	2	WC	12021412093	KP	Dera Ismail Khan	Muhammad Sher Tw Wc
Impact	08/06/2023	1	WC	12056416024	KP	Swat	Asad Ali
Impact	09/06/2023	1	WC	12056416019	KP	Swat	Muhammad ishaq
Impact	09/06/2023	1	WC	12056416026	KP	Swat	Qadar Gul
Impact	12/06/2023	2	WC	12021312012	KP	Dera Ismail Khan	Akhtar Ullah
Impact	12/06/2023	2	WC	12021312013	KP	Dera Ismail Khan	Muhammad Ayaz
Impact	12/06/2023	2	WC	12021312014	KP	Dera Ismail Khan	Muhammad Haris
Impact	12/06/2023	3	WC	12031116013	KP	Abbottabad	Abid Gul
Impact	12/06/2023	1	WC	12056516030	KP	Swat	Sadam Hussain
Impact	12/06/2023	1	WC	12056516060	KP	Swat	Abdullah
Impact	12/06/2023	1	WC	12056516071	KP	Swat	Bahader zeb
Impact	13/06/2023	2	WC	12021512026	KP	Dera Ismail Khan	3143-R
Impact	13/06/2023	2	WC	12021512110	KP	Dera Ismail Khan	Sardar Malik Liaqat
Impact	13/06/2023	2	WC	12021512112	KP	Dera Ismail Khan	Muhammad Tw Wc
Impact	13/06/2023	2	WC	12021512117	KP	Dera Ismail Khan	Sona Tw Wc
Impact	13/06/2023	1	WC	12056616010	KP	Swat	Fawad Ullah
Impact	13/06/2023	1	WC	12056616013	KP	Swat	Khurshid Ali
Impact	13/06/2023	1	WC	12056716071	KP	Swat	Wahid zada
Impact	14/06/2023	2	WC	12021512121	KP	Dera Ismail Khan	Muhammad Aftab Tw Wc
Impact	14/06/2023	2	WC	12021512123	KP	Dera Ismail Khan	Zameer Hussain Tw Wc

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	14/06/2023	2	WC	12021512135	KP	Dera Ismail Khan	Umar farooq
Impact	14/06/2023	2	WC	12021512137	KP	Dera Ismail Khan	Qayum nawaz Tw Wc
Impact	14/06/2023	2	WC	12021513005	KP	Dera Ismail Khan	Hayat Ullah
Impact	14/06/2023	3	WC	12036216017	KP	Mansehra	Batangi Timbri pipe WC
Impact	14/06/2023	3	WC	12036216018	KP	Mansehra	Kamad Bela Pipe WC
Impact	14/06/2023	3	WC	12036236001	KP	Mansehra	Perwaiz Khan
Impact	15/06/2023	2	WC	12021112042	KP	Dera Ismail Khan	3500-L
Impact	15/06/2023	2	WC	12021112047	KP	Dera Ismail Khan	3800-L
Impact	15/06/2023	2	WC	12021112079	KP	Dera Ismail Khan	17600-R
Impact	15/06/2023	3	WC	12036216020	KP	Mansehra	Uddi Kassi Pipe WC
Impact	15/06/2023	3	WC	12036216022	KP	Mansehra	Timbri kattha Pipe WC
Impact	15/06/2023	1	WC	12054216001	KP	Lower Dir	171+500-L
Impact	16/06/2023	2	WC	12021112089	KP	Dera Ismail Khan	Ijaz U Din Tw Wc
Impact	16/06/2023	2	WC	12021112095	KP	Dera Ismail Khan	Ghulam Abbas shah
Impact	16/06/2023	3	WC	12036212009	KP	Mansehra	CPEC Bajnah Chowk WC
Impact	16/06/2023	3	WC	12036216015	KP	Mansehra	Naror Trangri Pipe WC
Impact	19/06/2023	2	WC	12021112096	KP	Dera Ismail Khan	Sabir Hussain Tw Wc
Impact	19/06/2023	2	WC	12021112101	KP	Dera Ismail Khan	Shahniwaz Tw Wc
Impact	19/06/2023	2	WC	12021112103	KP	Dera Ismail Khan	Sana Ullah Tw wc
Impact	19/06/2023	3	WC	12036116010	KP	Mansehra	Hashir Pipe WC
Impact	19/06/2023	3	WC	12036212006	KP	Mansehra	51886-R
Impact	19/06/2023	1	WC	12071116001	KP	Peshawar	Abdul Majeed
Impact	19/06/2023	1	WC	12071132004	KP	Peshawar	70000-L-Hazar Khwani
Impact	19/06/2023	1	WC	12071132008	KP	Peshawar	159000-L Wgc
Impact	19/06/2023	1	WC	12071212001	KP	Peshawar	Kashif Twc
Impact	20/06/2023	2	WC	12021112098	KP	Dera Ismail Khan	Ali Muhammad
Impact	20/06/2023	2	WC	12021112099	KP	Dera Ismail Khan	Saif ur rehman
Impact	20/06/2023	3	WC	12036116005	KP	Mansehra	Moeen
Impact	20/06/2023	3	WC	12036316017	KP	Mansehra	Kashtra PWC
Impact	20/06/2023	1	WC	12071116003	KP	Peshawar	Rashid Zaman
Impact	20/06/2023	1	WC	12071116011	KP	Peshawar	Adil zaman
Impact	20/06/2023	1	WC	12071216001	KP	Peshawar	Iqbal Hussain
Impact	21/06/2023	2	WC	12021112088	KP	Dera Ismail Khan	Gul Khan Tw
Impact	21/06/2023	2	WC	12021112090	KP	Dera Ismail Khan	Shah jahan Tw Wc

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	21/06/2023	2	WC	12021113002	KP	Dera Ismail Khan	Abdul Razaq
Impact	21/06/2023	3	WC	12036116016	KP	Mansehra	Batrairh Pipe WC
Impact	21/06/2023	3	WC	12036116020	KP	Mansehra	AKHTAR Zaib Khan Pipe WC
Impact	21/06/2023	1	WC	12071112042	KP	Peshawar	Ikram Ullah
Impact	21/06/2023	1	WC	12071112045	KP	Peshawar	Tahir khan
Impact	21/06/2023	1	WC	12071116012	KP	Peshawar	Zahir ul Amin
Impact	22/06/2023	2	WC	12021112097	KP	Dera Ismail Khan	Ikram ullah
Impact	22/06/2023	2	WC	12021112108	KP	Dera Ismail Khan	Abass Tw Wc
Impact	22/06/2023	3	WC	12036116023	KP	Mansehra	Gulzar Ahmed Khan WC
Impact	23/06/2023	2	WC	12012312002	KP	Lakki Marwat	Vial Shahjee Wala
Impact	23/06/2023	2	WC	12012312004	KP	Lakki Marwat	Vail Nimzar
Impact	23/06/2023	3	WC	12033113027	KP	Haripur	Muhammad Zaman
Impact	23/06/2023	1	WC	12071112047	KP	Peshawar	Wajid khan
Impact	26/06/2023	2	WC	12011112001	KP	Bannu	Faisal Khan-2
Impact	26/06/2023	2	WC	12011112002	KP	Bannu	Faisal Khan-1
Impact	26/06/2023	3	WC	12033313002	KP	Haripur	Ghulam Asghar
Impact	26/06/2023	3	WC	12033316001	KP	Haripur	Shabir Muhammad Abbasi
Impact	26/06/2023	1	WC	12071412001	KP	Peshawar	Amjad Ali
Impact	26/06/2023	1	WC	12073313005	KP	Nowshera	Waseem Muhammad
Impact	27/06/2023	2	WC	12011112003	KP	Bannu	Noor Naib Khan
Impact	27/06/2023	2	WC	12011118002	KP	Bannu	Adhami Degan
Impact	27/06/2023	1	WC	12073312003	KP	Nowshera	3900-R
Impact	27/06/2023	1	WC	12073312004	KP	Nowshera	21000-L
Impact	27/06/2023	1	WC	12073313004	KP	Nowshera	Tayab khan
Impact	04/07/2023	3	WC	12033312002	KP	Haripur	Tahir Mehmood
Impact	04/07/2023	3	WC	12033313001	KP	Haripur	Akhtar Zaman
Impact	04/07/2023	1	WC	12073112009	KP	Nowshera	Sartaj
Impact	04/07/2023	1	WC	12073112016	KP	Nowshera	6600-L
Impact	04/07/2023	1	WC	12073113004	KP	Nowshera	Abdullah Khattak
Impact	04/07/2023	1	WC	12073113004	KP	Nowshera	180300-R
Impact	05/07/2023	3	WC	12033113025	KP	Haripur	Ahsan Raza
Impact	05/07/2023	3	WC	12033233001	KP	Haripur	Muhammad Zareen
Impact	05/07/2023	2	WC	12041113026	KP	Kohat	Abdul Qadir
Impact	05/07/2023	2	WC	12041113060	KP	Kohat	Ahsan Hayat

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	05/07/2023	1	WC	12073112035	KP	Nowshera	Khadim Ali Twwc
Impact	05/07/2023	1	WC	12073113015	KP	Nowshera	Shahin Shah
Impact	05/07/2023	1	WC	12073113021	KP	Nowshera	Shahzad Gul
Impact	06/07/2023	2	WC	12041112001	KP	Kohat	12400-R
Impact	06/07/2023	2	WC	12041113033	KP	Kohat	Hazrat Umar
Impact	06/07/2023	1	WC	12073113022	KP	Nowshera	Faid Gul
Impact	06/07/2023	1	WC	12073113024	KP	Nowshera	Shahid
Impact	07/07/2023	1	WC	12073112029	KP	Nowshera	Kashif Rafique
Impact	07/07/2023	1	WC	120731132003	KP	Nowshera	9284.T.F
Impact	07/07/2023	1	WC	12073232003	KP	Nowshera	Mogha No 19725/L
Impact	10/07/2023	1	WC	12073113018	KP	Nowshera	Muhammad Akbar
Impact	10/07/2023	1	WC	12073212006	KP	Nowshera	Zahir shah
Impact	11/07/2023	1	WC	12073213008	KP	Nowshera	Afsar khan
Impact	12/07/2023	1	WC	12072212001	KP	Charsadda	Khan Bacha
Impact	12/07/2023	1	WC	12072316002	KP	Charsadda	Fazal Subhan 1
Impact	12/07/2023	1	WC	12072316008	KP	Charsadda	Noor Ul Amin
Impact	13/07/2023	1	WC	12072312002	KP	Charsadda	19195-L
Impact	13/07/2023	1	WC	12072312004	KP	Charsadda	11930-T.F
Impact	13/07/2023	1	WC	12072312008	KP	Charsadda	42200-R
Impact	14/07/2023	1	WC	12061112035	KP	Mardan	Fazal Subhan
Impact	14/07/2023	1	WC	12061113004	KP	Mardan	Muhammad Zeb
Impact	17/07/2023	1	WC	120611132002	KP	Mardan	6550-R
Impact	17/07/2023	1	WC	12061313001	KP	Mardan	No. 1134/R
Impact	17/07/2023	1	WC	12061512010	KP	Mardan	1700-L
Impact	18/07/2023	1	WC	12062113007	KP	Swabi	WC NO.12320/R
Impact	18/07/2023	1	WC	12062312003	KP	Swabi	13000-L
Impact	20/07/2023	1	WC	12052216003	KP	Buner	Umer Wahid
Impact	20/07/2023	1	WC	12052216004	KP	Buner	Amir Nawab Khan
Impact	20/07/2023	1	WC	12052216022	KP	Buner	T/W WC wazir ali
Impact	21/07/2023	1	WC	12052416007	KP	Buner	Rahat Shah
Impact	21/07/2023	1	WC	12052616011	KP	Buner	Laiq Zada TWWC
Impact	21/07/2023	1	WC	12052616021	KP	Buner	Qayyum Zada TWWC
BLS & Impact	04/12/2023	1	WC	12042113009	KP	Hangu	Najeeb Ullah
BLS & Impact	04/12/2023	2	WC	12062112006	KP	Swabi	Hammad PWC

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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							
Impact	18/07/2022	2	WC	13072115003	Balochistan	Killa Saifullah	Mr. Muhammad Gulab
Impact	18/07/2022	2	WC	13072615003	Balochistan	Killa Saifullah	Malik Muhammad Youns
Impact	19/07/2022	3	WC	13041319001	Balochistan	Quetta	Abdul Malik
Impact	19/07/2022	2	WC	13041319002	Balochistan	Quetta	Abdul Raziq
Impact	19/07/2022	1	WC	13041319003	Balochistan	Quetta	Zubair Ahmed
Impact	20/07/2022	1	WC	13015111001	Balochistan	Mastung	Haji Mohammed alim
Impact	20/07/2022	2	WC	130151115014	Balochistan	Mastung	Abdul Ghani
Impact	21/07/2022	2	WC	13081113004	Balochistan	Loralai	Abdul Ghafar
Impact	21/07/2022	1	WC	13081113024	Balochistan	Loralai	Abdul Raziq
Impact	23/07/2022	1	WC	13035111002	Balochistan	Sohbatpur	Khalil Ahmad
Impact	23/07/2022	1	WC	13035211012	Balochistan	Sohbatpur	Shahzad Ali
Impact	24/07/2022	1	WC	13031311011	Balochistan	Nasirabad	Muhammad Safar
Impact	24/07/2022	2	WC	13035211010	Balochistan	Sohbatpur	Muhammad Baksh
Impact	22/08/2022	2	WC	13042119001	Balochistan	Killa Abdullah	Abdul Ghanni
Impact	23/08/2022	2	WC	13042119002	Balochistan	Killa Abdullah	Sana Ullah
Impact	10/10/2022	3	WC	13011415001	Balochistan	Kalat	Abdul Hameed

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	10/10/2022	2	WC	13011419001	Balochistan	Kalat	Abdul Qayoum
Impact	10/10/2022	1	WC	13011419002	Balochistan	Kalat	Mir Mohammad
Impact	11/10/2022	2	WC	13042115001	Balochistan	Killa Abdullah	Haji Rehmatullah
Impact	12/10/2022	2	WC	13053115002	Balochistan	Nushki	Shahnawaz Khan
Impact	12/10/2022	3	WC	13053119001	Balochistan	Nushki	Ameer Hamza
Impact	13/10/2022	2	WC	13073115001	Balochistan	Sherani	Mohammad Shah
Impact	13/10/2022	1	WC	13073115004	Balochistan	Sherani	Rahmat Shah
Impact	14/10/2022	3	WC	13061115011	Balochistan	Sibi	Mohammad Saud Bugti
Impact	19/10/2022	2	WC	13071113014	Balochistan	Zhob	Fareed Khan
Impact	19/10/2022	3	WC	13071119001	Balochistan	Zhob	Abdul Wahid
Impact	20/10/2022	3	WC	13065213028	Balochistan	Ziarat	Haji Raz Muhammad
Impact	07/11/2022	2	WC	13043625003	Balochistan	Pishin	Muhammad Anwar
Impact	08/11/2022	2	WC	13043615001	Balochistan	Pishin	Muhammad Munawar
Impact	11/11/2022	2	WC	13031311010	Balochistan	Nasirabad	Muhammad Munawar
Impact	25/11/2022	3	WC	13013215003	Balochistan	Khuzdar	Saeed Ahmed
Impact	25/11/2022	1	WC	13013929003	Balochistan	Khuzdar	Arshad Aziz
Impact	01/12/2022	2	WC	13032211036	Balochistan	Jaffarabad	Khair Muhammad & others
Impact	01/12/2022	2	WC	13032211054	Balochistan	Jaffarabad	Asadullah
Impact	02/12/2022	2	WC	13032211025	Balochistan	Jaffarabad	Muhib Ali Kandani & others
Impact	05/12/2022	1	WC	13033911018	Balochistan	Jhal Magsi	Syed Safder Ali Shah
Impact	07/12/2022	2	WC	13034215005	Balochistan	Kachi	Rabia Maqbool
Impact	07/12/2022	1	WC	13034215014	Balochistan	Kachi	Syed Khurshed Shah
Impact	14/12/2022	1	WC	13013419003	Balochistan	Khuzdar	Noor Din
Impact	19/12/2022	1	WC	13015113033	Balochistan	Mastung	Nasrullah
Impact	19/12/2022	2	WC	13015113037	Balochistan	Mastung	Rehmat Khan
Impact	19/12/2022	3	WC	13015113055	Balochistan	Mastung	Abdul khliq
Impact	20/12/2022	1	WC	13084119001	Balochistan	Musakhail	Abdul Rahim
Impact	21/12/2022	3	WC	13031319001	Balochistan	Nasirabad	Asadullah
Impact	21/12/2022	1	WC	13031919004	Balochistan	Nasirabad	Abdul Quddus
Impact	21/12/2022	2	WC	13031919005	Balochistan	Nasirabad	Abdul Rehman
Impact	22/12/2022	1	WC	13031311007	Balochistan	Nasirabad	Khawand Bakhsh
Impact	22/12/2022	2	WC	13031919035	Balochistan	Nasirabad	Mureed
Impact	22/12/2022	3	WC	13031919038	Balochistan	Nasirabad	Naveed Ahmed
Impact	23/12/2022	2	WC	13031919041	Balochistan	Nasirabad	Sanaullah

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	26/12/2022	1	WC	13035119001	Balochistan	Sohbatpur	Abdul Bari
Impact	26/12/2022	2	WC	13035219001	Balochistan	Sohbatpur	Ghulam Haider
Impact	16/01/2023	1	WC	13035119002	Balochistan	Sohbatpur	Shafiq Ahmed
Impact	17/02/2023	3	WC	13035111008	Balochistan	Sohbatpur	Ms Tayaba
Impact	17/02/2023	2	WC	13035211021	Balochistan	Sohbatpur	Muhammad Ali
Impact	17/02/2023	2	WC	13035211024	Balochistan	Sohbatpur	Raheem Dad
Impact	17/02/2023	1	WC	13035211033	Balochistan	Sohbatpur	Shafi Muhammad
Impact	20/02/2023	3	WC	13072615001	Balochistan	Killa Saifullah	Muhammad Younus
Impact	20/02/2023	2	WC	13072615002	Balochistan	Killa Saifullah	Mulla Sadiq
Impact	22/02/2023	2	WC	13082119002	Balochistan	Loralai	Ahsan Ullah
Impact	14/03/2023	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	Naqeebulla
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
BLS & Impact	02/01/2024	1	WC	13013215002	Balochistan	Khuzdar	Qadir Bakhsh
BLS & Impact	02/01/2024	2	WC	13081113189	Balochistan	Loralai	Asmatullah

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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 Muhallah 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
Azad Jammu & Kashmir (AJK) Unit							
Impact	08/08/2022	1	WC	150111125011	AJK	Muzaffarabad	Mera Dopatta
Impact	08/09/2022	1	WC	150111118006	AJK	Muzaffarabad	Dhani Mai Sahiba
Impact	15/11/2022	1	WC	15033112046	AJK	Mirpur	Lehri-6
Impact	15/11/2022	1	WC	15033112064	AJK	Mirpur	New Sunian
Impact	05/06/2023	1	WC	15031212030	AJK	Bhimber	Nawan Chak
Impact	06/06/2023	1	WC	15031112015	AJK	Bhimber	Dhandar Kalan
Impact	06/06/2023	1	WC	15031312003	AJK	Bhimber	Dara Bandi
Impact	07/06/2023	1	WC	15031212001	AJK	Bhimber	Khokhran Gujran-2
Impact	07/06/2023	1	WC	15031212005	AJK	Bhimber	Khokhran Gujran-1

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	12/06/2023	1	WC	15012125001	AJK	Jhelum	Goharabad
Impact	12/06/2023	1	WC	15012125003	AJK	Jhelum	Kukarwara
Impact	13/06/2023	1	WC	15012318001	AJK	Jhelum	Chatkari
Impact	14/06/2023	1	WC	15031112007	AJK	Bhimber	Machia-2
Impact	14/06/2023	1	WC	15031112023	AJK	Bhimber	Kachi 2
Impact	15/06/2023	1	WC	15031112035	AJK	Bhimber	Sokasan
Impact	15/06/2023	1	WC	15031212006	AJK	Bhimber	Malkay-4
Impact	20/06/2023	1	WC	15032415006	AJK	Kotli	Jandrot Kathar Zaireen
Impact	20/06/2023	1	WC	15032415008	AJK	Kotli	Maira Nakyal
Impact	03/07/2023	1	WC	15033111002	AJK	Mirpur	Daramir Shah Sehnse
Impact	04/07/2023	1	WC	15033112033	AJK	Mirpur	Mohri
Impact	04/07/2023	1	WC	15033112054	AJK	Mirpur	Chapran-2
Impact	05/07/2023	1	WC	15033112014	AJK	Mirpur	Akbarabad
Impact	05/07/2023	1	WC	15033112018	AJK	Mirpur	Dalyala
Impact	06/07/2023	1	WC	15033112068	AJK	Mirpur	Raipur
Impact	10/07/2023	1	WC	15011125002	AJK	Muzaffarabad	Ghorsi Pine
Impact	10/07/2023	1	WC	15011125014	AJK	Muzaffarabad	Central Palhoter
Impact	11/07/2023	1	WC	15011218001	AJK	Muzaffarabad	Doba Upper Phagla
Impact	11/07/2023	1	WC	15011235001	AJK	Muzaffarabad	Palla To Karshan
Impact	12/07/2023	1	WC	15011215005	AJK	Muzaffarabad	Meldi Kasi To Parla
Impact	13/07/2023	1	WC	15013125005	AJK	Neelum	Kanoor To Lawat Khawaja Seri
Impact	14/07/2023	1	WC	15013218002	AJK	Neelum	Shesha Pahar To Kiyani Muhalla
Impact	24/07/2023	1	WC	15024215001	AJK	Sudhnoti	Tarnoti To Dhok
Impact	25/07/2023	1	WC	15023328001	AJK	Poonch	Upper Sawa
Impact	26/07/2023	1	WC	15023116001	AJK	Poonch	Lower Dhothan
Impact	03/08/2023	1	WC	15021115008	AJK	Bagh	Tach Banipassri
Impact	04/08/2023	1	WC	15021215005	AJK	Bagh	Kalsota Nathgran
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 Ziyarat Muhalla Karka
BLS & Impact	29/05/2024	1	WC	15022115004	AJK	Haveli	Pallan Chaudriyan
Islamabad Capital Territory (ICT) Unit							
Impact	16/08/2022	1	WC	16110116002	ICT	ICT	Misbahuddin Chohan
Impact	16/08/2022	1	WC	16110116020	ICT	ICT	Sher Bahadar Zada Khan
Impact	17/08/2022	1	WC	16110116008	ICT	ICT	Mohamad Hakeem Khan

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	18/08/2022	1	WC	16110116019	ICT	ICT	Omer Ali Khan
Impact	19/08/2022	1	WC	16110116012	ICT	ICT	Syed Zubair Hussain Shah
Impact	17/07/2023	1	WC	16110116017	ICT	ICT	Muhammad Amjad Khan
Impact	18/07/2023	1	WC	16110116011	ICT	ICT	Ch.Khanzada Khan

ANNEX-D: WATER STORAGE TANKS ZONE WISE IMPACT FIELD SCHEDULE

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Punjab Zone							
Impact	08/06/2022	1	WST	21102316002	Punjab	Attock	Asad Ali Khan:Muhammad Amir Khan
Impact	08/06/2022	1	WST	21102316007	Punjab	Attock	Zeeshan Ali Khan:Hairat Ali Khan
Impact	09/06/2022	1	WST	21102112014	Punjab	Attock	Nisar Bibi:W/O Muhammad Aslam
Impact	09/06/2022	1	WST	21102116002	Punjab	Attock	Malik Rizwan:Sikander Khan
Impact	14/06/2022	1	WST	21102316003	Punjab	Attock	Saqib Javed:Muhammad Javed Khan
Impact	19/07/2022	1	WST	21103314025	Punjab	Chakwal	Muhammad Khan:Taj Muhammad
Impact	23/07/2022	3	WST	21093513001	Punjab	Muzaffargarh	Muhammad Tanveer Rasheed:Sheikh M. Rashid
Impact	23/07/2022	3	WST	21093513002	Punjab	Muzaffargarh	Waheed Ahmad Bhatti:Ahmad Bakhsh Bhatti
Impact	25/07/2022	1	WST	21103314038	Punjab	Chakwal	Rizwan Haider:Malik Muhammad Afzal
Impact	13/09/2022	2	WST	21051412001	Punjab	Gujranwala	Rana Jaleel:Naiq Muhammad
Impact	14/09/2022	2	WST	21061112001	Punjab	Gujrat	Shamim Haider:Sultan Ali
Impact	15/09/2022	1	WST	21012112001	Punjab	Kasur	M.Asghar Ali
Impact	16/09/2022	1	WST	21012213001	Punjab	Kasur	Arif Masood Butt
Impact	21/12/2022	2	WST	21091214002	Punjab	Dera Ghazi Khan	Muhammad Zareef:Muhammad Ibrahim
Impact	22/12/2022	2	WST	21091212004	Punjab	Dera Ghazi Khan	M. Babar Ashraf:Muhammad Ashraf
Impact	23/12/2022	2	WST	21091214001	Punjab	Dera Ghazi Khan	Muhammad Sharif:Muhammad Ibrahim
Impact	16/01/2023	3	WST	21041412003	Punjab	Bhakkar	Mian Rehmat Ullah:Ghulam Mustafa
Impact	16/01/2023	3	WST	21042312001	Punjab	Bhakkar	Ahmad Nawaz:Jindu
Impact	16/01/2023	2	WST	21043314006	Punjab	Khushab	Syed Jaffar Abbas:Syed Farukh Abbas
Impact	17/01/2023	3	WST	21042112001	Punjab	Bhakkar	Muhammad Shahid:Mushtaq Ahmad
Impact	17/01/2023	3	WST	21042412008	Punjab	Bhakkar	Muhammad Riaz:Muhammad Rafiq
Impact	18/01/2023	3	WST	21042412009	Punjab	Bhakkar	Nazeer Ahmad:Muhammad Sardar
Impact	05/06/2023	2	WST	21062113001	Punjab	Hafizabad	Ghanzfar Ghayas:Muhammad Mohsin
Impact	06/06/2023	2	WST	21062213005	Punjab	Hafizabad	Nusrat Tahira:W/O Fyaz Ahmad
Impact	07/06/2023	2	WST	21062213003	Punjab	Hafizabad	Muhammad Afzal:Bashir Ahmad
Impact	07/06/2023	3	WST	21073112002	Punjab	Lodhran	Muhammad Arif:Khoshi Muhamad
Impact	08/06/2023	1	WST	21032112003	Punjab	Okara	Rao Muhammad Farooq Khan:Abdul Majeed Khan
Impact	22/06/2023	3	WST	21081312004	Punjab	Bahawalpur	Muhammad Parvaiz:Ch. Muhammad Yousuf
Impact	22/06/2023	1	WST	21104212008	Punjab	Jhelum	Muhammad Abbas:Jahan Muhammad
Impact	23/06/2023	1	WST	21031114002	Punjab	Sahiwal	Younis Gill:Khursheed Alam Gill
Impact	04/07/2023	1	WST	21024313002	Punjab	Toba Tek Singh	Ch.Muhammad Ali:Safdar Ali

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	05/07/2023	1	WST	21024113001	Punjab	Toba Tek Singh	Farhan Akbar:Muhammad Akbar
Impact	05/07/2023	2	WST	21041814002	Punjab	Sargodha	Hassan Sultan:Irshad Ahmad
Impact	06/07/2023	2	WST	21041814008	Punjab	Sargodha	Muneer Ahmed:Muhammad Deen
Impact	11/07/2023	1	WST	2102321005	Punjab	Jhang	Tahir Sabtai:Ghulam Jaffer Khan
Impact	11/07/2023	2	WST	21063312001	Punjab	Mandi Bahauddin	Khalid Pervaiz:Rasheed Ahmad
Impact	12/07/2023	2	WST	21063312002	Punjab	Mandi Bahauddin	Zubaida Bibi:Ahmad
Impact	14/07/2023	1	WST	21021412002	Punjab	Faisalabad	Aftab Iftikhar:Iftikhar Ali
Impact	14/07/2023	3	WST	21071114002	Punjab	Khanewal	Muhammad Hamid Nawaz:Muhammad Nawaz Malik
Impact	17/07/2023	3	WST	21071114001	Punjab	Multan	Amir Sohail:Malik Muhammad Aslam
Impact	18/07/2023	1	WST	21033112003	Punjab	Pakpattan	M. Tayyab:Muhammad Anwer
Impact	18/07/2023	3	WST	21071313001	Punjab	Multan	Khawaja Maqbool Mustafa:Khawaja Muhammad Yousaf
Impact	19/07/2023	1	WST	21014112001	Punjab	Sheikhupura	Ehsan Elahi Virk:Arif Hussain
Impact	19/07/2023	3	WST	21071412003	Punjab	Multan	Malik Muhammad Afzal:Malik Mehmood
Impact	20/07/2023	1	WST	21014112002	Punjab	Sheikhupura	Habib-Ur-Rehman Hashmi:Ali Hassan
Impact	20/07/2023	3	WST	21071312003	Punjab	Multan	Muhammad Afzaal:Muhammad Iqbal
Impact	21/07/2023	3	WST	21071312005	Punjab	Multan	Muhammad Irfan:Muhammad Ismail
Impact	21/07/2023	1	WST	21102112009	Punjab	Attock	Mian Muhammad Raza:Main Altaf Hussain
Impact	02/08/2023	3	WST	21082213001	Punjab	Bahawalnagar	Abdul Waheed:M.Sharif
Impact	03/08/2023	3	WST	21082513002	Punjab	Bahawalnagar	M.Rizwan Anjum:Ahsaan Ul Haq
Impact	03/08/2023	2	WST	21083412001	Punjab	Rahim Yar Khan	Abdul Ghaffar Khan Abbasi:Aziz-Ur-Rehman
Impact	04/08/2023	1	WST	21013212001	Punjab	Nankana Sahib	Azra Bibi:W/O Anwar Sajid
Impact	04/08/2023	3	WST	21082513003	Punjab	Bahawalnagar	Saif Ullah.:Rahmar Ali
Impact	04/08/2023	2	WST	21083412002	Punjab	Rahim Yar Khan	Abuzar:Abdul Kareem
Impact	05/08/2023	1	WST	21013113001	Punjab	Nankana Sahib	Khalil-Ur-Rehman:Ali Ahmad
Impact	07/08/2023	2	WST	21092312003	Punjab	Layyah	Muhammad Aslam:Ameer Ud Din
Impact	07/08/2023	1	WST	21101412004	Punjab	Rawalpindi	Raja Zulfiqar Ali:Raja G.Asgar
Impact	07/08/2023	1	WST	21101412007	Punjab	Rawalpindi	Zameer Hussain:Abad Ali
Impact	08/08/2023	1	WST	21101612008	Punjab	Rawalpindi	Muhammad Shamroz:M. Ferooz
Impact	08/08/2023	1	WST	21101614001	Punjab	Rawalpindi	Tariq Mehmood:Fazal Khan
BLS & Impact	04/12/2023	1	WST	21011112001	Punjab	Lahore	Nisar Ahmad Dogar:Mukhtar Ahmad
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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 Gilani
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							
Impact	31/08/2022	3	WST	22033132002	KP	Haripur	Nazakat Khan
Impact	06/09/2022	2	WST	22012132021	KP	Lakki Marwat	Ghulam Muhammad
Impact	06/09/2022	1	WST	22072332003	KP	Charsadda	Noshad
Impact	06/09/2022	1	WST	22073232001	KP	Nowshera	Rahaj Gul
Impact	08/09/2022	3	WST	22033232011	KP	Haripur	Abid Khan
Impact	13/09/2022	2	WST	22022132009	KP	Tank	Mehtab Ahmad
Impact	05/06/2023	2	WST	22021432045	KP	Dera Ismail Khan	Ameer Asfand Yar
Impact	05/06/2023	2	WST	22021432046	KP	Dera Ismail Khan	Abdul Majeed Tw Wst
Impact	06/06/2023	2	WST	22021432001	KP	Dera Ismail Khan	Mumtaz
Impact	06/06/2023	2	WST	22021432049	KP	Dera Ismail Khan	Fatima Begam
Impact	07/06/2023	2	WST	22021432044	KP	Dera Ismail Khan	Saif Ullah Tw Wst
Impact	07/06/2023	2	WST	22021432047	KP	Dera Ismail Khan	Shafqat Ullah Tw Wst
Impact	07/06/2023	1	WST	22051332003	KP	Malakand	Shakeel Ahmed
Impact	07/06/2023	1	WST	22056234017	KP	Swat	Abdur Raziq
Impact	07/06/2023	1	WST	22056244002	KP	Swat	Nasar
Impact	08/06/2023	1	WST	22056234001	KP	Swat	Gul Roze
Impact	08/06/2023	1	WST	22056234022	KP	Swat	Taj Mohammad
Impact	09/06/2023	2	WST	22021132001	KP	Dera Ismail Khan	Abdul Qayum

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	09/06/2023	2	WST	22021332004	KP	Dera Ismail Khan	Umar Ameen Tw Wst
Impact	09/06/2023	2	WST	22021342001	KP	Dera Ismail Khan	Javed Anwar Khan
Impact	12/06/2023	3	WST	22031147001	KP	Abbottabad	Hanif Awan
Impact	13/06/2023	3	WST	22032147001	KP	Battagram	Shamalai
Impact	13/06/2023	1	WST	22055134001	KP	Shangla	Fazal Khuda
Impact	13/06/2023	1	WST	22055134004	KP	Shangla	Intikhab Alam Wst
Impact	15/06/2023	3	WST	22036235006	KP	Mansehra	Arshad Mehmood Wst
Impact	15/06/2023	1	WST	22054132008	KP	Lower Dir	Sajjad Khan
Impact	16/06/2023	1	WST	22057144002	KP	Upper Dir	Tangai Bala
Impact	19/06/2023	3	WST	22036234001	KP	Mansehra	Saqib Sherazi
Impact	20/06/2023	3	WST	22036335002	KP	Mansehra	Kashtra Wst
Impact	20/06/2023	1	WST	22071132028	KP	Peshawar	Aqeel Afzal
Impact	21/06/2023	1	WST	22071132039	KP	Peshawar	Zahir Ul Amin
Impact	22/06/2023	2	WST	22021132018	KP	Dera Ismail Khan	Ikram Ullah Tw Wst
Impact	22/06/2023	3	WST	22036135009	KP	Mansehra	Saleem Khan Thakra Wst
Impact	22/06/2023	1	WST	22071132005	KP	Peshawar	Aziz Khan
Impact	22/06/2023	1	WST	22071132006	KP	Peshawar	Muhammad Uzair
Impact	22/06/2023	1	WST	22071132009	KP	Peshawar	Muhammad Usman
Impact	22/06/2023	1	WST	22071132040	KP	Peshawar	Ibrahim Khan
Impact	23/06/2023	3	WST	22033132012	KP	Haripur	Muhammad Zaman Khan
Impact	23/06/2023	1	WST	22071132041	KP	Peshawar	Afaq Ahmad
Impact	26/06/2023	2	WST	22011132001	KP	Bannu	Ihsanu Llah Khan
Impact	26/06/2023	1	WST	22073332004	KP	Nowshera	Malook Khan
Impact	04/07/2023	2	WST	22043332001	KP	Karak	Mir Wali
Impact	04/07/2023	2	WST	22043332007	KP	Karak	Adnan
Impact	05/07/2023	3	WST	22033132010	KP	Haripur	Ahsan Raza
Impact	06/07/2023	3	WST	22033132006	KP	Haripur	Khani Zaman
Impact	06/07/2023	1	WST	22073132002	KP	Nowshera	Iftikhar
Impact	06/07/2023	1	WST	22073132028	KP	Nowshera	Zia Ullah Wst
Impact	10/07/2023	1	WST	22073232003	KP	Nowshera	Wajahat Khan
Impact	11/07/2023	1	WST	22073132015	KP	Nowshera	Abdullah
Impact	11/07/2023	1	WST	22073232002	KP	Nowshera	Sawabuddin
Impact	11/07/2023	1	WST	22073232017	KP	Nowshera	Irshad Ali
Impact	14/07/2023	1	WST	22061132005	KP	Mardan	Ahmad Ali

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	18/07/2023	1	WST	22062232001	KP	Swabi	Mazhar Ali
Impact	19/07/2023	1	WST	22052232006	KP	Buner	Wst Mursaleen Shah
Impact	19/07/2023	1	WST	22052232007	KP	Buner	Wst Rashid Ahmad
Impact	25/07/2023	1	WST	22101337001	KP	Khyber	Junaid
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
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							
Impact	06/06/2022	3	WST	23041552007	Balochistan	Quetta	Watan Yar
Impact	06/06/2022	1	WST	23041852007	Balochistan	Quetta	Saleh Muhammad
Impact	06/06/2022	2	WST	23041959004	Balochistan	Quetta	Ghulam Mustafa
Impact	18/07/2022	2	WST	23072152021	Balochistan	Killa Saifullah	Mr. Abdul Rasheed
Impact	19/07/2022	2	WST	23041552006	Balochistan	Quetta	Ahmed Yar
Impact	19/07/2022	3	WST	23041752012	Balochistan	Quetta	Abdul Majeed

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	19/07/2022	1	WST	23041752021	Balochistan	Quetta	Waseem Mullah Khan
Impact	20/07/2022	3	WST	23015139018	Balochistan	Mastung	Rehmat Khan
Impact	20/07/2022	2	WST	23015259003	Balochistan	Mastung	Abdul Samad
Impact	20/07/2022	1	WST	23015259017	Balochistan	Mastung	Muhammad Salman
Impact	21/07/2022	2	WST	23081152012	Balochistan	Loralai	Allauddin
Impact	21/07/2022	1	WST	23081152022	Balochistan	Loralai	Mazakar Habib
Impact	25/07/2022	1	WST	23031352003	Balochistan	Nasirabad	Abdul Rehman
Impact	22/08/2022	2	WST	23042439001	Balochistan	Killa Abdullah	Abdul Khaliq
Impact	24/08/2022	3	WST	23011452010	Balochistan	Kalat	Ghulam Mustafa
Impact	10/10/2022	1	WST	23011139006	Balochistan	Kalat	Muhammad Saleem
Impact	10/10/2022	3	WST	23011152008	Balochistan	Kalat	Ghulam Raza
Impact	10/10/2022	2	WST	230111439007	Balochistan	Kalat	Muhammad Yousaf
Impact	11/10/2022	2	WST	23042959002	Balochistan	Killa Abdullah	Abdul Qahar
Impact	12/10/2022	3	WST	23053152016	Balochistan	Nushki	Habib Ur Rehman
Impact	13/10/2022	2	WST	23073939001	Balochistan	Sherani	Malak Mir Adam
Impact	13/10/2022	1	WST	23073939002	Balochistan	Sherani	Rahmat Ullah
Impact	14/10/2022	3	WST	230611139005	Balochistan	Sibi	Muhammad Saud Bughti
Impact	17/10/2022	3	WST	230611139002	Balochistan	Sibi	Haroon Ur Rasheed Luni
Impact	18/10/2022	3	WST	230611139004	Balochistan	Sibi	Mazar Khan
Impact	19/10/2022	3	WST	230711139004	Balochistan	Zhob	Haji Akram
Impact	20/10/2022	3	WST	230651139001	Balochistan	Ziarat	Malik Abdul Ghaffar
Impact	07/11/2022	3	WST	230431152012	Balochistan	Pishin	Ainudeen
Impact	07/11/2022	3	WST	23043959001	Balochistan	Pishin	Haji Abdul Manan
Impact	08/11/2022	3	WST	230431152044	Balochistan	Pishin	Mohammad Yaseen
Impact	08/11/2022	3	WST	230431152051	Balochistan	Pishin	Qari Mohammad Younas
Impact	10/11/2022	1	WST	23031252002	Balochistan	Nasirabad	Javid Ahmed
Impact	10/11/2022	2	WST	23031352001	Balochistan	Nasirabad	Fareed Khan
Impact	11/11/2022	2	WST	23031352002	Balochistan	Nasirabad	Muhammad Din
Impact	25/11/2022	1	WST	23013259001	Balochistan	Khuzdar	Abdul Haq
Impact	25/11/2022	3	WST	23013454014	Balochistan	Khuzdar	Abdul Razzaq
Impact	05/12/2022	1	WST	23033939007	Balochistan	Jhal Magsi	Syed Safdar Ali Shah
Impact	05/12/2022	2	WST	23033959006	Balochistan	Jhal Magsi	Ghulam Hussain
Impact	06/12/2022	1	WST	23033959007	Balochistan	Jhal Magsi	Haji Abdul Rasheed
Impact	06/12/2022	2	WST	23033959010	Balochistan	Jhal Magsi	Jhan Zaib

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	07/12/2022	2	WST	23034239005	Balochistan	Kachi	Muhammad Mushtaq
Impact	07/12/2022	1	WST	23034252021	Balochistan	Kachi	Kareem Baksh
Impact	08/12/2022	2	WST	23034252002	Balochistan	Kachi	Abdul Nabi
Impact	08/12/2022	1	WST	23034252022	Balochistan	Kachi	Khuda Baksh
Impact	09/12/2022	2	WST	23034252029	Balochistan	Kachi	Mir Mohammad Baksh
Impact	09/12/2022	1	WST	23034252043	Balochistan	Kachi	Muneer Ahmed
Impact	12/12/2022	2	WST	23034252032	Balochistan	Kachi	Mohim Khan
Impact	12/12/2022	1	WST	23034252042	Balochistan	Kachi	Mukthyar Ahmeed
Impact	13/12/2022	2	WST	23034252048	Balochistan	Kachi	Rasheed Zaman
Impact	14/12/2022	1	WST	23013939017	Balochistan	Khuzdar	Mujeeb Ur Rehman
Impact	14/12/2022	3	WST	23013954001	Balochistan	Khuzdar	Ali Akber
Impact	15/12/2022	2	WST	23013154001	Balochistan	Khuzdar	Fareed Ahmed
Impact	15/12/2022	1	WST	23013454003	Balochistan	Khuzdar	Habib Ur Rehman
Impact	15/12/2022	3	WST	23013459001	Balochistan	Khuzdar	Gul Mohammad
Impact	20/12/2022	1	WST	23084152005	Balochistan	Musakhel	Dawod Khan
Impact	02/01/2023	1	WST	23043152035	Balochistan	Pishin	Malak Ahmed Khan
Impact	05/01/2023	3	WST	23041652001	Balochistan	Quetta	Muhammad Anwar
Impact	05/01/2023	2	WST	23041752004	Balochistan	Quetta	Haji Amanullah
Impact	05/01/2023	3	WST	23041752007	Balochistan	Quetta	Abdul Hameed
Impact	06/01/2023	1	WST	23041152010	Balochistan	Quetta	Abdul Khaliq
Impact	09/01/2023	1	WST	23041152008	Balochistan	Quetta	Zafar ullah
Impact	09/01/2023	2	WST	23041752019	Balochistan	Quetta	Saifullah
Impact	25/01/2023	1	WST	23031752002	Balochistan	Nasirabad	Sanaullah
Impact	02/02/2023	3	WST	23043152007	Balochistan	Pishin	Abdul Qadeer
Impact	03/02/2023	3	WST	23043852001	Balochistan	Pishin	Ameenullah
Impact	06/02/2023	3	WST	23043152037	Balochistan	Pishin	Malak Habib Ur Rehman
Impact	06/02/2023	2	WST	23043739002	Balochistan	Pishin	Haji Alam Khan
Impact	13/02/2023	1	WST	23034239004	Balochistan	Kachi	Imran Khan
Impact	15/02/2023	3	WST	23015252007	Balochistan	Mastung	Shaib Khan
Impact	15/02/2023	1	WST	23015352001	Balochistan	Mastung	Abdul Baqi
Impact	15/02/2023	2	WST	23015959038	Balochistan	Mastung	Qudrat Ullah
Impact	16/02/2023	2	WST	23015252001	Balochistan	Mastung	Abdul Samad
Impact	16/02/2023	1	WST	23015259013	Balochistan	Mastung	Mohammad Alim
Impact	20/02/2023	2	WST	23072152004	Balochistan	Killa Saifullah	Abdul Wahab

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	20/02/2023	3	WST	23072152052	Balochistan	Killa Saifullah	Shamsu-Ur Rehman
Impact	20/02/2023	1	WST	23072652034	Balochistan	Killa Saifullah	Muhammad Rahim
Impact	22/02/2023	2	WST	23081152006	Balochistan	Loralai	Abdul Jalil
Impact	22/02/2023	3	WST	23081152007	Balochistan	Loralai	Abdul Mateen
Impact	22/02/2023	1	WST	23081152026	Balochistan	Loralai	Noorullah
Impact	23/02/2023	2	WST	23081152004	Balochistan	Loralai	Abdul Hadi
Impact	23/02/2023	3	WST	23081152066	Balochistan	Loralai	A Ghafar
Impact	27/02/2023	1	WST	23031251001	Balochistan	Nasirabad	Allah Dina
Impact	14/03/2023	2	WST	23065152006	Balochistan	Ziarat	Naseebullah
Impact	15/03/2023	2	WST	23065152001	Balochistan	Ziarat	Arifullah
Impact	15/03/2023	3	WST	23065152007	Balochistan	Ziarat	Noor Muhammad
Impact	27/04/2023	3	WST	23041859002	Balochistan	Quetta	Muhammad Haroon
Impact	07/06/2023	1	WST	23041652006	Balochistan	Quetta	Abdul Quddus
Impact	08/06/2023	1	WST	23041552001	Balochistan	Quetta	Faqir Muhammad
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
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
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							
Impact	05/06/2023	1	WST	25031127003	AJK	Bhimber	Machora
Impact	06/06/2023	1	WST	25031127001	AJK	Bhimber	Pithorani-2
Impact	08/06/2023	1	WST	25012116009	AJK	Jhelum	Doodhpura Lower
Impact	08/06/2023	1	WST	25012116013	AJK	Jhelum	Doodhpura
Impact	09/06/2023	1	WST	25012118002	AJK	Jhelum	Kakarwara
Impact	09/06/2023	1	WST	25012126001	AJK	Jhelum	Lower Gujar Bandi
Impact	19/06/2023	1	WST	25032416003	AJK	Kotli	Kugyali Khandar
Impact	19/06/2023	1	WST	25032625002	AJK	Kotli	Tarala 2
Impact	21/06/2023	1	WST	25011116046	AJK	Muzaffarabad	Pajgran
Impact	21/06/2023	1	WST	250111124023	AJK	Muzaffarabad	Baglota Dana
Impact	22/06/2023	1	WST	25011116019	AJK	Muzaffarabad	Potha Kacheli

Survey Type	Survey Date	Team.#	Intervention	Scheme ID	Zone	District	Scheme Name
Impact	22/06/2023	1	WST	25011124034	AJK	Muzaffarabad	Poothi Farooqabad
Impact	23/06/2023	1	WST	25011116055	AJK	Muzaffarabad	Saibthaan
Impact	03/07/2023	1	WST	25033228001	AJK	Mirpur	Darari West
Impact	24/07/2023	1	WST	25024316005	AJK	Sudhnoti	Jhanda Bagla
Impact	25/07/2023	1	WST	25023216002	AJK	Poonch	Kanoli Chatra
Impact	26/07/2023	1	WST	25023327004	AJK	Poonch	Lower Trasel
Impact	03/08/2023	1	WST	25021227008	AJK	Bagh	Kernota
BLS & Impact	27/05/2024	1	WST	25011114004	AJK	Muzaffarabad	Muhammad 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
BLS & Impact	03/06/2024	1	WST	25021227015	AJK	Bagh	Choor Chalari
BLS & Impact	04/06/2024	1	WST	25023227004	AJK	Poonch	Manghar

ANNEX-E: PLL ZONE WISE IMPACT FIELD SCHEDULE

Survey Type	Survey Date	Team.#	Interven-tion	Zone	District	Scheme Name
Impact	01/05/2022	3	PLL	Punjab	Bhakkar	Muhammad Shahid:Mushtaq Ahmad Shaheen
Impact	23/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Muhammad Zahid:Abdul Sattar Hasrat
Impact	24/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Abdul Majeed:Kareem Baksh
Impact	24/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Ghulam Hussain:Abdul Razaq
Impact	24/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Ghulam Hussain:Abdul Razzaq
Impact	24/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Muhammad Aslam:Ibrahim Baksh
Impact	24/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Muhammad idrees:Ghulam Muhi din
Impact	24/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Muzzaffar Qasim:Muhammad Qasim
Impact	25/05/2022	2	PLL	Punjab	Dera Ghazi Khan	Lalan Mai:Raheem Buksh
Impact	28/05/2022	3	PLL	Punjab	Bahawalnagar	Muhammad Aslam:Shah Ali
Impact	30/05/2022	3	PLL	Punjab	Bahawalnagar	Dildar Hussain:Shair Muhammad
Impact	30/05/2022	3	PLL	Punjab	Bahawalnagar	Muhammad Sarwar:Bashir Ahmad
Impact	31/05/2022	3	PLL	Punjab	Bahawalnagar	Ahsan Zahoor:Zahoor Ahmad
Impact	31/05/2022	3	PLL	Punjab	Bahawalnagar	Muhammad sharif:Muhammad Yaqoob
Impact	02/06/2022	3	PLL	Punjab	Bahawalnagar	Muhammad Hussain:Abdul Rehman
Impact	02/06/2022	3	PLL	Punjab	Bahawalnagar	Muhammad Sohna:Ali Muhammad
Impact	02/06/2022	3	PLL	Punjab	Bahawalnagar	Noor Ahmad:Jani
Impact	02/06/2022	3	PLL	Punjab	Bahawalnagar	Saif Ur Rehman:Zahoor Ahmad
Impact	04/06/2022	3	PLL	Punjab	Bahawalnagar	Abdul Ghafoor:Khan Muhammad
Impact	04/06/2022	3	PLL	Punjab	Bahawalnagar	Sultan Mehmood:Ghulam Muhammad
Impact	16/06/2022	3	PLL	Punjab	Bhakkar	Ameer iqbal Asif:Naseer Ahmad
Impact	17/06/2022	3	PLL	Punjab	Bhakkar	Hassan Abbas:Akhtar Hussain
Impact	18/06/2022	3	PLL	Punjab	Bhakkar	Muhammad Asad Khan:Muhammad Ismail
Impact	18/06/2022	3	PLL	Punjab	Bhakkar	Muhammad Younus:Muhammad Yousaf
Impact	04/07/2022	2	PLL	Punjab	Rahim Yar Khan	Muhammad Aslam Sohail:Ghulam Mustafa Sohail

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	19/01/2023	2	PLL	Punjab	Nankana Sahib	Abdul Sattar:Sardar Muhammad
Impact	19/01/2023	2	PLL	Punjab	Nankana Sahib	Aitazaz Hussain Bhatti:Nazir Ahmad
Impact	19/01/2023	2	PLL	Punjab	Nankana Sahib	M.imran:M.Sharif
Impact	19/01/2023	2	PLL	Punjab	Nankana Sahib	Muhammad Asim:Muhammad Saleem
Impact	19/01/2023	2	PLL	Punjab	Nankana Sahib	Zafar Iqbal:Nazeer Ahmad
Impact	20/01/2023	1	PLL	Punjab	Faisalabad	Arif Hussain Gill:Faheer Hussain Gill
Impact	20/01/2023	1	PLL	Punjab	Faisalabad	Jamat Ali:Nawab Din
Impact	20/01/2023	1	PLL	Punjab	Faisalabad	Mahe wal:Noor Muhammad
Impact	20/01/2023	1	PLL	Punjab	Faisalabad	Muhammad Khan:Muhammad Akram
Impact	20/01/2023	2	PLL	Punjab	Sheikhupura	Asad ullah:Denar Ahmad
Impact	20/01/2023	2	PLL	Punjab	Sheikhupura	Ghulam Muhi-ud-DIN:Hassan Din
Impact	20/01/2023	2	PLL	Punjab	Sheikhupura	M.Akhtar:Niyamat Ali
Impact	20/01/2023	2	PLL	Punjab	Sheikhupura	Mubarak Ali:Ghulam nabi
Impact	20/01/2023	2	PLL	Punjab	Sheikhupura	Muhammad Akram:Khushi Muhammad
Impact	20/01/2023	2	PLL	Punjab	Sheikhupura	Sajjad Ahmad:Nazir Ahmad
Impact	20/01/2023	2	PLL	Punjab	Sheikhupura	Shafqat Ali:M Shafee
Impact	20/01/2023	3	PLL	Punjab	Sialkot	Amjid Mehmood:Muhammad Sharif
Impact	20/01/2023	3	PLL	Punjab	Sialkot	Muhammad Naveed:Muhammad Mushtaq
Impact	20/01/2023	3	PLL	Punjab	Sialkot	Muhammad Zakaullah:Sana Ullah
Impact	20/01/2023	3	PLL	Punjab	Sialkot	Munir Ahmad:Barkat Ali
Impact	20/01/2023	3	PLL	Punjab	Sialkot	Wahid Ali:Muhammad Ismail
Impact	21/01/2023	1	PLL	Punjab	Faisalabad	Abdul Rauf:Fatah Muhammad
Impact	21/01/2023	1	PLL	Punjab	Faisalabad	Allah Ditta:Akbar Ali
Impact	21/01/2023	1	PLL	Punjab	Faisalabad	Arbab Saif Ullah:Saif Ullah
Impact	21/01/2023	1	PLL	Punjab	Faisalabad	Bashir Ahmed:Sadar Din
Impact	21/01/2023	1	PLL	Punjab	Faisalabad	Muhammad Anwar:Sardar Muhammad
Impact	21/01/2023	1	PLL	Punjab	Faisalabad	Muhammad Zubair:Muhammad Ali
Impact	21/01/2023	1	PLL	Punjab	Faisalabad	Touqeer Abbas:Abbas Ali
Impact	21/01/2023	3	PLL	Punjab	Gujranwala	Akhtar Hussain:Fateh Muhammad

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	21/01/2023	3	PLL	Punjab	Gujranwala	Fayaz Ahmad:Muhammad Khan
Impact	21/01/2023	3	PLL	Punjab	Gujranwala	Muhammad Asif:Muhammad Khan
Impact	21/01/2023	3	PLL	Punjab	Gujranwala	Muhammad Farooq:Muhammad Hussain
Impact	21/01/2023	3	PLL	Punjab	Gujranwala	Nadeem Raza:Muhammad Khan
Impact	21/01/2023	3	PLL	Punjab	Gujranwala	Rafaqat Ali:Saif Ali
Impact	21/01/2023	3	PLL	Punjab	Gujranwala	Tariq Hussain:talib Hussain
Impact	21/01/2023	2	PLL	Punjab	Kasur	Abid Hussain:Fareed Din
Impact	21/01/2023	2	PLL	Punjab	Kasur	Ali Asgar:Muhammad Din
Impact	21/01/2023	2	PLL	Punjab	Kasur	Bashir Ahmad:M.Shafi
Impact	21/01/2023	2	PLL	Punjab	Kasur	Ch.Muhabbat Ali:Rehmat Ali
Impact	22/01/2023	3	PLL	Punjab	Gujrat	Aftab Ahmad:Muhammad Naeem Ullah
Impact	22/01/2023	3	PLL	Punjab	Gujrat	Faisal Nawaz:Muhammad Nawaz
Impact	22/01/2023	3	PLL	Punjab	Gujrat	Naeem Sohail:Nazeer Ahmad
Impact	22/01/2023	3	PLL	Punjab	Gujrat	Nazar Hussain:Muhammad Din
Impact	22/01/2023	3	PLL	Punjab	Gujrat	Orangzaib:Muhammad Razaq
Impact	22/01/2023	3	PLL	Punjab	Gujrat	Qayyum Sarwar Qamar:Muhammad Sarwar
Impact	23/01/2023	3	PLL	Punjab	Hafizabad	Allah Rakha:Muhammad Iqbal
Impact	23/01/2023	3	PLL	Punjab	Hafizabad	Mumtaz Ahmad:Abdullah
Impact	23/01/2023	3	PLL	Punjab	Hafizabad	Samia Baig:Iftikhar Ahmad (Husband)
Impact	23/01/2023	3	PLL	Punjab	Hafizabad	Shahid Iqbal:Munir Ahmad
Impact	23/01/2023	3	PLL	Punjab	Hafizabad	Usman Afzal Chatta:Muhammad Afzal Chatta
Impact	23/01/2023	1	PLL	Punjab	Jhang	Ajmal Nadeem:Shamir khan
Impact	23/01/2023	1	PLL	Punjab	Jhang	Bilal Hussain:Muhammad Ashraf
Impact	23/01/2023	1	PLL	Punjab	Jhang	Hanif Tahir:Muhammad Ramzan
Impact	23/01/2023	1	PLL	Punjab	Jhang	Shamir Khan:Muhabat Ali
Impact	23/01/2023	1	PLL	Punjab	Jhang	Umar Hayat:YASEEN
Impact	23/01/2023	2	PLL	Punjab	Khanewal	Amjad Hussain:Muhammad waryar
Impact	23/01/2023	2	PLL	Punjab	Khanewal	Asghar Ali:Muhammad Anwar
Impact	23/01/2023	2	PLL	Punjab	Khanewal	M.Abid khan:Khalil Ahmad

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	23/01/2023	2	PLL	Punjab	Khanewal	M.Ibrahim:M.Ismail
Impact	23/01/2023	2	PLL	Punjab	Khanewal	Muhammad Sharif:Muhammad Iqbal
Impact	23/01/2023	2	PLL	Punjab	Khanewal	Syed Asad Ali:Syed Shaheen Haider
Impact	23/01/2023	2	PLL	Punjab	Khanewal	Zia Ullah khan:Haq nawaz khan
Impact	24/01/2023	2	PLL	Punjab	Multan	Ali Ahmad:Bashir Ahmad
Impact	24/01/2023	2	PLL	Punjab	Multan	Ghulam Rasool:Nawab Din
Impact	24/01/2023	2	PLL	Punjab	Multan	Khuda Bukhsh:Muhammad Bukhsh
Impact	24/01/2023	2	PLL	Punjab	Multan	M.Arif:M.Suleman
Impact	24/01/2023	2	PLL	Punjab	Multan	Muhammad Aslam:Allah Dad
Impact	24/01/2023	2	PLL	Punjab	Multan	Muhammad Iqbal:Bashir Ahmad
Impact	24/01/2023	2	PLL	Punjab	Multan	RAIZ HUSSAIN:M.Sharif Bajwa
Impact	24/01/2023	2	PLL	Punjab	Multan	Shoukat Hussain:Ameer Bukhsh
Impact	24/01/2023	3	PLL	Punjab	Sargodha	Ahmad Hussain:Noor Hussain
Impact	24/01/2023	3	PLL	Punjab	Sargodha	Allah Dad:Muhammad Khan
Impact	24/01/2023	3	PLL	Punjab	Sargodha	Muhammad Safdar:Shah Muhammad
Impact	24/01/2023	3	PLL	Punjab	Sargodha	Muhammad Sher:Ahmad Khan
Impact	24/01/2023	3	PLL	Punjab	Sargodha	Nouman Mumtaz:Muhammad Mumtaz
Impact	24/01/2023	3	PLL	Punjab	Sargodha	Saleh Muhammad:Allah Yar
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Akram ul Haq:Muhammad Boota
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Chawa:Ghulam Muhammad
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Ghulam Murtaza:Akbar Ali
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Ijaz Ahmed:Muhammad Sharif
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Muhammad Ali:Abdul Hayee khan
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Muhammad Jameel:Rukan Din
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Umar Hayat:Noor Muhammad
Impact	24/01/2023	1	PLL	Punjab	Toba Tek Singh	Zafar Iqbal:Muhammad Aslam
Impact	25/01/2023	3	PLL	Punjab	Khushab	Ghulam Akbar:Atta Muhammad
Impact	25/01/2023	3	PLL	Punjab	Khushab	Khushi Muhammad:Atta Muhammad
Impact	25/01/2023	3	PLL	Punjab	Khushab	Mansab Dar:Ahmad Khan

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	25/01/2023	3	PLL	Punjab	Khushab	Muhammad Ramzan:Muhammad Khan
Impact	25/01/2023	3	PLL	Punjab	Khushab	Muhammad Safdar:Shah Muhammad
Impact	25/01/2023	3	PLL	Punjab	Khushab	Muhammad Shameer:Muhammad Ameer
Impact	25/01/2023	3	PLL	Punjab	Khushab	Sher Khan:Ahmad Khan
Impact	25/01/2023	3	PLL	Punjab	Khushab	Umer Daraz:Muhammad Raza
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Abdul Malik:Azam Ali
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Haq Nawaz:Peera datta
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Haq Nawaz:Peera datta
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Hazoor Ahmad:Pearinditta
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Javeed Iqbal:M Sharif
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Mushtaq Hussain:Kamal pur jatyal
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Talha Naeem:M.Afzal
Impact	25/01/2023	2	PLL	Punjab	Lodhran	Umar Farooq Khan:Shaib yar
Impact	25/01/2023	1	PLL	Punjab	Vehari	Ashraf Ali:Ali Muhammad
Impact	25/01/2023	1	PLL	Punjab	Vehari	Karam Elahi:Haji Allah Baksh
Impact	25/01/2023	1	PLL	Punjab	Vehari	Master Basir Ahmed:Atta Muhammad
Impact	25/01/2023	1	PLL	Punjab	Vehari	Muhammad Banyameen:Muhammad Sarwar
Impact	25/01/2023	1	PLL	Punjab	Vehari	Muhammad Nasrullah:Ghulam Nabi
Impact	25/01/2023	1	PLL	Punjab	Vehari	Muhammad Saleem:Rehmat Ullah
Impact	25/01/2023	1	PLL	Punjab	Vehari	Muhammad Yaqoob:Sajwara
Impact	25/01/2023	1	PLL	Punjab	Vehari	Sajjad Mehmood:Bashir Ahmed
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Abdul Farooq:Peer Muhammad
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Ali Rizwan khan:Zahoor Khan
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Muhammad Ibrar:M.Adrees
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Muhammad Nawaz:Noor Muhammad
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Muhammad Ramzan:Karam Ali
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Nazar Muhammad:Muhammad Nawaz Khan
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Noor Muhammad:Muhammad Ameer
Impact	26/01/2023	1	PLL	Punjab	Sahiwal	Usman ali:Arshad Akhter

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	27/01/2023	1	PLL	Punjab	Okara	Haji Muhammad Ashraf:Fazal Karim
Impact	27/01/2023	1	PLL	Punjab	Okara	Khan Muhammad:Wali Muhammad
Impact	27/01/2023	1	PLL	Punjab	Okara	Maqbool Ahmed:Sardar Muhammad Zafar
Impact	27/01/2023	1	PLL	Punjab	Okara	Muhammad Akram:Muhammad Ali
Impact	27/01/2023	1	PLL	Punjab	Okara	Muhammad Ramzan:Taj ud Din
Impact	27/01/2023	1	PLL	Punjab	Okara	Muhammad Younas Bhatti:Salamat Ali Bhatti
Impact	27/01/2023	1	PLL	Punjab	Okara	Sabir:Abdul Ghani
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Faiz Ahmad:Muhammad Fazal
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Faiz Ahmad:Muhammad Fazal
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Mushtaq Ahmad:Muhammad Chirag
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Qutab sattar:Muhammad Jamal
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Hafiz Mahtab Ahmad:Mushqat Ahmad
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Hafiz Talib Hussain:Faiz Ahmad
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Muhammad Younas:Anayat Muhammad
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Muneer Ahmad Chishti:Nazar Muhammad
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Zakar Hussain:Muhammad Iqbal
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Rashid Rasheed:Rasheed Ahmad
Impact	27/05/2024	2	PLL	Punjab	Pakpattan	Abid Hussain:Muhammad Din
Impact	27/05/2024	1	PLL	Punjab	Lahore	Faqeer Hussain:Muhammad Ismail
Impact	27/05/2024	1	PLL	Punjab	Lahore	Muhammad Boota:Hassan Muhammad
Impact	27/05/2024	1	PLL	Punjab	Lahore	Asghar Ali:Inayat Ali
Impact	27/05/2024	1	PLL	Punjab	Lahore	Abid Abbass:Ghulam Shabir
Impact	27/05/2024	1	PLL	Punjab	Lahore	Karamat Ali:Muhammad Yasin
Impact	27/05/2024	1	PLL	Punjab	Lahore	Liaqat Ali Khan:Mooj khan
Impact	28/05/2024	2	PLL	Punjab	Layyah	Ghulam Shabbir:Meher Faqeer Muhammad
Impact	28/05/2024	2	PLL	Punjab	Layyah	Ghulam Jaffar:Ghulam Hussain
Impact	28/05/2024	2	PLL	Punjab	Layyah	Manzoor Hussain:Waryam Khan
Impact	28/05/2024	2	PLL	Punjab	Layyah	Muhammad imran:Muhammad Ramzan
Impact	28/05/2024	2	PLL	Punjab	Layyah	Nasir Abbas Jawaid:Lal Hussain Khan

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	28/05/2024	2	PLL	Punjab	Layyah	Tariq Saeed:Muhammad Saeed
Impact	28/05/2024	2	PLL	Punjab	Layyah	Muhammad Asghar:Malik Allah Baksh
Impact	28/05/2024	2	PLL	Punjab	Layyah	Allah Ditta:Ali Muhammad
Impact	28/05/2024	2	PLL	Punjab	Layyah	Muhammad Aslam:Ghulam Akbar
Impact	28/05/2024	2	PLL	Punjab	Layyah	Muhammad Amir:Muhammad Ramzan
Impact	28/05/2024	2	PLL	Punjab	Layyah	Tahir Jameel:Mubarik Ali
Impact	28/05/2024	2	PLL	Punjab	Layyah	Muhammad Ashraf:Muhammad Inayat
Impact	28/05/2024	2	PLL	Punjab	Layyah	G:H
Impact	28/05/2024	2	PLL	Punjab	Layyah	Muhammad Tufail:Noor Muhammad
Impact	28/05/2024	2	PLL	Punjab	Layyah	Khizar Hayat Khan:Haji Faiz Ullah Khan
Impact	28/05/2024	2	PLL	Punjab	Layyah	Muhammad Afzal:Falak Sher
Impact	28/05/2024	1	PLL	Punjab	Kasur	Muhammad Israel:Khillu khan
Impact	28/05/2024	1	PLL	Punjab	Kasur	Liaqat Ali:Abdul Razzaq
Impact	28/05/2024	1	PLL	Punjab	Kasur	Muhammad Rasheed:Sardar Sooba
Impact	28/05/2024	1	PLL	Punjab	Kasur	Abdul Raoof:Muhammad Abdullah
Impact	28/05/2024	1	PLL	Punjab	Kasur	Faizullah:Allah Bukhsh
Impact	28/05/2024	1	PLL	Punjab	Kasur	Naeem Ullah:Rehmat Ullah
Impact	29/05/2024	2	PLL	Punjab	Jhang	Gulzar Khan:Meetha
Impact	29/05/2024	2	PLL	Punjab	Jhang	Ali Muhammad:Ghulam Muhammad
Impact	29/05/2024	2	PLL	Punjab	Jhang	Muhammad Shafi:Jewan
Impact	29/05/2024	2	PLL	Punjab	Jhang	Noor Muhammad:Khan
Impact	29/05/2024	2	PLL	Punjab	Jhang	Sarfraz khan:Muhammad Ameer
Impact	29/05/2024	2	PLL	Punjab	Jhang	Bilal Hussain:Muhammad Ashraf
Impact	29/05/2024	2	PLL	Punjab	Jhang	Ghazanfar Ali Shah:Ali Muhammad
Impact	29/05/2024	2	PLL	Punjab	Jhang	Nazar Abbas:Hamayon
Impact	29/05/2024	2	PLL	Punjab	Jhang	Muhammad Ameen:Ali Bahader Khan
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Muhammad Nawaz:Farid Khan
Impact	30/05/2024	2	PLL	Punjab	Jhang	Irshad Hussain:Muhammad Shah
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Muhammad Ali:Ahmad

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Abdul Ali:Bashir Ahmad
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Riaz Ahmad:Sher Muhammad
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Ijaz Hussain:Riaz Hussain
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Shahid Imran:Sikander Hayat
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Muhammad Yousaf:Gulzar Hussain
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Haq Nawaz:Muhammad Mansha
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Thoba Khan:Mutal khan
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Fazal Hussain Amir:Shaharat Khan
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Tariq Nawaz:Muhammad Mansha
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Muhammad Ayub:Gulzar Hussain
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Sharafat Hussain:Allah Jiwaya
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Sikander Hayat:Sher Muhammad
Impact	30/05/2024	1	PLL	Punjab	Narowal	Nisar Ahmad:Taaj Din
Impact	30/05/2024	1	PLL	Punjab	Narowal	Tanveer Ahmad:Sardar
Impact	30/05/2024	1	PLL	Punjab	Narowal	Abdul Majeed:Chahat Khan
Impact	30/05/2024	1	PLL	Punjab	Narowal	Adil Hussain:Riasat Ali
Impact	30/05/2024	1	PLL	Punjab	Narowal	Muhammad Arif:Elam Din
Impact	30/05/2024	1	PLL	Punjab	Narowal	Muhammad Shabir:Muhammad Ramzan
Impact	30/05/2024	1	PLL	Punjab	Narowal	Khalid Mehmood:Muhammad Tufail
Impact	30/05/2024	2	PLL	Punjab	Chiniot	Muhammad Riaz:Sher Muhammad
Impact	03/06/2024	1	PLL	Punjab	Bahawalnagar	Zeeshan Ahmad:Muhammad Tufail
Impact	03/06/2024	1	PLL	Punjab	Bahawalnagar	Dilbar Hussain:Jilal Din
Impact	03/06/2024	1	PLL	Punjab	Bahawalnagar	Muhammad Asif Sagheer:Shah Muhammad
Impact	03/06/2024	1	PLL	Punjab	Bahawalnagar	Rasheed Anwar:Noor Muhammad
Impact	03/06/2024	2	PLL	Punjab	Bahawalpur	Abdul Latif:Malik Peer Bukhsh
Impact	03/06/2024	2	PLL	Punjab	Bahawalpur	Ghulam Yasin:Muhammad Usman
Impact	03/06/2024	2	PLL	Punjab	Bahawalpur	Muhammad Usman:Lashkar Ali
Impact	03/06/2024	2	PLL	Punjab	Bahawalpur	Muhammad Amjad:Muhammad Amin
Impact	03/06/2024	3	PLL	Punjab	Bahawalpur	Saffia Bibi:W/O Muhammad Aslam

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	03/06/2024	3	PLL	Punjab	Bahawalpur	Ahmad Saeed:Ghulam Fareed
Impact	03/06/2024	3	PLL	Punjab	Bahawalpur	Ghulam Sarwar:Nazir Ahmad
Impact	03/06/2024	3	PLL	Punjab	Bahawalpur	Mai Anwar:W/O Muhammad Usman
Impact	04/06/2024	2	PLL	Punjab	Bahawalpur	Muhammad Ashraf:Muhammad Ibrahim
Impact	04/06/2024	2	PLL	Punjab	Bahawalpur	Muhammad Faisal:Muhammad Yaseen
Impact	04/06/2024	2	PLL	Punjab	Bahawalpur	Muhammad Sadiq:Malik Allah Ditta
Impact	04/06/2024	2	PLL	Punjab	Bahawalpur	Muhammad Bakhsh:Nabi Bakhsh
Impact	04/06/2024	1	PLL	Punjab	Rahim Yar Khan	Rashid Ali Bajwa:Basharat Ali
Impact	04/06/2024	1	PLL	Punjab	Rahim Yar Khan	Ghulam Muhammad:Abdul Karim
Impact	04/06/2024	1	PLL	Punjab	Rahim Yar Khan	Ghulam Nazak:Challu Khan
Impact	04/06/2024	1	PLL	Punjab	Rahim Yar Khan	Nazeer Ahmad:Talib Hussain
Impact	04/06/2024	3	PLL	Punjab	Rahim Yar Khan	Farhan Bashir:Bashir Ahmad
Impact	04/06/2024	3	PLL	Punjab	Rahim Yar Khan	Muhammad Aslam:Wali Muhammad
Impact	04/06/2024	3	PLL	Punjab	Rahim Yar Khan	Muhammad Aslam:Ghulam Nabi
Impact	04/06/2024	3	PLL	Punjab	Rahim Yar Khan	Rao Kaleem Ullah:Muhammad Sharief
Impact	05/06/2024	1	PLL	Punjab	Rahim Yar Khan	Ghulam Mohaudin:Khairat Ali
Impact	05/06/2024	1	PLL	Punjab	Rahim Yar Khan	Khan Mehmood:Muhammad Hussain
Impact	05/06/2024	1	PLL	Punjab	Rahim Yar Khan	Muhammad Afzal:Allah Bux
Impact	05/06/2024	1	PLL	Punjab	Rahim Yar Khan	Muhammad Mazhar Rafiq:Rafiq Ahmed
Impact	05/06/2024	1	PLL	Punjab	Rahim Yar Khan	Ghulam Mustafa:Jam Allah Bux
Impact	05/06/2024	2	PLL	Punjab	Muzaffargarh	Malik Muhammad Abid:Allah Ditta
Impact	05/06/2024	2	PLL	Punjab	Muzaffargarh	Ghulam Hussain:Muhammad Bukhsh
Impact	05/06/2024	2	PLL	Punjab	Muzaffargarh	Ijaz Ahmad:Manzoor Ahmad Urf Ali Ahmad
Impact	05/06/2024	2	PLL	Punjab	Muzaffargarh	Ijaz Hussain:Allah Wasaya
Impact	05/06/2024	2	PLL	Punjab	Muzaffargarh	Mehar M. Asghar:Wahid Bukhsh
Impact	05/06/2024	2	PLL	Punjab	Muzaffargarh	Muhammad Ishaq:Ghulam Haider
Impact	05/06/2024	3	PLL	Punjab	Muzaffargarh	Muhammad Asghar:Bashir Ahmad
Impact	05/06/2024	3	PLL	Punjab	Muzaffargarh	Ghulam Fareed:Ghulam Nabi
Impact	05/06/2024	3	PLL	Punjab	Muzaffargarh	Altaf Hussain:Allah Ditta

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	05/06/2024	3	PLL	Punjab	Muzaffargarh	Bashir Ahmad:Ghulam Nabi
Impact	05/06/2024	3	PLL	Punjab	Muzaffargarh	Bashir Ahmad:Wazir Khan
Impact	05/06/2024	3	PLL	Punjab	Muzaffargarh	Ghulam Yaseen:Allah Ditta
Impact	06/06/2024	1	PLL	Punjab	Rajanpur	Nazar Hussain:Umar Wadda
Impact	06/06/2024	1	PLL	Punjab	Rajanpur	Abdul Rasheed:Khan Muhammad
Impact	06/06/2024	1	PLL	Punjab	Rajanpur	Hussain Buksh:Wahid Buksh
Impact	06/06/2024	1	PLL	Punjab	Rajanpur	Baqir Hussain:Ameer Bukhsh
Impact	06/06/2024	1	PLL	Punjab	Rajanpur	Liaqat Hussain:Haji Hussain Bukhsh
Impact	06/06/2024	1	PLL	Punjab	Rajanpur	Mureed Hussain:Elahi Bukhsh
Impact	10/06/2024	1	PLL	Punjab	Faisalabad	Ishtiaq Ahmad:Faiz Muhammad
Impact	10/06/2024	1	PLL	Punjab	Faisalabad	Muhammad Pervaiz:M.Rafique
Impact	10/06/2024	1	PLL	Punjab	Faisalabad	Zafar Iqbal:Bashir Ahmad
Impact	10/06/2024	2	PLL	Punjab	Toba Tek Singh	Zulfiqar Ali:Abdul Kareem
Impact	10/06/2024	2	PLL	Punjab	Khanewal	Muzaffar Abbas:Allah Dad
Impact	10/06/2024	2	PLL	Punjab	Khanewal	Talib Hussain:Malik Allah Yar
Impact	10/06/2024	3	PLL	Punjab	Bhakkar	Ashiq Hussain:Gull Muhammad
Impact	10/06/2024	3	PLL	Punjab	Bhakkar	Ghulam Abbas:Ghulam Sadiq
Impact	10/06/2024	3	PLL	Punjab	Bhakkar	Mohsin Ali:Muhammad Iqbal
Impact	10/06/2024	3	PLL	Punjab	Bhakkar	Muhamamd Iqbal:Nazar Hussain
Impact	10/06/2024	3	PLL	Punjab	Bhakkar	Muhammad Afzal:Muhammad Fazal
Impact	11/06/2024	1	PLL	Punjab	Gujranwala	Mazhar Iqbal:Muhammad Suleman
Impact	11/06/2024	1	PLL	Punjab	Gujranwala	Mohsin Javaid:Muhammad Javaid
Impact	11/06/2024	1	PLL	Punjab	Gujranwala	Adnan Afzal:Muhammad Afzal
Impact	11/06/2024	1	PLL	Punjab	Gujranwala	Mazhar Hussain:Nazar Muhammad
Impact	11/06/2024	1	PLL	Punjab	Gujranwala	Muhammad Ishaq:Peer Muhammad
Impact	11/06/2024	2	PLL	Punjab	Hafizabad	Abu Bakkar:Mushtaq Ahmad
Impact	11/06/2024	2	PLL	Punjab	Hafizabad	Ghulam Abbas:Ali Ahmed
Impact	11/06/2024	2	PLL	Punjab	Hafizabad	Muhammad Afzal:Muhammad Yar
Impact	11/06/2024	2	PLL	Punjab	Hafizabad	Nazim Hussain:Peer Muhammad

Survey Type	Survey Date	Team.#	Intervention	Zone	District	Scheme Name
Impact	11/06/2024	2	PLL	Punjab	Hafizabad	Tanveer Ahmad Khan:Muhammad Riaz
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Rukhsar Hussain:Muhammad Anwar
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Muhammad Abbas:Jalal
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Muhammad Boota:Ghulam Haider
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Sajid Pervaiz:Ghulam Rasool
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Muhammad Nawaz:Muhammad Hussain
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Tiamoor Aslam:Muhammad Aslam
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Muhammad Riaz:Nasir
Impact	11/06/2024	3	PLL	Punjab	Mandi Bahauddin	Nazakat Irfan:Muhammad Azam
Impact	12/06/2024	1	PLL	Punjab	Kasur	Muhammd Zikria:Nazeer Ahmad
Impact	12/06/2024	1	PLL	Punjab	Kasur	Abdul Shakoor:Abdul Karim
Impact	12/06/2024	2	PLL	Punjab	Nankana Sahib	Taaj Muhammad:Ch. Dogar
Impact	12/06/2024	2	PLL	Punjab	Nankana Sahib	Kamran Shafique:Muhammad Shafique
Impact	13/06/2024	3	PLL	Punjab	Mianwali	Abdul Majeed:Imam Din
Impact	13/06/2024	3	PLL	Punjab	Mianwali	Abdul Majeed:Muhammad Yousaf
Impact	13/06/2024	3	PLL	Punjab	Mianwali	Ali Hamad:Ahsan Muhammad
Impact	13/06/2024	3	PLL	Punjab	Mianwali	Muhammad Iqbal:Hashmat Ali
Impact	14/06/2024	3	PLL	Punjab	Mianwali	Shan Muhammad:Hakim Ali
Impact	14/06/2024	3	PLL	Punjab	Mianwali	Abdul Rahim:Noor Muhammad
Impact	14/06/2024	3	PLL	Punjab	Mianwali	Liaqat Ali:Muhammad Yasin
Impact	20/01/2023	1	PLL	KP	Dera Ismail Khan	Junaid Ahmad Khan:Jamshaid Ahmad khan
Impact	20/01/2023	1	PLL	KP	Dera Ismail Khan	Malik Muhammad Bhawal:Muhammad Afzal
Impact	20/01/2023	1	PLL	KP	Dera Ismail Khan	Muhammad Arif:Malik khuda Baksh
Impact	20/01/2023	1	PLL	KP	Dera Ismail Khan	Muhammad Arshad:Muhammad Yaqoob
Impact	21/01/2023	1	PLL	KP	Dera Ismail Khan	Muhammad Ramzan:Muhammad Hashim
Impact	23/01/2023	1	PLL	Balochistan	Jafarabad	Ejaz Ali:Mohammed Azeem
Impact	23/01/2023	1	PLL	Balochistan	Jafarabad	Javeed Ali:Mobabbat Khan
Impact	23/01/2023	1	PLL	Balochistan	Jafarabad	Mohammed Kaleem:Haji Ameer Bux
Impact	23/01/2023	1	PLL	Balochistan	Jafarabad	Sher Khan:Ghulam Haider

Survey Type	Survey Date	Team.#	Interven-tion	Zone	District	Scheme Name
Impact	24/01/2023	1	PLL	Balochistan	Sohbatpur	Ghulam Sabir:Abdul Rehman
Impact	24/01/2023	1	PLL	Balochistan	Sohbatpur	Mohammed Hassan:Noor Mohammed
Impact	24/01/2023	1	PLL	Balochistan	Sohbatpur	Mohiudin:Sabir

ANNEX-F: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON CROP AREA AND CROPPING PATTERN

Crop	Impact of Watercourse Improvement on Crop Area and Cropping Pattern - Punjab					
	Before WC Improvement	After WC Improvement	Impact			
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	10777	42.6%	10880	40.8%	103	1.0%
Rice	4554	18.0%	4585	17.2%	32	0.7%
Cotton	4807	19.0%	4949	18.6%	142	3.0%
Maize	784	3.1%	839	3.1%	54	6.9%
Sugarcane	1265	5.0%	1504	5.6%	239	18.9%
Oil Seeds	253	1.0%	278	1.0%	25	9.7%
Pulses	1138	4.5%	1578	5.9%	439	38.6%
Tobacco	94	0.4%	104	0.4%	10	11.0%
Okra	3	0.01%	3	0.01%	1	23.9%
Onions	126	0.5%	157	0.6%	31	24.4%
Potato	354	1.4%	395	1.5%	41	11.6%
Tomato	0	0.0%	0	0.0%	0	0.0%
Other Vegetables	106	0.4%	137	0.5%	31	29.1%
Apple	0	0.0%	0	0.0%	0	0.0%
Peach	0	0.0%	0	0.0%	0	0.0%
Other Fruits	25	0.1%	25	0.1%	0	0.2%
Rabi Fodder	531	2.1%	638	2.4%	107	20.1%
Kharif Fodder	481	1.9%	574	2.2%	93	19.4%
Overall	25297	100.0%	26646	100.0%	1349	5.3%

Crop	Impact of Watercourse Improvement on Crop Area and Cropping Pattern - KP					
	Before WC Improvement	After WC Improvement	Impact			
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	2132	50.6%	2234	42.8%	102	4.8%
Rice	51	1.2%	52	1.0%	1	2.6%
Cotton	16	0.4%	17	0.3%	2	10.6%
Maize	662	15.7%	806	15.5%	144	21.8%
Sugarcane	169	4.0%	265	5.1%	97	57.5%
Oil Seeds	42	1.0%	54	1.0%	12	28.3%
Pulses	350	8.3%	763	14.6%	413	118.2%
Tobacco	42	1.0%	55	1.1%	13	31.3%
Okra	1	0.02%	1	0.03%	1	67.5%
Onions	29	0.7%	50	1.0%	20	69.3%
Potato	152	3.6%	204	3.9%	52	34.3%
Tomato	101	2.4%	118	2.3%	17	17.1%
Other Vegetables	34	0.8%	62	1.2%	28	83.3%
Apple	0	0.0%	0	0.0%	0	0.0%
Peach	169	4.0%	171	3.3%	3	1.7%
Other Fruits	101	2.4%	102	2.0%	1	0.7%
Rabi Fodder	139	3.3%	221	4.2%	82	59.2%
Kharif Fodder	25	0.6%	40	0.8%	14	56.3%
Overall	4213	100.0%	5216	100.0%	1003	23.8%

. Impact of Watercourse Improvement on Crop Area and Cropping Pattern – Balochistan						
Crop	Before WC Improvement		After WC Improvement		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	1083	24.3%	1507	21.3%	425	39.2%
Rice	909	20.4%	1065	15.1%	157	17.2%
Cotton	276	6.2%	471	6.7%	195	70.5%
Maize	71	1.6%	161	2.3%	90	126.6%
Sugarcane	13	0.3%	57	0.8%	43	323.3%
Oil Seeds	187	4.2%	469	6.6%	282	150.7%
Pulses	80	1.8%	618	8.7%	538	670.6%
Tobacco	30	0.7%	79	1.1%	49	162.0%
Okra	0	0.0%	0	0.0%	0	0.0%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	0	0.0%	0	0.0%	0	0.0%
Tomato	147	3.3%	278	3.9%	131	88.8%
Other Vegetables	71	1.6%	381	5.4%	309	433.8%
Apple	543	12.2%	584	8.3%	41	7.5%
Peach	192	4.3%	209	3.0%	17	9.1%
Other Fruits	759	17.0%	790	11.2%	31	4.1%
Rabi Fodder	94	2.1%	394	5.6%	300	321.1%
Kharif Fodder	0	0.0%	0	0.0%	0	0.0%
Overall	4455	100.0%	7063	100.0%	2608	58.5%

Impact of Watercourse Improvement on Crop Area and Cropping Pattern - GB						
Crop	Before WC Improvement		After WC Improvement		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	569	34.0%	576	32.5%	6	1.1%
Rice	0	0.0%	0	0.0%	0	0.0%
Cotton	0	0.0%	0	0.0%	0	0.0%
Maize	286	17.1%	303	17.1%	17	6.0%
Sugarcane	0	0.0%	0	0.0%	0	0.0%
Oil Seeds	77	4.6%	83	4.7%	6	8.0%
Pulses	23	1.4%	31	1.8%	8	32.8%
Tobacco	0	0.0%	0	0.0%	0	0.0%
Okra	0	0.0%	0	0.0%	0	0.0%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	383	22.9%	420	23.7%	37	9.6%
Tomato	0	0.0%	0	0.0%	0	0.0%
Other Vegetables	46	2.8%	57	3.2%	11	23.8%
Apple	0	0.0%	0	0.0%	0	0.0%
Peach	0	0.0%	0	0.0%	0	0.0%
Other Fruits	218	13.0%	218	12.3%	0	0.2%
Rabi Fodder	72	4.3%	84	4.7%	12	16.7%
Kharif Fodder	0	0.0%	0	0.0%	0	0.0%
Overall	1674	100.0%	1772	100.0%	98	5.8%

Impact of Watercourse Improvement on Crop Area and Cropping Pattern – AJK						
Crop	Before WC Improvement		After WC Improvement		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	192	40.8%	197	39.2%	6	2.9%
Rice	8	1.7%	8	1.6%	0	1.2%
Cotton	0	0.0%	0	0.0%	0	0.0%
Maize	241	51.2%	262	52.0%	21	8.8%
Sugarcane	0	0.0%	0	0.0%	0	0.0%
Oil Seeds	13	2.7%	14	2.8%	1	10.2%
Pulses	7	1.4%	10	1.9%	3	46.2%
Tobacco	0	0.0%	0	0.0%	0	0.0%
Okra	0	0.0%	0	0.0%	0	0.0%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	0	0.0%	0	0.0%	0	0.0%
Tomato	0	0.0%	0	0.0%	0	0.0%
Other Vegetables	0	0.0%	0	0.0%	0	0.0%
Apple	0	0.0%	0	0.0%	0	0.0%
Peach	0	0.0%	0	0.0%	0	0.0%
Other Fruits	0	0.0%	0	0.0%	0	0.0%
Rabi Fodder	5	1.0%	6	1.1%	1	21.9%
Kharif Fodder	6	1.2%	7	1.3%	1	20.2%
Overall	470	100.0%	503	100.0%	33	7.1%

Impact of Watercourse Improvement on Crop Area and Cropping Pattern - ICT						
Crop	Before WC Improvement		After WC Improvement		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	8	31.5%	12	36.7%	4	44.4%
Rice	0	0.0%	0	0.0%	0	0.0%
Cotton	0	0.0%	0	0.0%	0	0.0%
Maize	8	30.3%	9	28.5%	1	16.8%
Sugarcane	0	0.0%	0	0.0%	0	0.0%
Oil Seeds	0	0.0%	0	0.0%	0	0.0%
Pulses	0	0.0%	0	0.0%	0	0.0%
Tobacco	0	0.0%	0	0.0%	0	0.0%
Okra	9	32.7%	10	29.4%	1	11.3%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	0	0.0%	0	0.0%	0	0.0%
Tomato	1	2.9%	1	2.7%	0	13.7%
Other Vegetables	1	2.6%	1	2.7%	0	29.6%
Apple	0	0.0%	0	0.0%	0	0.0%
Peach	0	0.0%	0	0.0%	0	0.0%
Other Fruits	0	0.0%	0	0.0%	0	0.0%
Rabi Fodder	0	0.0%	0	0.0%	0	0.0%
Kharif Fodder	0	0.0%	0	0.0%	0	0.0%
Overall	27	100.0%	33	100.0%	6	23.9%

ANNEX-G: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON CROP YEILD ON SAMPLE FARMS

Crops	Impact of Watercourse Improvement on Crop Yield on Sample Farms - Punjab			
	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre		Percent	
Wheat	32.2	34.3	2.10	7%
Rice	27.6	30.6	3.03	11%
Cotton	26.2	28.6	2.40	9%
Maize	81.7	86.1	4.45	5%
Sugarcane	745.9	798.0	52.09	7%
Oil Seeds	24.0	26.5	2.50	10%
Pulses	5.0	5.4	0.40	8%
Tobacco	70.5	75.1	4.60	7%
Okra	89.5	104.0	14.50	16%
Onions	167.0	187.0	20.00	12%
Potato	250.8	275.4	24.65	10%
Tomato	0.0	0.0	0.00	0%
Other Vegetables	62.7	70.2	7.46	12%
Apple	0.0	0.0	0.00	0%
Peach	0.0	0.0	0.00	0%
Other Fruits	121.0	130.0	9.03	7%
Rabi Fodder	393.7	455.0	61.33	16%
Kharif Fodder	358.3	367.4	9.10	3%

Crops	Impact of Watercourse Improvement on Crop Yield on Sample Farms - KP			
	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre		Percent	
Wheat	24.5	29.4	4.90	20%
Rice	24.3	27.2	2.95	12%
Cotton	26.7	29.7	3.03	11%
Maize	21.0	27.0	6.00	29%
Sugarcane	606.7	656.3	49.63	8%
Oil Seeds	16.5	18.4	1.90	12%
Pulses	6.4	6.2	-0.20	-3%
Tobacco	29.4	32.0	2.63	9%
Okra	84.0	94.3	10.30	12%
Onions	165.0	190.0	25.00	15%
Potato	143.0	169.0	26.00	18%
Tomato	72.2	80.0	7.83	11%
Other Vegetables	38.7	48.9	10.23	26%
Apple	0.0	0.0	0.00	0%
Peach	89.0	90.0	1.00	1%
Other Fruits	60.0	65.0	5.00	8%
Rabi Fodder	381.2	400.0	18.78	5%
Kharif Fodder	316.8	324.7	7.95	3%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - Balochistan				
Crops	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre			Percent
Wheat	27.4	29.1	1.75	6%
Rice	31.5	35.9	4.40	14%
Cotton	25.7	28.4	2.73	11%
Maize	37.0	40.0	3.00	8%
Sugarcane	648.5	635.0	-13.50	-2%
Oil Seeds	9.5	12.0	2.55	27%
Pulses	7.0	8.8	1.80	26%
Tobacco	63.0	66.4	3.40	5%
Okra	0.0	0.0	0.00	0%
Onions	0.0	0.0	0.00	0%
Potato	0.0	0.0	0.00	0%
Tomato	118.0	132.7	14.70	12%
Other Vegetables	132.8	140.3	7.55	6%
Apple	93.0	102.6	9.60	10%
Peach	110.0	117.4	7.40	7%
Other Fruits	107.0	115.8	8.80	8%
Rabi Fodder	363.5	380.0	16.50	5%
Kharif Fodder	0.0	0.0	0.00	0%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - GB				
Crops	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre			Percent
Wheat	27.0	29.0	2.00	7%
Rice	0.0	0.0	0.00	0%
Cotton	0.0	0.0	0.00	0%
Maize	35.0	37.0	2.00	6%
Sugarcane	0.0	0.0	0.00	0%
Oil Seeds	14.0	17.0	3.00	21%
Pulses	6.0	6.9	0.89	15%
Tobacco	0.0	0.0	0.00	0%
Okra	0.0	0.0	0.00	0%
Onions	0.0	0.0	0.00	0%
Potato	160.0	185.0	25.00	16%
Tomato	0.0	0.0	0.00	0%
Other Vegetables	43.0	51.0	8.00	19%
Apple	0.0	0.0	0.00	0%
Peach	0.0	0.0	0.00	0%
Other Fruits	72.0	87.0	15.00	21%
Rabi Fodder	340.0	367.1	27.10	8%
Kharif Fodder	0.0	0.0	0.00	0%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - AJK				
Crops	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre			Percent
Wheat	28.3	31.0	2.75	10%
Rice	26.5	28.2	1.70	6%
Cotton	0.0	0.0	0.00	0%
Maize	31.5	35.3	3.80	12%
Sugarcane	0.0	0.0	0.00	0%
Oil Seeds	13.0	16.0	3.00	23%
Pulses	6.0	6.8	0.80	13%
Tobacco	0.0	0.0	0.00	0%
Okra	0.0	0.0	0.00	0%
Onions	0.0	0.0	0.00	0%
Potato	0.0	0.0	0.00	0%
Tomato	0.0	0.0	0.00	0%
Other Vegetables	0.0	0.0	0.00	0%
Apple	0.0	0.0	0.00	0%
Peach	0.0	0.0	0.00	0%
Other Fruits	0.0	0.0	0.00	0%
Rabi Fodder	369.5	425.0	55.50	15%
Kharif Fodder	441.0	480.0	39.00	9%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - ICT				
Crops	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre			Percent
Wheat	28.5	30.0	1.50	5%
Rice	0.0	0.0	0.00	0%
Cotton	0.0	0.0	0.00	0%
Maize	32.9	36.0	3.13	10%
Sugarcane	0.0	0.0	0.00	0%
Oil Seeds	0.0	0.0	0.00	0%
Pulses	0.0	0.0	0.00	0%
Tobacco	0.0	0.0	0.00	0%
Okra	120.0	130.0	10.00	8%
Onions	0.0	0.0	0.00	0%
Potato	0.0	0.0	0.00	0%
Tomato	101.0	115.0	14.00	14%
Other Vegetables	54.0	58.0	4.03	7%
Apple	0.0	0.0	0.00	0%
Peach	0.0	0.0	0.00	0%
Other Fruits	0.0	0.0	0.00	0%
Rabi Fodder	0.0	0.0	0.00	0%
Kharif Fodder	0.0	0.0	0.00	0%

ANNEX-H: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON CROP PRODUCTION

Crops	Impact of Watercourse Improvement on Crop Production - Punjab			
	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs)	Percent
Wheat	347009.31	373169.48	26160.17	8%
Rice	125563.58	140314.18	14750.60	12%
Cotton	125930.39	141537.60	15607.21	12%
Maize	64031.48	72211.75	8180.27	13%
Sugarcane	943476.21	1200226.53	256750.32	27%
Oil Seeds	6071.37	7356.76	1285.39	21%
Pulses	5691.91	8519.06	2827.15	50%
Tobacco	6598.82	7802.71	1203.88	18%
Okra	226.41	326.02	99.61	44%
Onions	21123.32	29421.62	8298.30	39%
Potato	88806.48	108845.10	20038.63	23%
Tomato	0.00	0.00	0.00	0%
Other Vegetables	6666.33	9631.53	2965.20	44%
Apple	0.00	0.00	0.00	0%
Peach	0.00	0.00	0.00	0%
Other Fruits	3060.14	3296.83	236.69	8%
Rabi Fodder	209133.50	290298.70	81165.20	39%
Kharif Fodder	172214.90	210893.73	38678.83	22%

Crops	Impact of Watercourse Improvement on Crop Production - KP			
	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs)	Percent
Wheat	52224.89	65670.20	13445.31	26%
Rice	1225.90	1410.25	184.35	15%
Cotton	415.65	512.20	96.54	23%
Maize	13898.13	21757.33	7859.20	57%
Sugarcane	102228.28	174170.27	71941.99	70%
Oil Seeds	695.10	994.59	299.49	43%
Pulses	2237.79	4730.15	2492.37	111%
Tobacco	1237.27	1769.93	532.65	43%
Okra	70.77	133.06	62.29	88%
Onions	4865.67	9487.74	4622.06	95%
Potato	21687.00	34411.51	12724.51	59%
Tomato	7296.40	9468.42	2172.02	30%
Other Vegetables	1303.13	3020.43	1717.30	132%
Apple	0.00	0.00	0.00	0%
Peach	14997.23	15429.66	432.43	3%
Other Fruits	6066.29	6620.60	554.31	9%
Rabi Fodder	52997.22	88553.53	35556.31	67%
Kharif Fodder	8006.24	12826.49	4820.24	60%

Impact of Watercourse Improvement on Crop Production - Balochistan				
Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs)	Percent
Wheat	29608.16	43860.21	14252.05	48%
Rice	28627.84	38245.34	9617.50	34%
Cotton	7089.39	13376.72	6287.33	89%
Maize	2637.36	6459.71	3822.35	145%
Sugarcane	8667.20	35927.69	27260.48	315%
Oil Seeds	1768.19	5629.93	3861.74	218%
Pulses	561.33	5437.76	4876.43	869%
Tobacco	1908.52	5269.22	3360.70	176%
Okra	0.00	0.00	0.00	0%
Onions	0.00	0.00	0.00	0%
Potato	0.00	0.00	0.00	0%
Tomato	17347.77	36838.23	19490.46	112%
Other Vegetables	9462.42	53387.31	43924.88	464%
Apple	50463.58	59875.79	9412.21	19%
Peach	21072.15	24543.44	3471.28	16%
Other Fruits	81227.14	91502.74	10275.60	13%
Rabi Fodder	34007.25	149700.02	115692.77	340%
Kharif Fodder	0.00	0.00	0.00	0%

Impact of Watercourse Improvement on Crop Production - GB				
Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs)	Percent
Wheat	15365.21	16690.65	1325.44	9%
Rice	0.00	0.00	0.00	0%
Cotton	0.00	0.00	0.00	0%
Maize	10005.80	11211.64	1205.84	12%
Sugarcane	0.00	0.00	0.00	0%
Oil Seeds	1077.91	1413.92	336.01	31%
Pulses	140.60	214.46	73.87	53%
Tobacco	0.00	0.00	0.00	0%
Okra	0.00	0.00	0.00	0%
Onions	0.00	0.00	0.00	0%
Potato	61246.59	77649.71	16403.12	27%
Tomato	0.00	0.00	0.00	0%
Other Vegetables	1979.23	2905.20	925.96	47%
Apple	0.00	0.00	0.00	0%
Peach	0.00	0.00	0.00	0%
Other Fruits	15666.49	18969.75	3303.26	21%
Rabi Fodder	24470.52	30833.79	6363.27	26%
Kharif Fodder	0.00	0.00	0.00	0%

Impact of Watercourse Improvement on Crop Production - AJK				
Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs)	
			Percent	
Wheat	5414.42	6113.30	698.89	13%
Rice	211.63	227.97	16.34	8%
Cotton	0.00	0.00	0.00	0%
Maize	7576.24	9234.97	1658.74	22%
Sugarcane	0.00	0.00	0.00	0%
Oil Seeds	164.88	223.71	58.82	36%
Pulses	39.46	65.39	25.93	66%
Tobacco	0.00	0.00	0.00	0%
Okra	0.00	0.00	0.00	0%
Onions	0.00	0.00	0.00	0%
Potato	0.00	0.00	0.00	0%
Tomato	0.00	0.00	0.00	0%
Other Vegetables	0.00	0.00	0.00	0%
Apple	0.00	0.00	0.00	0%
Peach	0.00	0.00	0.00	0%
Other Fruits	0.00	0.00	0.00	0%
Rabi Fodder	1735.75	2433.65	697.90	40%
Kharif Fodder	2485.95	3253.64	767.69	31%

Impact of Watercourse Improvement on Crop Production - ICT				
Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs)	
			Percent	
Wheat	240.55	365.67	125.13	52%
Rice	0.00	0.00	0.00	0%
Cotton	0.00	0.00	0.00	0%
Maize	266.70	341.14	74.44	28%
Sugarcane	0.00	0.00	0.00	0%
Oil Seeds	0.00	0.00	0.00	0%
Pulses	0.00	0.00	0.00	0%
Tobacco	0.00	0.00	0.00	0%
Okra	1052.60	1268.98	216.38	21%
Onions	0.00	0.00	0.00	0%
Potato	0.00	0.00	0.00	0%
Tomato	78.23	101.31	23.08	30%
Other Vegetables	37.83	52.67	14.84	39%
Apple	0.00	0.00	0.00	0%
Peach	0.00	0.00	0.00	0%
Other Fruits	0.00	0.00	0.00	0%
Rabi Fodder	0.00	0.00	0.00	0%
Kharif Fodder	0.00	0.00	0.00	0%

ANNEX-I: ZONE-WISE IMPACT OF WATERCOURSE IMPROVEMENT ON AGRICULTURE EMPLOYMENT

Impact of Watercourse Improvement on Agriculture Employment – Punjab				
Crops	Agricultural Employment			Change
	Before WC Improvement		After WC Improvement	
	Labor Man Days		Percent	
Wheat	278901	281563	2663	1%
Rice	143892	144900	1008	1%
Cotton	283728	292132	8404	3%
Maize	35537	38006	2469	7%
Sugarcane	72528	86242	13714	19%
Oil Seeds	2659	2918	259	10%
Pulses	9790	13567	3777	39%
Tobacco	4273	4743	470	11%
Okra	138	171	33	24%
Onions	8189	10186	1997	24%
Potato	23141	25824	2683	12%
Tomato	0	0	0	0%
Other Vegetables	4319	5577	1258	29%
Apple	0	0	0	0%
Peach	0	0	0	0%
Other Fruits	1518	1522	4	0%
Rabi Fodder	15725	18885	3161	20%
Kharif Fodder	9445	11279	1835	19%
Total	893781	937515	43734	5%

Impact of Watercourse Improvement on Agriculture Employment - KP				
Crops	Agricultural Employment			Change
	Before WC Improvement		After WC Improvement	
	Labor Man Days		Percent	
Wheat	55167	57808	2641	5%
Rice	1597	1638	41	3%
Cotton	920	1018	98	11%
Maize	29990	36516	6526	22%
Sugarcane	9662	15217	5555	57%
Oil Seeds	443	568	125	28%
Pulses	3007	6561	3554	118%
Tobacco	1923	2525	602	31%
Okra	46	77	31	67%
Onions	1909	3233	1324	69%
Potato	9909	13304	3395	34%
Tomato	4566	5345	779	17%
Other Vegetables	1370	2511	1141	83%
Apple	0	0	0	0%
Peach	11897	12104	207	2%
Other Fruits	6066	6111	45	1%
Rabi Fodder	4115	6553	2438	59%
Kharif Fodder	497	776	280	56%
Total	143084	171866	28781	20%

Impact of Watercourse Improvement on Agriculture Employment - Balochistan				
Crops	Agricultural Employment		Change	
	Before WC Improvement	After WC Improvement	Labor Man Days	Percent
Wheat	28017	39007	10990	39%
Rice	28719	33664	4946	17%
Cotton	16305	27804	11499	71%
Maize	3230	7318	4088	127%
Sugarcane	766	3244	2478	323%
Oil Seeds	1967	4931	2964	151%
Pulses	690	5314	4625	671%
Tobacco	1383	3623	2240	162%
Okra	0	0	0	0%
Onions	0	0	0	0%
Potato	0	0	0	0%
Tomato	6639	12537	5897	89%
Other Vegetables	2898	15468	12571	434%
Apple	35395	38067	2672	8%
Peach	13524	14760	1235	9%
Other Fruits	45548	47411	1863	4%
Rabi Fodder	2769	11661	8892	321%
Kharif Fodder	0	0	0	0%
Total	187849	264808	76959	41%

Impact of Watercourse Improvement on Agriculture Employment - GB				
Crops	Agricultural Employment		Change	
	Before WC Improvement	After WC Improvement	Labor Man Days	Percent
Wheat	14728	14895	167	1%
Rice	0	0	0	0%
Cotton	0	0	0	0%
Maize	12955	13731	777	6%
Sugarcane	0	0	0	0%
Oil Seeds	809	874	65	8%
Pulses	202	268	66	33%
Tobacco	0	0	0	0%
Okra	0	0	0	0%
Onions	0	0	0	0%
Potato	25012	27425	2413	10%
Tomato	0	0	0	0%
Other Vegetables	1871	2316	445	24%
Apple	0	0	0	0%
Peach	0	0	0	0%
Other Fruits	13055	13083	27	0%
Rabi Fodder	2130	2486	356	17%
Kharif Fodder	0	0	0	0%
Total	70762	75077	4316	6%

Impact of Watercourse Improvement on Agriculture Employment - AJK				
Crops	Agricultural Employment			Change
	Before WC Improvement		After WC Improvement	
	Labor Man Days		Percent	
Wheat	4960	5104	143	3%
Rice	252	255	3	1%
Cotton	0	0	0	0%
Maize	10899	11855	956	9%
Sugarcane	0	0	0	0%
Oil Seeds	133	147	14	10%
Pulses	57	83	26	46%
Tobacco	0	0	0	0%
Okra	0	0	0	0%
Onions	0	0	0	0%
Potato	0	0	0	0%
Tomato	0	0	0	0%
Other Vegetables	0	0	0	0%
Apple	0	0	0	0%
Peach	0	0	0	0%
Other Fruits	0	0	0	0%
Rabi Fodder	139	169	30	22%
Kharif Fodder	111	133	22	20%
Total	16551	17746	1195	7%

Impact of Watercourse Improvement on Agriculture Employment - ICT				
Crops	Agricultural Employment			Change
	Before WC Improvement		After WC Improvement	
	Labor Man Days		Percent	
Wheat	218	315	97	44%
Rice	0	0	0	0%
Cotton	0	0	0	0%
Maize	368	429	62	17%
Sugarcane	0	0	0	0%
Oil Seeds	0	0	0	0%
Pulses	0	0	0	0%
Tobacco	0	0	0	0%
Okra	479	533	54	11%
Onions	0	0	0	0%
Potato	0	0	0	0%
Tomato	35	40	5	14%
Other Vegetables	28	37	8	30%
Apple	0	0	0	0%
Peach	0	0	0	0%
Other Fruits	0	0	0	0%
Rabi Fodder	0	0	0	0%
Kharif Fodder	0	0	0	0%
Total	1129	1355	226	20%

ANNEX-J: ZONE-WISE IMPACT OF WATER TANKS ON CROP AREA AND CROPPING PATTERN

Impact of Watercourse Improvement on Crop Area and Cropping Pattern - Punjab

Crop	Before		After		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	532	43.0%	587	40.3%	55	10.4%
Rice	297	24.0%	332	22.8%	35	11.7%
Cotton	39	3.1%	42	2.9%	3	8.6%
Maize	148	12.0%	163	11.2%	14	9.6%
Sugarcane	22	1.8%	36	2.5%	13	59.5%
Pulses	0	0.0%	0	0.0%	0	0.0%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	0	0.0%	0	0.0%	0	0.0%
Tomato	0	0.0%	0	0.0%	0	0.0%
Other Vegetables	121	9.8%	182	12.5%	61	50.1%
Apple	0	0.0%	0	0.0%	0	0.0%
Other Fruits	0	0.0%	0	0.0%	0	0.0%
Rabi Fodder	26	2.1%	37	2.5%	11	42.8%
Kharif Fodder	52	4.2%	78	5.4%	26	51.1%
Overall	1237	100.0%	1456	100.0%	219	17.7%

Impact of Watercourse Improvement on Crop Area and Cropping Pattern - KP

Crop	Before		After		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	163	20.3%	175	17.4%	12	7.1%
Rice	2	0.3%	3	0.3%	0	7.4%
Cotton	0	0.0%	0	0.0%	0	0.0%
Maize	65	8.1%	69	6.9%	4	6.0%
Sugarcane	0	0.0%	0	0.0%	0	0.0%
Pulses	68	8.4%	102	10.1%	34	50.2%
Onions	163	20.2%	207	20.7%	45	27.5%
Potato	0	0.0%	0	0.0%	0	0.0%
Tomato	43	5.3%	52	5.1%	9	21.1%
Other Vegetables	61	7.6%	81	8.1%	20	32.5%
Apple	0	0.0%	0	0.0%	0	0.0%
Other Fruits	188	23.4%	249	24.8%	61	32.3%
Rabi Fodder	31	3.8%	39	3.8%	8	26.0%
Kharif Fodder	21	2.6%	27	2.7%	6	31.0%
Overall	805	100.0%	1004	100.0%	198	24.7%

Impact of Watercourse Improvement on Crop Area and Cropping Pattern - Balochistan

Crop	Before		After		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	49	5.3%	53	4.6%	5	10.2%
Rice	44	4.8%	49	4.2%	5	10.6%
Cotton	0	0.0%	0	0.0%	0	0.0%
Maize	0	0.0%	0	0.0%	0	0.0%
Sugarcane	0	0.0%	0	0.0%	0	0.0%

Crop	Before		After		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Pulses	0	0.0%	0	0.0%	0	0.0%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	0	0.0%	0	0.0%	0	0.0%
Tomato	47	5.1%	61	5.2%	14	30.3%
Other Vegetables	342	37.4%	502	42.9%	160	46.7%
Apple	357	39.0%	395	33.8%	38	10.6%
Other Fruits	46	5.0%	67	5.7%	21	46.5%
Rabi Fodder	31	3.4%	43	3.7%	12	37.5%
Kharif Fodder	0	0.0%	0	0.0%	0	0.0%
Overall	915	100.0%	1170	100.0%	254	27.8%

Impact of Watercourse Improvement on Crop Area and Cropping Pattern - GB

Crop	Before		After		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	55	32.4%	68	29.5%	13	24.0%
Rice	0	0.0%	0	0.0%	0	0.0%
Cotton	0	0.0%	0	0.0%	0	0.0%
Maize	32	18.7%	36	15.6%	4	13.5%
Sugarcane	0	0.0%	0	0.0%	0	0.0%
Pulses	0	0.0%	0	0.0%	0	0.0%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	36	21.1%	46	19.8%	10	27.8%
Tomato	0	0.0%	0	0.0%	0	0.0%
Other Vegetables	4	2.6%	8	3.6%	4	88.9%
Apple	0	0.0%	0	0.0%	0	0.0%
Other Fruits	38	22.4%	66	28.4%	28	72.3%
Rabi Fodder	5	2.8%	7	3.0%	2	45.8%
Kharif Fodder	0	0.0%	0	0.0%	0	0.0%
Overall	170	100.0%	232	100.0%	61	36.0%

Impact of Watercourse Improvement on Crop Area and Cropping Pattern - AJK

Crop	Before		After		Impact	
	Crop Acres	Percent	Crop Acres	Percent	Crop Acres	Percent Point
Wheat	118	42.5%	140	38.7%	22	18.6%
Rice	18	6.4%	21	5.7%	3	15.7%
Cotton	0	0.0%	0	0.0%	0	0.0%
Maize	62	22.4%	70	19.4%	8	12.4%
Sugarcane	0	0.0%	0	0.0%	0	0.0%
Pulses	0	0.0%	0	0.0%	0	0.0%
Onions	0	0.0%	0	0.0%	0	0.0%
Potato	0	0.0%	0	0.0%	0	0.0%
Tomato	0	0.0%	0	0.0%	0	0.0%
Other Vegetables	21	7.4%	36	9.9%	15	74.9%
Apple	0	0.0%	0	0.0%	0	0.0%
Other Fruits	37	13.2%	61	16.9%	24	66.6%
Rabi Fodder	15	5.3%	22	6.0%	7	47.5%
Kharif Fodder	8	2.8%	12	3.3%	4	55.6%
Overall	278	100.0%	361	100.0%	84	30.1%

ANNEX-K: ZONE-WISE IMPACT OF WATER TANKS ON CROP YIELDS

Impact of Watercourse Improvement on Crop Yield on Sample Farms - Punjab

Crops	Crop Yields			Impacts of WC Improvement
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs) per Acre	
Wheat	32.20	34.30	2.10	
Rice	27.60	30.60	3.00	11%
Cotton	26.20	28.60	2.40	9%
Maize	81.70	86.10	4.40	5%
Sugarcane	745.90	798.00	52.10	7%
Pulses	0.00	0.00	0.00	0%
Onions	0.00	0.00	0.00	0%
Potato	0.00	0.00	0.00	0%
Tomato	0.00	0.00	0.00	0%
Other Vegetables	63.00	70.20	7.20	11%
Apple	0.00	0.00	0.00	0%
Other Fruits	0.00	0.00	0.00	0%
Rabi Fodder	394.00	412.00	18.00	5%
Kharif Fodder	358.00	367.40	9.40	3%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - KP

Crops	Crop Yields			Impacts of WC Improvement
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs) per Acre	
Wheat	23.65	27.60	3.95	
Rice	22.33	27.00	4.67	21%
Cotton	0.00	0.00	0.00	0%
Maize	19.60	26.00	6.40	33%
Sugarcane	0.00	0.00	0.00	0%
Pulses	6.00	6.70	0.70	12%
Onions	158.00	183.00	25.00	16%
Potato	0.00	0.00	0.00	0%
Tomato	73.33	79.00	5.67	8%
Other Vegetables	43.50	48.70	5.20	12%
Apple	0.00	0.00	0.00	0%
Other Fruits	57.50	65.00	7.50	13%
Rabi Fodder	373.33	400.00	26.67	7%
Kharif Fodder	315.00	341.00	26.00	8%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - Balochistan

Crops	Crop Yields			Impacts of WC Improvement
	Before WC Improvement	After WC Improvement	Maunds (40 Kgs) per Acre	
Wheat	23.85	28.00	4.15	
Rice	23.30	27.80	4.50	19%
Cotton	0.00	0.00	0.00	0%
Maize	0.00	0.00	0.00	0%
Sugarcane	0.00	0.00	0.00	0%
Pulses	0.00	0.00	0.00	0%

Crops	Crop Yields			
	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre			Percent
Onions	0.00	0.00	0.00	0%
Potato	0.00	0.00	0.00	0%
Tomato	109.00	122.40	13.40	12%
Other Vegetables	130.00	140.00	10.00	8%
Apple	74.00	85.00	11.00	15%
Other Fruits	107.00	115.80	8.80	8%
Rabi Fodder	358.00	372.00	14.00	4%
Kharif Fodder	0.00	0.00	0.00	0%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - GB

Crops	Crop Yields			
	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre			Percent
Wheat	27.00	29.00	2.00	7%
Rice	0.00	0.00	0.00	0%
Cotton	0.00	0.00	0.00	0%
Maize	35.00	37.00	2.00	6%
Sugarcane	0.00	0.00	0.00	0%
Pulses	0.00	0.00	0.00	0%
Onions	0.00	0.00	0.00	0%
Potato	160.00	185.00	25.00	16%
Tomato	0.00	0.00	0.00	0%
Other Vegetables	43.00	51.00	8.00	19%
Apple	0.00	0.00	0.00	0%
Other Fruits	72.00	87.00	15.00	21%
Rabi Fodder	340.00	367.10	27.10	8%
Kharif Fodder	0.00	0.00	0.00	0%

Impact of Watercourse Improvement on Crop Yield on Sample Farms - AJK

Crops	Crop Yields			
	Before WC Improvement	After WC Improvement	Impacts of WC Improvement	
	Maunds (40 Kgs) per Acre			Percent
Wheat	27.10	29.00	1.90	7%
Rice	26.40	29.30	2.90	11%
Cotton	0.00	0.00	0.00	0%
Maize	30.40	34.50	4.10	13%
Sugarcane	0.00	0.00	0.00	0%
Pulses	0.00	0.00	0.00	0%
Onions	0.00	0.00	0.00	0%
Potato	0.00	0.00	0.00	0%
Tomato	0.00	0.00	0.00	0%
Other Vegetables	41.00	49.00	8.00	20%
Apple	0.00	0.00	0.00	0%
Other Fruits	80.00	88.00	8.00	10%
Rabi Fodder	370.00	407.00	37.00	10%
Kharif Fodder	475.00	496.00	21.00	4%

ANNEX-L: ZONE-WISE IMPACT OF WATER TANKS ON CROP PRODUCTION

Impact of Watercourse Improvement on Crop Production - Punjab

Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement		
	Maunds (40 Kgs)		Percent	
Wheat	17129.44	20148.72	3019.28	18%
Rice	8194.82	10149.01	1954.19	24%
Cotton	1011.29	1198.85	187.56	19%
Maize	12128.92	14012.43	1883.51	16%
Sugarcane	16702.37	28498.84	11796.48	71%
Pulses	0.00	0.00	0.00	0%
Onions	0.00	0.00	0.00	0%
Potato	0.00	0.00	0.00	0%
Tomato	0.00	0.00	0.00	0%
Other Vegetables	7638.10	12772.94	5134.84	67%
Apple	0.00	0.00	0.00	0%
Other Fruits	0.00	0.00	0.00	0%
Rabi Fodder	10211.72	15245.78	5034.05	49%
Kharif Fodder	18490.91	28682.64	10191.73	55%

Impact of Watercourse Improvement on Crop Production - KP

Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement		
	Maunds (40 Kgs)		Percent	
Wheat	3865.53	4829.70	964.17	25%
Rice	53.94	70.04	16.10	30%
Cotton	0.00	0.00	0.00	0%
Maize	1278.27	1798.02	519.75	41%
Sugarcane	0.00	0.00	0.00	0%
Pulses	405.80	680.70	274.90	68%
Onions	25697.49	37933.98	12236.49	48%
Potato	0.00	0.00	0.00	0%
Tomato	3129.39	4081.64	952.25	30%
Other Vegetables	2661.86	3947.12	1285.26	48%
Apple	0.00	0.00	0.00	0%
Other Fruits	10833.43	16205.29	5371.86	50%
Rabi Fodder	11422.54	15424.74	4002.20	35%
Kharif Fodder	6594.26	9351.69	2757.43	42%

Impact of Watercourse Improvement on Crop Production - Balochistan

Crops	Crop Production		Impacts of WC Improvement	
	Before WC Improvement	After WC Improvement		
	Maunds (40 Kgs)		Percent	
Wheat	1157.16	1496.44	339.28	29%
Rice	1023.83	1351.58	327.76	32%
Cotton	0.00	0.00	0.00	0%

Crops	Crop Production		Impacts of WC Improvement
	Before WC Improvement	After WC Improvement	
	Maunds (40 Kgs)		
Maize	0.00	0.00	0%
Sugarcane	0.00	0.00	0%
Pulses	0.00	0.00	0%
Onions	0.00	0.00	0%
Potato	0.00	0.00	0%
Tomato	5088.93	7448.80	46%
Other Vegetables	44508.69	70310.40	58%
Apple	26419.60	33561.45	27%
Other Fruits	4897.60	7766.64	59%
Rabi Fodder	11142.74	15919.48	43%
Kharif Fodder	0.00	0.00	0%

Impact of Watercourse Improvement on Crop Production - GB

Crops	Crop Production		Impacts of WC Improvement
	Before WC Improvement	After WC Improvement	
	Maunds (40 Kgs)		
Wheat	1490.92	1985.56	33%
Rice	0.00	0.00	0%
Cotton	0.00	0.00	0%
Maize	1115.46	1338.27	20%
Sugarcane	0.00	0.00	0%
Pulses	0.00	0.00	0%
Onions	0.00	0.00	0%
Potato	5753.72	8502.47	48%
Tomato	0.00	0.00	0%
Other Vegetables	190.54	427.00	124%
Apple	0.00	0.00	0%
Other Fruits	2748.70	5723.68	108%
Rabi Fodder	1622.49	2554.51	57%
Kharif Fodder	0.00	0.00	0%

Impact of Watercourse Improvement on Crop Production - AJK

Crops	Crop Production		Impacts of WC Improvement
	Before WC Improvement	After WC Improvement	
	Maunds (40 Kgs)		
Wheat	3200.25	4060.43	27%
Rice	469.47	602.59	28%
Cotton	0.00	0.00	0%
Maize	1892.12	2414.13	28%
Sugarcane	0.00	0.00	0%
Pulses	0.00	0.00	0%
Onions	0.00	0.00	0%
Potato	0.00	0.00	0%
Tomato	0.00	0.00	0%
Other Vegetables	843.03	1761.81	109%
Apple	0.00	0.00	0%
Other Fruits	2934.20	5377.00	83%
Rabi Fodder	5448.83	8842.76	62%
Kharif Fodder	3695.54	6003.48	62%

ANNEX-M: ZONE-WISE IMPACT OF WATER TANK ON AGRICULTURE EMPLOYMENT

Impact of Water Tank on Agriculture Employment - Punjab

Crops	Agricultural Employment			Change
	Before		After	
	Labor Man Days			
Wheat	13767	15203	1435	10%
Rice	9382	10481	1098	12%
Cotton	2278	2474	196	9%
Maize	6727	7375	648	10%
Sugarcane	1284	2048	764	59%
Pulses	0	0	0	0%
Onions	0	0	0	0%
Potato	0	0	0	0%
Tomato	0	0	0	0%
Other Vegetables	4928	7396	2468	50%
Apple	0	0	0	0%
Other Fruits	0	0	0	0%
Rabi Fodder	767	1095	328	43%
Kharif Fodder	1015	1534	519	51%
Total	40150	47606	7456	19%

Impact of Water Tank on Agriculture Employment - KP

Crops	Agricultural Employment			Change
	Before		After	
	Labor Man Days			
Wheat	4230	4529	299	7%
Rice	76	82	6	7%
Cotton	0	0	0	0%
Maize	2955	3134	178	6%
Sugarcane	0	0	0	0%
Pulses	582	874	292	50%
Onions	10529	13420	2890	27%
Potato	0	0	0	0%
Tomato	1927	2333	406	21%
Other Vegetables	2487	3295	807	32%
Apple	0	0	0	0%
Other Fruits	11304	14959	3654	32%
Rabi Fodder	906	1141	236	26%
Kharif Fodder	411	539	128	31%
Total	35409	44305	8896	25%

Impact of Water Tank on Agriculture Employment - Balochistan

Crops	Agricultural Employment			Change
	Before		After	
	Labor Man Days			
Wheat	1256	1383	127	10%
Rice	1389	1536	148	11%
Cotton	0	0	0	0%
Maize	0	0	0	0%

Crops	Agricultural Employment		Change	
	Before	After	Labor Man Days	
			Percent	
Sugarcane	0	0	0	0%
Pulses	0	0	0	0%
Onions	0	0	0	0%
Potato	0	0	0	0%
Tomato	2108	2748	640	30%
Other Vegetables	13918	20415	6498	47%
Apple	23289	25755	2467	11%
Other Fruits	2746	4024	1278	47%
Rabi Fodder	921	1267	345	37%
Kharif Fodder	0	0	0	0%
Total	45626	57129	11503	25%

Impact of Water Tank on Agriculture Employment - GB

Crops	Agricultural Employment		Change	
	Before	After	Labor Man Days	
			Percent	
Wheat	1429	1772	343	24%
Rice	0	0	0	0%
Cotton	0	0	0	0%
Maize	1444	1639	195	13%
Sugarcane	0	0	0	0%
Pulses	0	0	0	0%
Onions	0	0	0	0%
Potato	2350	3003	653	28%
Tomato	0	0	0	0%
Other Vegetables	180	340	160	89%
Apple	0	0	0	0%
Other Fruits	2291	3947	1657	72%
Rabi Fodder	141	206	65	46%
Kharif Fodder	0	0	0	0%
Total	7835	10908	3073	39%

Impact of Water Tank on Agriculture Employment - AJK

Crops	Agricultural Employment		Change	
	Before	After	Labor Man Days	
			Percent	
Wheat	3056	3624	567	19%
Rice	562	650	88	16%
Cotton	0	0	0	0%
Maize	2820	3171	350	12%
Sugarcane	0	0	0	0%
Pulses	0	0	0	0%
Onions	0	0	0	0%
	0	0	0	0%
Tomato	0	0	0	0%
Other Vegetables	836	1462	626	75%
Apple	0	0	0	0%
Other Fruits	2201	3666	1465	67%
Rabi Fodder	436	643	207	48%
Kharif Fodder	153	238	85	56%
Total	10064	13453	3389	34%

ANNEX-N: WUA MONITORING AND WATERCOURSE IMPACT 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.1.9	1.9	National Assembly Constituency?
BP.1.10	1.10	Provincial Assembly Constituency?
BP.2.0	2.0	Select date of survey
BP.2.1	2.1	Watercourse name/number?
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
Fill Date as per the selection of status of watercourse improvement		
BP.2.2.1	2.2.1	Issuance date of TS
BP.2.2.2	2.2.2	Issuance date of first Intermediate Completion Report (ICR-I)
BP.2.2.3	2.2.3	Issuance date of second Intermediate Completion Report (ICR-II)
BP.2.2.4	2.2.4	Issuance date of Final Completion Report (FCR)
BP.2.2.5	2.2.5	Completion date of Watercourse
BP.3.0	3.0	Select improvement type of Watercourse
	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 Segment (PCPS)
	3	PVC pipe
	4	RCC pipe
	5	PCC
	6	HDPE
	7	Stone masonry
	8	Mix types
If selected "Mix types" in Q.# 3.1 then continue with Q.# 3.1.1		Otherwise go to Q.# 3.2
BP.3.1.1	3.1.1	Select the multiple options to define the mix types
If selected "PVC pipe" in Q.# 3.1 or Q.# 3.1.1 then continue with Q.# 3.1.2		Otherwise go to Q.# 3.2
BP.3.1.2	3.1.2	PVC pipe dia?
BP.3.2	3.2	Total length of watercourse? (Meters)

If selected "20 years old or Additional lining" in Q.# 3.0 then continue with Q.# 3.2.0.1			Otherwise go to Q.# 3.2.1
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.4.0.7	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?	
	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	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: Owners / Tenants List – WC

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/Unit
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	Select Watercourse ID
OWNERS LIST		
SH.2.0	2.0	Name of owner?
SH.2.0.1	2.1	Gender?
	1	Male
	2	Female
SH.2.0.2	2.0.2	Father's name?
SH.2.1	2.1	Area owned? (Acres)
SH.2.1.1	2.1.1	Area rented in? (Acres)
SH.2.1.2	2.1.2	Area rented out? (Acres)
SH.2.2C	2.2C	Total area operated? (Acres)
SH.2.3	2.3	Select position in Water User Association
	1	Chairman
	2	Vice Chairman
	3	Treasurer
	4	Secretary
	5	Member
	6	Not Member
SH.2.4	2.4	Select location at watercourse
	1	Head
	2	Middle
	3	Tail
TENANTS LIST		
BL.3.0	3.0	Name of share-croppers / harries / tenant / etc.?
BL.3.0.1	3.0.1	Gender?
	1	Male
	2	Female
BL.3.0.2	3.0.2	Father's name?
BL.3.1	3.1	Total area operated? (Acres)
BL.3.2	3.2	Select location at watercourse
	1	Head
	2	Middle
	3	Tail
BL.4.0	4.0	Authentication by supervisor
BL.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)
BL.4.2	4.2	Comments of enumerator (if any) (optional)

MT-03: BENEFICIARIES FEEDBACK - WC

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit
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
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.# 1.6 & Covered till Q.# 5.6</i>		
Coordinates & Picture		
ID.1.6	1.6	Collect the coordinates at the Mogha point? (Turn off wireless or mobile data for precise coordinates)
ID.1.6.1	1.6.1	Take picture at start of Mogha point? (Facing toward watercourse)
ID.1.6.2	1.6.2	Take picture of Signboard? (In case of FCR Issued)
FARMER'S FEEDBACK		
BF.2.0	2.0	Number of Beneficiaries to be interviewed?
BF.3.0	3.0	Name of farmer?
BF.3.0.1	3.0.1	Select location at 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 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
1		Yes
0		No
WUA.3.4		3.4
	1	Yes
	0	No
	<i>If Selected "No" in Q.# 3.4 then continue with Q.# 3.4.1 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 you to be a member?
	1	Fellow farmers
	2	Big landlord
	3	OFWM field team
	4	Any other? Please specify
WUA.3.7Y	3.7Y	Define other who motivated you to became a 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 of the 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	Undertake 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	
<i>If Selected "Yes" in Q.# 3.3 then continue with Q.# 3.3.1</i>			<i>Otherwise go to Q.# 3.4.1</i>
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?	
<i>If Selected "Technical Sanction Issued" selected in Q.# 1.5 then continue with Q.# 5.0</i>			<i>Otherwise go to Q.# 5.1</i>
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	
<i>If Selected "Yes" in Q.# 5.0 then continue with Q.# 5.0.1</i>			<i>Otherwise go to Q.# 5.1</i>
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	Will the local labor be hired for works on this watercourse?	
	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	
<i>If Selected "Yes" in Q.# 5.1 then continue with Q.# 5.1.1</i>			<i>Otherwise go to Q.# 5.2</i>
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	Will any trees be cut down on this watercourse?	

	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
EBF.5.5	0	No
	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
If Selected "Yes" in Q.# 7.0.2 then continue with Q.# 7.0.3		Otherwise go to Q.# 7.1
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
If Selected "No" in Q.# 7.1 then continue with Q.# 7.1.1		Otherwise go to Q.# 7.1.2
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
If Selected "Not good" in Q.# 7.1.2 then continue with Q.# 7.1.3		Otherwise Go to Q.# 7.2
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 water-course 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? (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-04: FARMING HOUSEHOLD – WC

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit
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
BENEFICIARY PROFILE		
FH.2.0	2.0	Name of Farmer?
FH.2.0.1	2.0.1	Select gender?
	1	Male
	2	Female
FH.2.0.2	2.0.2	Father's name?
FH.2.0.3	2.0.3	Select location of farm on watercourse?
	1	Head
	2	Middle
	3	Tail
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.3.0.3	3.0.3	Fallow land? (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)
FH.4.0	4.0	Select tenurial status?
	1	Owner
	2	Owner cum tenant
	3	Tenant
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?
<i>If Selected "Tube well" in Q.# 4.1 then continue with Q.# 4.1.1</i>		<i>Otherwise go to Q.# 5.0</i>
IS.4.1.1	4.1.1	Select status of tube well water used?
	1	Owned
	2	Purchased
<i>If Selected "Purchased" in Q.# 4.1.1 then continue with Q.# 4.1.2</i>		<i>Otherwise go to Q.# 5.0</i>
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
<i>If Selected "Yes" in Q.# 5.0 then continue with Q.# 5.1</i>		<i>Otherwise go to Q.# 6.0</i>

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-04: FARMING HOUSEHOLD (Crops) - WC

DB Code	Q. #	Field Name
FH.8.0	8.0	Select all Grown Crops
	1	Wheat
	2	Rice
	3	Cotton
	4	Barley
	5	Berseem/Lucern
	6	Sugarcane (Ratoon)
	7	Sugarcane (New)
	8	Sunflower
	9	Sorghum
	10	Rapeseed, Mustard, Canola
	11	Maize
	12	Mango orchard (old)
	13	Mango orchard (new)
	14	Oats or Javi or Jontari
	15	Pulses (gram)
	16	Pulses (lentil)
	17	Dates orchard (old)
	18	Dates orchard (new)
	19	Banana orchard (old)
	20	Banana orchard (new)
	21	Lemon orchard (old)
	22	Lemon orchard (new)
	23	Apple orchard (old)
	24	Apple orchard (new)
	25	Tomato
	26	Chilli
	27	Okra
	28	Onion
	29	Tobacco
	30	Rabi fodder
	31	Kharif fodder
FH.8.0.1	8.0.1	Other kharif crop name?
FH.8.0.2	8.0.2	Other Rabi crops name?
FH.8.0.3	8.0.3	Other Orchard name?
FH.8.0.4	8.0.4	Other Vegetable name?
FH.8.1	8.1	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	Ploughing - Avg. Labor per Acre? (Man Days)
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	Planking - Avg. Labor per Acre? (Man Days)
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)
Seedling		
LP.12.0	12.0	Nursery/Seedling Used - Avg. cost per operation/Acre? (Rs./Acre)
LP.12.1	12.1	Nursery/Seedling Used - Avg. Labor per Acre? (Man Days)
Uprooting & Transplanting		
LP.13.0	13.0	Uprooting, Transporting & Transplanting - Avg. cost per operation/Acre? (Rs./Acre)
LP.13.1	13.1	Uprooting, Transporting & Transplanting - Avg. Labor per Acre? (Man Days)
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	Manual Weeding - Avg. Labor per Acre? (Man Days)
Weedicides/Pesticides		
WS.15.0	15.0	Weedicides/Pesticides - Avg. No. of operation/Acre
WS.15.1	15.1	Weedicides/Pesticides - Avg. cost per operation/Acre? (Rs./Acre)
WS.15.2	15.2	Weedicides/Pesticides - Avg. Labor per Acre? (Man Days)
Farm Yard Manure (FYM)		
FY.16.0	16.0	Farm yard manure (FYM) - Avg. No. of Tractor-Trollies/Acre
FY.16.1	16.1	Farm yard manure (FYM) including transport & Application - Avg. cost per Tractor-Trollies/Acre? (Rs./Acre)
FY.16.2	16.2	Farm yard manure (FYM) including transport & Application - Avg. Labor per Acre? (Man Days)
Fertilizer		
FI.17.0	17.0	Urea (Bag)
		Urea Rate? (Rs./Bag)
FI.17.0.1	17.0.1	Urea - Avg. Labor per acre? (Man Days)
FI.17.1	17.1	DAP (Bag)
		DAP Rate? (Rs./Bag)
FI.17.1.1	17.1.1	DAP - Avg. Labor per acre? (Man Days)
FI.17.2	17.2	Potash (Bag)
		Potash Rate? (Rs./Bag)
FI.17.2.1	17.2.1	Potash - Avg. Labor per acre? (Man Days)
FI.17.3	17.3	SSP (Bag)
		SSP Rate? (Rs./Bag)
FI.17.3.1	17.3.1	SSP - Avg. Labor per acre? (Man Days)
FI.17.4	17.4	NP (Bag)
		NP Rate? (Rs./Bag)
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)
		Other fertilizer-1 Rate? (Rs./Bag)
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)
		Other fertilizer-2 Rate? (Rs./Bag)
FI.17.6.3	17.6.3	Other fertilizer-2 - Avg. Labor per acre? (Man Days)
Irrigation		
CI.18.0	18.0	Canal
CI.18.1	18.1	Tube well
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 (Rs./Acre)
LR.20.1	20.1	Average land Tax (All type of Taxes) for 6 Months (Rs./Acre)
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	If crop sold in standing condition? (Rs./Acre)
CY.21.4	21.4	By-product price (lumpsum/Acre)

*Female (Man Day = 0.83)

* Children (Man Day = 0.3)

MT-04: FARMING HOUSEHOLD - 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
If Selected "Yes" in Q.# 22.0 then continue with Q.# 22.0.1		Otherwise go to Q.# 23.0
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
If Selected "No" in Q.# 22.0.2 then continue with Q.# 22.0.3		Otherwise go to Q.# 22.0.4
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.22.0.4	22.0.4	What is the timing of your water turn?
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
If Selected "No" in Q.# 23.1 then continue with Q.# 24.0		Otherwise go to Q.# 30.0
MT.24.0	24.0	Did you miss your water turn(s) during the last season?
	1	Yes
	0	No
If Selected "Yes" in Q.# 24.0 then continue with Q.# 24.1		Otherwise go to Q.# 25.0
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
If Selected "Yes" in Q.# 25.0 then continue with Q.# 25.1		Otherwise go to Q.# 26.0
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
If Selected "Yes" in Q.# 26.0 then continue with Q.# 26.1		Otherwise go to Q.# 27.0
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
If Selected "Yes" in Q.# 27.0 then continue with Q.# 27.1		Otherwise go to Q.# 28.0
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	Does the watercourse often clog?
	1	Yes
	0	No
If Selected "Yes" in Q.# 29.0 then continue with Q.# 29.1		Otherwise go to Q.# 30.0
FH.29.1	29.1	Select reason of clogging?
	1	Animal wallowing
	2	Mud fall
	3	Any other? Please specify
FH.30.0	30.0	Authentication by supervisor?
FH.30.1	30.1	Select form submission status?
FH.30.2	30.2	Comments of enumerator? (if any)

MT-05: INPUT PRICES - WC

DB Code	Q. #	Field Name
1. IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit
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 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)
Seedling		
IP.2.2.1	2.2.1	Seedling of Rice? (Rs./Acre)
IP.2.2.2	2.2.2	Seedling of Dates? (Rs./Acre)
IP.2.2.3	2.2.3	Seedling of Banana? (Rs./Acre)
IP.2.2.4	2.2.4	Seedling of Apple? (Rs./Acre)
IP.2.2.5	2.2.5	Sets of Sugarcane? (Rs./Acre)
IP.2.2.6	2.2.6	Seedling of Tomato? (Rs./Acre)
IP.2.2.7	2.2.7	Seedling of Chilli? (Rs./Acre)
IP.2.2.8	2.2.8	Seedling of Onion? (Rs./Acre)
IP.2.2.9	2.2.9	Seedling of Lemon? (Rs./Acre)
Land Preparation Prices		
IP.2.3.1	2.3.1	Tractor Use? (Rs./Acre)
IP.2.3.2	2.3.2	Laser Land Leveling? (Rs./Hour)
IP.2.3.3	2.3.3	Farm Yard Manure? (Rs./Trolley)
Fertilizer Prices		
IP.2.4.1	2.4.1	DAP? (Rs./Bag)
IP.2.4.2	2.4.2	Urea? (Rs./Bag)
IP.2.4.3	2.4.3	Potash? (Rs./Bag)
IP.2.4.4	2.4.4	SSP? (Rs./Bag)
IP.2.4.5	2.4.5	NP? (Rs./Bag)
IP.2.5.1	2.5.1	Tube Well Water? (Rs./Hour)

Labor		
IP.2.6.1	2.6.1	Family + PHL - Man Days? (Rs./Month)
IP.2.6.2	2.6.2	CHL - Man Days? (Rs./Day)
IP.3.0	3.0	Authentication by supervisor
IP.3.1	3.1	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.3.2	3.2	Comments of enumerator? (if any) (optional)

ANNEX-O: WATER STORAGE TANKS IMPACT 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-02: BENEFICIARIES FEEDBACK - WST

DB.#	Q.#	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit
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 Water Storage Tank ID
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.1.7	1.7	Take picture of Water Storage Tank?
		Take picture of Signboard? (In case of FCR Issued)
BF.2.0	2.0	Name of farmer?
PART-A: Before Construction		
BF.2.1	2.1	How was your application attended 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>
	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?
<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.3.5.3	3.5.3	Were any arrangements made for the protection of newly planted saplings?
	1	Yes
	0	No
EBF.3.5.4	3.5.4	Number of survived trees?
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)

MT-03: FARMING HOUSEHOLD - WST

DB Code	Q. #	Field Name
IDENTIFICATION		
ID.1.0	1.0	Select Zone/ Unit
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 Water Storage Tank ID
BENEFICIARY PROFILE		
FH.2.0	2.0	Name of Farmer?
FH.2.0.1	2.0.1	Select gender?
	1	Male
	2	Female
FH.2.0.2	2.0.2	Father's name?
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.3.0.3	3.0.3	Fallow land? (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)
FH.4.0	4.0	Select tenurial status?
	1	Owner
	2	Owner cum tenant
	3	Tenant
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		Otherwise go to Q.# 6.0
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-04: FARMING HOUSEHOLD (Crops) - WST

DB Code	Q. #	Field Name
FH.8.0	8.0	Select all Grown Crops
	1	Wheat
	2	Rice
	3	Cotton
	4	Barley
	5	Berseem/Lucern
	6	Sugarcane (Ratoon)
	7	Sugarcane (New)
	8	Sunflower
	9	Sorghum
	10	Rapeseed, Mustard, Canola
	11	Maize
	12	Mango orchard (old)
	13	Mango orchard (new)
	14	Oats or Javi or Jontari
	15	Pulses (gram)
	16	Pulses (lentil)
	17	Dates orchard (old)
	18	Dates orchard (new)
	19	Banana orchard (old)
	20	Banana orchard (new)
	21	Lemon orchard (old)
	22	Lemon orchard (new)
	23	Apple orchard (old)
	24	Apple orchard (new)
	25	Tomato
	26	Chilli
	27	Okra
	28	Onion
	29	Tobacco
	30	Rabi fodder
	31	Kharif fodder
FH.8.0.1	8.0.1	Other kharif crop name?
FH.8.0.2	8.0.2	Other Rabi crops name?
FH.8.0.3	8.0.3	Other Orchard name?
FH.8.0.4	8.0.4	Other Vegetable name?
FH.8.1	8.1	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	Ploughing - Avg. Labor per Acre? (Man Days)
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	Planking - Avg. Labor per Acre? (Man Days)
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)
Seedling		
LP.12.0	12.0	Nursery/Seedling Used - Avg. cost per operation/Acre? (Rs./Acre)
LP.12.1	12.1	Nursery/Seedling Used - Avg. Labor per Acre? (Man Days)
Uprooting & Transplanting		
LP.13.0	13.0	Uprooting, Transporting & Transplanting - Avg. cost per operation/Acre? (Rs./Acre)
LP.13.1	13.1	Uprooting, Transporting & Transplanting - Avg. Labor per Acre? (Man Days)
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	Manual Weeding - Avg. Labor per Acre? (Man Days)
Weedicides/Pesticides		
WS.15.0	15.0	Weedicides/Pesticides - Avg. No. of operation/Acre
WS.15.1	15.1	Weedicides/Pesticides - Avg. cost per operation/Acre? (Rs./Acre)
WS.15.2	15.2	Weedicides/Pesticides - Avg. Labor per Acre? (Man Days)
Farm Yard Manure (FYM)		
FY.16.0	16.0	Farm yard manure (FYM) - Avg. No. of Tractor-Trolleys/Acre
FY.16.1	16.1	Farm yard manure (FYM) including transport & Application - Avg. cost per Tractor-Trolleys/Acre? (Rs./Acre)
FY.16.2	16.2	Farm yard manure (FYM) including transport & Application - Avg. Labor per Acre? (Man Days)
Fertilizer		
FI.17.0	17.0	Urea (Bag)
		Urea Rate? (Rs./Bag)
FI.17.0.1	17.0.1	Urea - Avg. Labor per acre? (Man Days)
FI.17.1	17.1	DAP (Bag)
		DAP Rate? (Rs./Bag)
FI.17.1.1	17.1.1	DAP - Avg. Labor per acre? (Man Days)
FI.17.2	17.2	Potash (Bag)
		Potash Rate? (Rs./Bag)
FI.17.2.1	17.2.1	Potash - Avg. Labor per acre? (Man Days)
FI.17.3	17.3	SSP (Bag)
		SSP Rate? (Rs./Bag)
FI.17.3.1	17.3.1	SSP - Avg. Labor per acre? (Man Days)
FI.17.4	17.4	NP (Bag)
		NP Rate? (Rs./Bag)
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)
		Other fertilizer-1 Rate? (Rs./Bag)
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)
		Other fertilizer-2 Rate? (Rs./Bag)
FI.17.6.3	17.6.3	Other fertilizer-2 - Avg. Labor per acre? (Man Days)
Irrigation		
CI.18.0	18.0	Canal
CI.18.1	18.1	Tube well
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 (Rs./Acre)
LR.20.1	20.1	Average land Tax (All type of Taxes) for 6 Months (Rs./Acre)
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	If crop sold in standing condition? (Rs./Acre)
CY.21.4	21.4	By-product price (lumpsum/Acre)

*Female (Man day = 0.83)

* Children (Man day = 0.3)

ANNEX-P: SPOT CHECKING OF WATERCOURSES TOOL

DB Code	Q. #	Field Name
1. IDENTIFICATION		
ID.1.0	1	Select Zone/ Unit
MT.1.1	1.1	Select M&E field team
	1	Team-1
	2	Team-2
	3	Team-3
MT.1.3	1.3	Select survey date
MT.1.4	1.4	Select watercourse ID
MT.1.5	1.5	Select type of watercourse?
	1	Rectangular/Bricks
	2	Parabolic
	3	PVC and RCC pipeline
	Select improvement type of Watercourse	
	1	Regular (New)
	2	20 years old (Rehabilitation)
	3	Additional lining
MT.1.6	1.6	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 "Technical Sanction Issued" in Q.#1.2 then continue with Q.#2.1 & Covered till Q.#3.11</i>		
<i>If "ICR-1/ICR-2 Issued" in Q.#1.2 then continue with Q.#2.1 & Covered till Q.#3.24</i>		
<i>If "FCR issued" in Q.#1.2 then continue with Q.#2.1 & Covered till End</i>		
Collect the Coordinates at Mogha Point		
MT.2.1.1	2.1.1	Collect the coordinates at the Mogha point?
MT.2.1.2	2.1.2	Take picture at start of Mogha point?
Collect the Coordinates at the end of Lined Portion		
MT.2.2.1	2.2.1	Collect the coordinates at the end of lined portion?
		Take the picture while standing at the end of lined portion? (Facing towards Mogha point) without any person
		Take the picture while standing at the end of lined portion? (Facing towards the katcha portion) without any person
		Take picture of enumerator along with the Measuring Wheel's while measuring the length
Measurement Wheel Info		
		Executed/Improved lining length? (Meters)
		Take picture of measuring wheel's meter while standing at the end of lined portion
		Total Length of watercourse? (Meters)
		Take picture of measuring wheel's meter while standing at the end of katcha portion
Collect the Coordinates at the end of Katcha Portion		
MT.2.3.1	2.3.1	Collect the coordinates at the tail of katcha portion? (end point of watercourse)
		Take the picture of watercourse while standing at the end of katcha portion (Facing toward the Mogha point)
3. Rectangular/ Bricks Watercourse		
MT.3.1	3.1	Removal of vegetation from watercourse properly?
	1	Yes
	2	No
MT.3.2	3.2	Aligning according to design?
	1	Yes

	2	No
MT.3.3	3.3	Proper compaction of soil?
	1	Yes
	2	No
MT.3.4	3.4	Sanctioned discharge? (as per Irrigation Department) (LPS)
MT.3.5	3.5	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>
MT.3.5.1	3.6	Is there any additional water supply (via. tube well / lift machine) at the water-course?
	1	Yes
	2	No
MT.3.6	3.7	Select type of mogha/ outlet?
	1	Open-type
	2	Closed
	3	Closed-pipe
	4	Closed-pump
MT.3.7	3.8	Lining length is as per design?
	1	Yes
	2	No
MT.3.8	3.9	Thickness of wall is as per design?
	1	Yes
	2	No
MT.3.9	3.10	Depth of watercourse is as per design?
	1	Yes
	2	No
MT.3.10	3.11	Width of watercourse is as per design?
	1	Yes
	2	No
MT.3.11	3.12	Thickness of plaster at wall is adequate?
	1	Yes
	2	No
MT.3.12	3.13	Thickness of bed is adequate?
	1	Yes
	2	No
MT.3.13	3.14	Thickness of mortar at wall is adequate?
	1	Yes
	2	No
MT.3.14	3.15	Free board height is as per design?
	1	Yes
	2	No
MT.3.15	3.16	Back collar mortar is adequate?
	1	Yes
	2	No
MT.3.16	3.17	Select quality of plaster?
	1	Good
	2	Satisfactory
	3	Not satisfactory
MT.3.17	3.18	Select back filling of the lining portion?
	1	Good
	2	Satisfactory
	3	Not satisfactory

MT.3.18	3.19	Rehabilitation of Katcha/ earthen portion of watercourse?
	1	Full length improved
	2	Only lined portion
Structures Fixing		
MT.3.19	3.20	Controlled structures for branch watercourse?
MT.3.20	3.21	Pacca naccas in improved area?
MT.3.21	3.22	Pacca naccas in Katcha area?
MT.3.22	3.23	Culverts in improved area?
	3.24	Box culverts in improved area?
MT.3.23	3.25	Pipe culverts in improved area?
MT.3.24	3.26	Siphon in improved area?
MT.3.25	3.27	Drop structure in improved area?
MT.3.26	3.28	Wallow/buffaloes bath in improved area?
MT.3.27	3.29	Washing bay in improved watercourse?
4. Parabolic Watercourse		
MT.4.1	4.1	Removal of vegetation from watercourse properly?
	1	Yes
	2	No
MT.4.2	4.2	Sanctioned discharge (LPS)?
MT.4.3	4.3	Is there a water supply?
	1	Adequate
	2	Not adequate
<i>If 'Adequate' in Q.# 4.3 then continue with Q.# 4.5</i>		<i>Otherwise continue with Q.# 4.4</i>
MT.4.3.1	4.4	If Not adequate, Is there any additional water supply (via. tube well / lift machine) at watercourse?
	1	Yes
	2	No
MT.4.4	4.5	Select type of mogha / outlet?
	1	Open
	2	Closed
	3	Closed-pipe
	4	Closed pump
MT.4.5	4.6	Lining length is as per design?
	1	Yes
	2	No
MT.4.6	4.7	Total length of watercourse is as per design?
	1	Yes
	2	No
MT.4.7	4.8	Select quality of pre-cast parabolic segments?
	1	Good
	2	Poor
MT.4.8	4.9	Select filling of joints of the parabolic segments?
	1	Good
	2	Poor
MT.4.9	4.10	Select slop of the parabolic segments?
	1	As per design
	2	Not as per design
MT.4.10	4.11	Select back filling of Pre-Cast Parabolic Slabs?
	1	Proper
	2	Not proper
Structures Fixing		
MT.4.11	4.12	Controlled structures for branch watercourse?
MT.4.12	4.13	Pacca naccas in improved area?

MT.4.13	4.14	Pacca naccas in Katcha area?
MT.4.14	4.15	Culverts in improved area?
MT.4.15	4.16	Box culverts in improved area?
MT.4.16	4.17	Pipe culverts in improved area?
MT.4.17	4.18	Siphon in improved area?
MT.4.18	4.19	Drop structure in improved area?
MT.4.19	4.20	Wallow/buffaloes bath in improved area?
MT.4.20	4.21	Washing bay in improved watercourse?
5. PVC and RCC Pipeline Watercourse		
MT.5.1	5.1	Excavation of trenches for water supply pipelines are as per specifications?
	1	Yes
	2	No
MT.5.2	5.2	Sanctioned discharge (LPS)?
MT.5.3	5.3	Is there a water supply?
	1	Adequate
	2	Not adequate
If 'Adequate' in Q.# 5.3 then continue with Q.# 5.5		Otherwise continue with Q.# 5.4
MT.5.3.1	5.4	Is additional discharge (via. tube well / lift machine) at watercourse?
	1	Yes
	2	No
MT.5.4	5.5	Select type of mogha / outlet?
	1	Open
	2	Closed
	3	Closed-pipe
	4	Closed-pump
MT.5.5	5.6	Select kind of pipeline has been used?
	1	RCC pipe
	2	PVC pipe
	3	G-I pipe
MT.5.6	5.7	Pipeline length is as per design?
	1	Yes
	2	No
MT.5.7	5.8	Bends as per design?
	1	Yes
	2	No
MT.5.8	5.9	Sockets are as per design?
	1	Yes
	2	No
MT.5.9	5.10	Air Valves are as per design?
	1	Yes
	2	No
MT.5.10	5.11	Reducers are as per design?
	1	Yes
	2	No
MT.5.11	5.12	Flanges are as per design?
	1	Yes
	2	No
MT.5.12	5.13	Tee are as per design?
	1	Yes
	2	No
MT.5.13	5.14	Non-return valves are as per design?
	1	Yes
	2	No

MT.5.14	5.15	Cost iron sluice valve are as per design?
	1	Yes
	2	No
MT.5.15	5.16	Select quality of pipeline?
	1	Good
	2	Satisfactory
	3	Not satisfactory
Structures Fixing		
MT.5.16	5.17	Controlled structures for branch watercourse?
MT.5.17	5.18	Pacca naccas in improved area?
MT.5.18	5.19	Pacca naccas in katcha area?
MT.5.19	6.19	Culverts in improved area?
MT.6.1	6.1	Authentication by supervisor
FF.6.2	6.2	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)
FF.6.3	6.3	Comments of enumerator (if any) (optional)

ANNEX-Q: SPOT CHECKING FOR WATER STORAGE TANKS TOOL

DB.#	Q.#	Field Name
1. IDENTIFICATION		
MT.1.5	1.1	Status of Water Storage tank (WST) Construction?
	1	Technical Sanction(TS) Issued
	2	Final Completion Report (FCR) Issued
MT.1.6	1.2	Name of Farmer?
2. SPOT CHECK		
MT.2.1	2.1	Coordinates at mogha point?
MT.2.2	2.2	Take Picture of Water Storage tank (WST)?
MT.3.1	3.1	Shape of water storage tank?
	1	Trapezoidal
	2	Rectangular
	3	Brick/Masonry
	4	Geomembrane
	5	PCC
MT.3.1A	6	Any other, specify
MT.3.1.1	3.1.1	Length-1 (Feet)?
MT.3.1.2	3.1.2	Length-2 (Feet)?
MT.3.1.3	3.1.3	Width-1 (Feet)
MT.3.1.4	3.1.4	Width-2 (Feet)
MT.3.2	3.2	Depth (Feet)
MT.4.1	4.1	The farmer completed the WST using his/her own funds before subsidy?
	1	Yes
	2	No
MT.4.2	4.2	What benefits you can expect from WST
	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
MT.4.2A	7	Any other, specify
MT.4.3	4.3	The WST was completed as per approved standards and specifications?
	1	Yes
	2	No
MT.4.4	4.4	Excavation was done as per standard engineering practices?
	1	Yes
	2	No
MT.4.5	4.5	The NWM Consultants inspected the excavation and quality of geo-membrane and certified as satisfactory?
	1	Yes
	2	No
MT.4.6	4.6	Before filling the WST, the OFWM staff prepared the completion report?
	1	Yes
	2	No
MT.4.7	4.7	Any variations in specifications and material used?
	1	Yes
	2	No
MT.4.8	4.8	Subsidy was paid as per cost estimates based on geo-membrane design?
	1	Yes
	2	No

MT.4.9	4.9	Does the water depth in WST exceed 5 feet?
	1	Yes
	2	No
If "Yes" in Q.#4.9 then continue with Q# 4.9.1		Otherwise go to Q.#4.10
MT.4.9.1	4.9.1	Depth of water?
MT.4.10	4.10	Is the geo-membrane thickness minimum 0.5 mm?
	1	Yes
	2	No
MT.4.11	4.11	Do all joints weld through fusion welding?
	1	Yes
	2	No
If yes in Q#4.11 then continue with Q#4.11.1		Otherwise go to Q.#5.4
MT.4.11.1	4.11.1	Is the testing of Joints welded parts done before filling the water storage tank?
	1	Yes
	2	No
MT.4.5.1	5.1	Financial Year
MT.4.5.2	5.2	Supervisor Confirmation?
MT.4.5.3	5.3	Select Submission Status
MT.4.5.4	5.4	Comments of interviewer - (if any) (optional)

ANNEX-R: PLL MONITORING TOOLS

MTs Laser Land Leveling

Precision Laser Land Leveling	
DB.#	Questions
Identification	
1	Province?
2	Division?
3	District?
4	Tehsil?
5	Select survey date?
6	Name of Service Provider?
7	Father name
8	Contact number
9	CNIC number
10	Do you own Agriculture land?
1	Yes
2	No
<i>If selected "Yes" in Q.# 10 then continue with Q.# 11</i>	
11	Area of land? (Acres)
12	Education of the service provider?
1	Illiterate
2	Primary / Middle
3	Matric
4	Intermediate
5	Graduate
6	Masterss/Ph.D.
13	Company name providing Laser Land Levelling?
14	Make and Model of the Machine?
15	Delivery date?
Monitoring	
16	Picture of Laser Land Levelling unit?
17	Coordinates
18	The unit is in physical possession of service provider verified by ME&IE team?
1	Yes
2	No
<i>If selected "Yes" in Q.# 18 then continue with Q.# 19</i>	
19	Condition / Upkeep of the unit?
1	Good
2	Satisfactory
3	Not Satisfactory
20	reason?
1	The service provider did not allow to see the unit
2	It was told that unit was sent for Land Levelling and SP disagree to take the team at work-place
3	Any other please specify _____
21	Do you have trained operator for your equipment?
1	Yes (Operator available)
2	Yes (My Self)
3	No one is trained
22-a	The operator has been given trainings in operation of LLL

1	Yes
2	No
22-b	The operator has been given trainings in trouble shooting
1	Yes
2	No
22-c	The operator has been given trainings in Repair and maintenance
1	Yes
2	No
22-d	Define any other trainings
Feedback	
23	Quality / Durability of the unit?
1	Good
2	Satisfactory
3	Not Satisfactory
4	Do not Know
24	After sale service of the SSC?
1	Good
2	Poor
3	Very Poor
4	I did not need yet
25	Complaints attended by SSC?
1	Promptly
2	Not Promptly
3	I did not need yet
26	Rates charged by SSC to provide the after sale service?
1	Costly
2	Normal
3	I did not need yet
27	Availability of spare parts?
1	When required
2	Takes long time
3	I did not need yet
28	Price charged by the SSC for the spare parts?
1	Costly
2	Normal
3	I did not need yet
29	Spare parts are available?
1	Only with SSC
2	From open market
3	I did not need yet
Leveled Land Data	
30	Do you provide service to other farmers?
1	Yes
2	No
31	Level of record keeping?
1	Complete record
2	Partial
3	Not keeping any record
32	Method of record keeping?
1	Keeps records in log book
2	On loose papers / thing
3	Not in Writing
33	Land leveled during the last crop season (Rabi / Kharif)?

1	Own land (acres) _____
2	Other's land (acres) _____
3	Number of farmers served (No.) _____
4	Duration in months (No.) _____
34	Rates per hour?
1	Rabi (Rs.) _____
2	Kharif (Rs.) _____
35	Hours per Acre?
1	Rabi (hr.) _____
2	Kharif (hr.) _____
Impact	
If selected "No" in Q.# 10 then continue with Q.# 36	
36	Beneficiary name? (If Service Provider has no land)
37	Beneficiary's owned land?
38	Beneficiary's leveled land?
1	Rabi (Acres) _____
2	Kharif (Acres) _____
Cultivated Area	
39	Total Cultivated Area?
1	Before (Acres) _____
2	After (Acres) _____
40	Select crops
1	Wheat
2	Sugarcane
3	Rice
4	Cotton
5	Maize (Grains)
6	Vegetables
7	Other Crops
41	Crop irrigation time per acre?
1	Before (hrs) _____
2	After (hrs) _____
42	Crop yield per acre?
1	Before (mound) _____
2	After (mound) _____
43	Supervisor Confirmation?
44	Select Submission Status?
45	Comments of interviewer (if any) (optional)