IFRAP
Integrated
Flood Resilience &
Adaptation Project

Ministry of Planning
Development &
Special Initiatives

MONITORING & EVALUATION (M&E) CONSULTANT

M&E FRAMEWORK

A JOINT VENTURE OF:

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Ref: IFRAP/M&E/02
Dated: June 19, 2025

Consultancy Services for Monitoring & Evaluation of Integrated Flood Resilience and Adaptation Project (IFRAP)

(Submission of M&E Framework)

Dear Sir,

Please find enclosed the Draft Monitoring & Evaluation (M&E) Framework prepared for the Integrated Flood Resilience and Adaptation Project (IFRAP), in accordance with the terms of reference outlined in the Contract. This document has been developed in alignment with international best practices and tailored to the specific requirements of the IFRAP initiative, following a comprehensive review of project objectives, components, and stakeholder consultations.

The Framework presents a structured approach for systematic monitoring and evaluation of all components. It details the methodology, theory of change, indicator matrix, data collection protocols, reporting mechanisms, roles and responsibilities, as well as risk mitigation strategies. The framework aims to ensure transparency, accountability, and adaptive management throughout the project lifecycle, thereby facilitating the achievement of key development objectives.

We submit this draft for your kind review and feedback. Your observations and recommendations will be invaluable in refining and finalizing the framework being the alive document, to best support the effective implementation and oversight of IFRAP activities.

Thank you for your consideration, continued support and look forward to your guidance and remain available for any clarification or further discussion required.

We remain,

Yours sincerely,

Rizwan Ahmad
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1. EXECUTIVE SUMMARY

This Monitoring and Evaluation (M&E) Framework has been developed for the Integrated Flood Resilience and Adaptation Project (IFRAP), funded by the World Bank and implemented through the Federal Project Management Unit (FPMU) under the Ministry of Planning, Development, and Special Initiatives (MoPDSI), Government of Pakistan.

The framework outlines a structured approach for tracking project performance, ensuring accountability, and supporting adaptive management across multiple components, including resilient housing, community infrastructure, hydromet systems, and institutional strengthening. It adheres to international results-based M&E principles, the Logical Framework methodology, and integrates a Theory of Change aligned with the Project Development Objective (PDO).

This document defines the roles and responsibilities of key stakeholders, establishes a full suite of indicators based on the ToRs and PAD, and details the data collection and analysis plan. It incorporates custom digital tools, grievance redress tracking, geo-tagged field monitoring, and gender-disaggregated reporting to support transparent, inclusive, and efficient oversight.

A multi-tier evaluation plan has also been proposed, encompassing baseline, midline, and endline assessments, supplemented by qualitative and GIS-based spatial validations. Sample size methodology and field protocols are provided to ensure statistical reliability and local feasibility. Toolkits for baseline, social-environmental compliance, and spot-check monitoring are included in the annexes.

This M&E Framework serves as a living document to be updated based on feedback from the FPMU, World Bank, and other stakeholders. It lays the foundation for a responsive and transparent monitoring regime that supports resilient recovery in flood-affected regions of Balochistan.

2. INTRODUCTION

Pakistan has faced devastating floods throughout its history, with the 2022 floods standing out as one of the most catastrophic events in Sindh and Balochistan. Affecting millions of people, these floods caused widespread damage to infrastructure, livelihoods, and the natural environment. The event underscored the urgent need for comprehensive and sustainable measures to address the vulnerability of communities to such disasters. Balochistan, already facing poverty, food insecurity, and poor services, was severely impacted, worsening conditions for women, children, and marginalized households.

The province faced extraordinary devastation from the floods, with 305 primary health facilities destroyed and 282 damaged. Around 2,000 classrooms across 515 villages were damaged, while more than 2,222 kilometers of roads and 43 bridges were rendered impassable, isolating many communities from essential services. Housing infrastructure suffered gravely, as over 190,000 units were damaged—nearly 69,000 totally destroyed and more than 120,000 partially. The destruction extended to 456 flood protection and irrigation schemes, further compounding the region's troubles. Overall, approximately 33 million people were affected: over 13,000 kilometers of roads obliterated, 2.2 million houses damaged, 9.4 million acres of crops submerged, and 1.2 million livestock perished, all of which severely undermined rural livelihoods.

The Integrated Flood Resilience and Adaptation Project (IFRAP), funded under World Bank credit number 73330-PK, was initiated to restore essential infrastructure and services in flood-affected regions of Balochistan. It aims to improve livelihoods, enhance flood risk protection, and strengthen institutional and community resilience.

To ensure that project objectives are achieved with transparency, efficiency, and accountability, a robust Monitoring & Evaluation (M&E) system is essential. This M&E Framework outlines the approach, tools, indicators, responsibilities, and reporting structures that will guide monitoring and evaluation throughout the 26-month implementation period.

3. M&E OBJECTIVES AND SCOPE

3.1 Objectives

The primary objective of the M&E assignment is to ensure that IFRAP interventions are implemented effectively, efficiently, and transparently. Key goals include:

- Monitor progress against the Project Development Objectives (PDOs) and Intermediate Results Indicators (IRIs).
- Assess operational performance across all components including housing, infrastructure, and hydromet services.
- Provide actionable insights through data collection, validation, and analytics to guide timely decision-making.
- Establish baseline and endline assessments to measure change and impact.
- Ensure accountability and transparency by tracking grievances and stakeholder feedback.

3.2 Scope and Components

The framework comprehensively encompasses all major IFRAP components, ensuring that each area of intervention is systematically monitored and evaluated for both process and impact. It integrates physical, financial, and social performance tracking for each component, across all target districts.

3.2.1 Component 1: Rehabilitation of Community Infrastructure

This covers restoration and enhancement of roads and irrigation infrastructures, Land area with improved protection through rehabilitated flood protection infrastructure (in hectares), public spaces damaged by the 2022 floods. Progress is tracked through indicators such as kilometers of roads rehabilitated, number of flood barriers constructed or restored, improvement in community access to basic services, People with enhanced protection to flood risk (in Number), Land area benefiting from restored irrigation systems (in Hectare).

3.2.2 Component 2: Strengthening Hydromet and Climate Services

The focus is on enhancing the capacity of meteorological and hydrological services through installation of equipment, training personnel, and upgrading data management systems.

3.2.3 Component 3: Resilient Housing Reconstruction and Restoration

This component supports the rebuilding and upgrading of housing for populations impacted by floods, prioritizing durability and hazard resistance. Assessment extends to the social and economic recovery of households, including gender-disaggregated impacts and the restoration of livelihoods.

3.2.4 Component 5: Project Management, Institutional Strengthening and Technical Assistance

This cross-cutting component ensures robust project coordination, capacity building, and adherence to accountability mechanisms, including M&E itself. Performance is assessed both at the central project management unit and in decentralized/field operations across all target areas.

4. THEORY OF CHANGE

The **Theory of Change (ToC)** functions as the strategic backbone of the project, mapping out the essential pathways by which targeted interventions are expected to achieve lasting development outcomes for flood-affected communities. Serving as both a conceptual model and a practical guide, the ToC lays out the causal links between project activities and their anticipated impact, forming the basis for the Logical Framework and the design of indicators. By clearly articulating how each component and its associated actions contribute to overarching objectives, the ToC not only guides intervention strategies but also anchors the entire monitoring, evaluation, and adaptive management process throughout the project cycle.

4.1 Theory of Change Component 1:

The rehabilitation and improvement of critical Community Infrastructure, such as local roads, flood protection systems, irrigation networks, and public spaces, will directly enhance mobility, facilitate access to essential services, and strengthen community resilience to future flood events. By systematic restoration / rehabilitation of these damaged assets the component aims to accelerate economic recovery, improve the beneficial use of water to enhance community resilience, protect the population and their assets against future floods, reduce land degradation and promote social cohesion in flood-affected and vulnerable areas.

Specifically, the restoration and improved functioning of existing flood control and irrigation schemes in flood- and flash flood-prone regions will help reduce surface runoff, increase groundwater recharge, and mitigate the destructive impacts of future flooding. The objective is to enhance physical connectivity, agricultural productivity, and climate resilience in flood-affected regions.

- Inputs include engineering designs, damage inventories, PIU technical staff, and environmental/social safeguard protocols.
- Through Activities such as scheme verification, prioritization, field-level implementation monitoring, and beneficiary feedback collection, the project ensures context-responsive execution.
- These efforts result in Outputs such as validated restoration plans, verified physical progress (e.g., kilometers of rehabilitated structures), and satisfaction reports from local communities.
- The Outcomes include restored access to farmlands and markets, reduced travel time, improved agricultural efficiency, and stronger community confidence in recovery systems.
- Ultimately, the Impact is a sustained recovery marked by improved mobility, productivity, and resilience against future climate-induced shocks.

This causal chain guides real-time monitoring and informs decision-making to ensure infrastructure investments contribute directly to livelihoods, safety, and social cohesion.

4.2 Theory of Change Component 2:

Strengthening Hydromet and Climate Services, the ToC envisions that investments in meteorological and hydrological equipment, training, and data systems will enable more accurate and timely weather forecasts, early warning dissemination, and risk information delivery. Enhanced capacity in these services is anticipated to reduce vulnerability, empower local decision-making, and support disaster preparedness at both institutional and community levels.

- Inputs include installation-ready hydromet equipment, capacity-building plans, institutional mandates, and partnerships with national and provincial disaster management authorities.
- Activities include site selection and commissioning of hydromet stations, training of technical staff, configuration of data-sharing platforms, and formulation of standard operating procedures (SOPs) for early warning.
- The resulting Outputs are fully operational hydromet installations, trained local stakeholders, reliable forecast dissemination tools, and protocols for real-time alerts.
- Outcomes include increased lead time for flood response, enhanced confidence in public alerts, and institutional readiness for rapid decision-making at local and provincial levels.
- The long-term Impact is reduced vulnerability of flood-prone communities and improved climate resilience across sectors due to timely, trusted risk information.

This chain supports a proactive disaster risk reduction system, where timely hydromet data flows are transformed into protective action and long-term planning.

4.3 Theory of Change Component 3:

Resilient Housing Reconstruction and Restoration, the ToC links the rebuilding and upgrading of flood-damaged housing to the restoration of household stability, safety, and economic recovery. Prioritizing durable, hazard-resistant designs, the activities address not only immediate shelter needs but also longer-term resilience, integrating social inclusion and gender-responsive measures to ensure equitable recovery.

- Inputs include beneficiary lists, damage classifications, disbursement mechanisms, housing typologies, grievance redress platforms, and HRU guidelines.
- Activities involve community mobilization, VRC (Village Reconstruction Committee) facilitation, disbursement of tranches upon progress verification, grievance registration and redress, and training on construction best practices.
- Outputs include completed core houses with disaster-resilient features, operational VRCs, grievance redress cases resolved, and pictorial monitoring records of progress stages.
- Outcomes include restored housing stability, improved structural safety of homes, enhanced community trust in reconstruction efforts, and increased household resilience to future hazards.
- The broader Impact is safe resettlement, gender-equitable recovery, and long-term stability for households vulnerable to climate shocks and displacement.

This framework ensures that reconstruction is not just a technical or financial intervention but a process that empowers communities to recover with dignity, safety, and voice.

4.4 Theory of Change Component 5:

Project Management, Institutional Strengthening, and Technical Assistance, the ToC recognizes that effective governance structures, robust coordination, and capacity-building efforts are essential for the successful implementation and sustainability of project outcomes. By ensuring accountability, enhancing institutional capabilities, and supporting decentralized operations, this component underpins the achievement of all other component objectives.

- Inputs include project staffing, institutional roles, financial resources, MIS/PMIS architecture, and monitoring and evaluation (M&E) protocols.

- Activities involve operationalization of MIS and PMIS platforms, training of PIU staff, data digitization, third-party validations, M&E reporting, and stakeholder consultations.
- Outputs include fully functional MIS/PMIS systems, real-time dashboards, consolidated M&E reports, timely disbursement tracking, and evidence-based decision support for PIUs and FPMU.
- Outcomes include enhanced project governance, timely problem-solving, streamlined inter-agency coordination, and improved responsiveness to field realities.
- The long-term Impact is strengthened institutional capacity, transparency in fund utilization, and sustained accountability throughout the project lifecycle.

This component provides the backbone for project performance, ensuring all interventions are tracked, reported, and aligned with national standards for resilience and reform.

Altogether, the Theory of Change articulates a cohesive and results-driven framework. It maps how targeted inputs and activities across Components 1, 2, 3, and 5 translate into measurable outputs, which in turn contribute to improved mobility, restored housing stability, enhanced flood risk protection, and stronger institutional performance.

By reinforcing the logical flow from field-level interventions to systemic resilience outcomes, this framework underpins both implementation strategy and the monitoring and evaluation system. It serves as a guide for adaptive management throughout the project lifecycle.

The revised Theory of Change—reflecting the exclusion of non-relevant components—is illustrated in **Figure-1.**

Theory of Change					
Components	**Inputs**	**Activities**	**Outputs**	**Outcomes**	**Impact**
General / Cross-Cutting Inputs	World Bank financing	Mobilization and onboarding of the M&E consultant team	Consultant team mobilized and operational at federal and PIU levels	Strengthened coordination between consultant, PMIU, and PIUs	Strengthened institutional frameworks for disaster response and transparency
	Government of Balochistan facilitation (coordination with PIUs)	Orientation sessions with FPMIU and PIUs	Stakeholder engagement and reporting mechanism established	Enhanced evidence-based decision-making through integrated PMIS dashboards	Evidence-based planning becomes standard across flood recovery programs
	Project Appraisal Document (PAD) and approved TORs	Establishment of PMIS and integration roadmap	PMIS structure and integration roadmap documented	Stakeholder voices reflected in planning through functional GRM system	Public confidence in provincial reconstruction systems increases
	PMIU setup and guidelines	Stakeholder engagement planning and communication	Initial baseline and M&E formats finalized	Increased transparency and timely data reporting across all components	
	Consultant mobilization (M&E team, technical staff)	Coordination with existing GRM platforms and alignment of data formats			
	Framework for stakeholder engagement and grievance redress				
Component 1 – Community Infrastructure Rehabilitation	Engineering designs for irrigation and road restoration	Verification and validation of irrigation and road infrastructure damage	Verified inventory of damaged irrigation and	Communities regain reliable access to essential	Communities experience sustained recovery through restored infrastructure

			road infrastructure	services (irrigation, roads)	
	Inventory of damaged canals, bunds, and rural roads	Prioritization and scheduling of rehabilitation works	Prioritized and scheduled restoration plans approved by PIUs	Enhanced agricultural productivity due to restored irrigation systems	Improved agricultural and market access supports rural livelihoods
	Technical staff at PIUs for oversight	Monitoring field-level implementation of irrigation and road restoration	Field monitoring reports and physical verification spot-checks completed	Reduced travel time and transport disruptions in targeted areas	Long-term resilience to flood-related damage enhanced
	Environmental and social safeguard compliance protocols	Spot-checks and physical verification of infrastructure outputs	Number of kilometers of irrigation channels, flood bunds, and roads rehabilitated	Improved community confidence in government-led reconstruction	
		Collection of beneficiary-level feedback on restored infrastructure access	Beneficiary satisfaction summaries on restored access		
Component 2 – Hydromet and Climate Services	Existing institutional base: PMD, Irrigation Dept., PDMA	Technical assessment of existing AWS and radar systems	Existing forecasting infrastructure (AWS/radar) assessed and upgraded	Increased lead time and accuracy of flood forecasts	Communities better protected from future flood events through timely alerts
	Hydromet infrastructure (legacy systems, AWS, radar maps)	Design and deployment of improved early warning system components	New early warning equipment installed at agreed sites	Improved readiness of PIUs and local governments to issue early warnings	Institutionalization of hydromet services across Balochistan
	Technical specs for new forecasting models	Capacity building for PMD and PIU technical teams	Forecast integration completed into PMIS platform	Reduced human and asset losses during seasonal climate events	Climate-informed planning reduces vulnerability in high-risk districts
	Capacity-building plans for early warning dissemination	Integration of real-time forecast data into the PMIS platform	PMD and PIU staff trained on data management and alerts	Institutional capacity of PMD and PIUs strengthened	
		Testing dissemination chains for flood alerts (SMS, web, radio)	Alert dissemination system piloted with end users		
Component 3 – Housing Reconstruction	PIU-HRU team and GRM mechanism (already operational)	Field verification of eligible beneficiaries for housing grants	Eligible housing beneficiaries validated and registered	Vulnerable households have safe, resilient shelter	Vulnerable families live in safer, more resilient homes
	Grant disbursement framework and eligibility criteria	Monitoring construction stages: foundation, plinth, roof level, completion	Construction progress recorded at all 4 stages (foundation to completion)	Beneficiaries receive timely and verified housing grants	Reduced future disaster risk for flood-affected populations
	Structural design standards and site-level mapping	Assessment of technical assistance delivery at community level	Technical assistance records and beneficiary feedback documented	Women and vulnerable groups benefit from inclusive housing support	Equity in post-disaster support contributes to social stability
	Pre-listed TA/contractor panels for reconstruction support	GRM data capture and resolution tracking through HRU's platform	GRM entries logged via Component 3 platform and linked to PMIS	TA recipients adopt resilient construction practices	

		Collection of gender-disaggregated data on grant and TA recipients			
Component 5 – Project Management, MIS & Transparency	PMIS development team (consultant-side)	Development of PMIS architecture, modules, and dashboards	PMIS modules developed for tracking all indicators and reporting	Timely and accurate monitoring of project activities across components	Institutional capacity for real-time monitoring institutionalized in GoB
	Existing and planned GMIS platforms	Integration of Component 3's existing GRM system with PMIS	GRM system designed for Components 1, 2, and 5	Grievances are resolved efficiently with improved accountability	Long-term accountability mechanisms established for future investments
	Interoperability protocols for dashboard integration	Design and rollout of GRM systems for Components 1, 2, and 5	Component 3 GRM system successfully integrated into PMIS	PMIU and PIUs use dashboards for real-time decision-making	Citizen engagement and transparency models replicated in other sectors
	Communication protocols for grievance intake	Deployment of PMIS-trained resources at each PIU	Functional dashboards deployed at PIU and FPMU level	Public trust and credibility of the project enhanced	
		Real-time KPI reporting and analytics linked with field activities	GRM performance tracked via defined KPIs (resolution rate, escalation, etc.)		

Figure-1: Theory of Change

5. RESULTS-BASED M&E FRAMEWORK

The Results-Based Monitoring and Evaluation Framework (RBMEF) for the IFRAP project serves as a comprehensive tool designed to systematically monitor progress, assess effectiveness, and ensure accountability throughout the duration of the project. By establishing clear linkages between project inputs, activities, outputs, outcomes, and eventual impacts, the framework delivers a coherent roadmap for tracking and achieving the intended results across all components.

This RBMEF is structured to support evidence-based performance management and will enable project stakeholders to make data-driven decisions, identify challenges early, and adapt strategies as needed to maximize positive outcomes. The framework will not only track the immediate delivery of project interventions—such as the rehabilitation of infrastructure, the strengthening of hydromet and climate services, and the reconstruction of resilient housing—but also will examine how these outputs contribute to broader development objectives, including improved community livelihoods, enhanced access to essential services, and strengthened flood risk protection.

Transparency is an essential aspect of this Results-Based Monitoring and Evaluation Framework (RBMEF), guaranteeing that progress and outcomes are consistently communicated to all stakeholders, including implementing agencies, and affected communities. This framework also incorporated mechanisms for regular feedback and learning, fostering an environment of continuous improvement and adaptive management.

In short, this RBMEF is closely aligned with the Project Development Objective: "to improve livelihoods and essential services and enhance flood risk protection in selected communities affected by the 2022 floods." By systematically linking project activities to measurable outcomes and long-term impact, the framework provides a robust foundation for both accountability and sustainability, ensuring that interventions achieve their intended results and deliver lasting benefits to communities.

The following are the main features/ingredients of RBMEF:

5.1 Structure and Logic

The framework uses a tiered indicator system drawn from the PAD, with disaggregated results indicators applied to the following core project components:

- **Component 1:** Community Infrastructure Rehabilitation
- **Component 2:** Strengthening Hydromet and Climate Services
- **Component 3:** Resilient Housing Reconstruction and Restoration
- **Component 5:** Project Management, TA, and Institutional Strengthening

5.2 Project Development Objectives (PDO) Indicators

Indicator	Description
Attained Improved Livelihoods	An increase in Income or assets
Essential Services Accessed	Shelter, irrigation, water supply and sanitation, and transport
Enhanced Flood Risk Protection	Increased coverage of flood protection infrastructure, reliable flood forecasting, and early warning system.

Reliable Forecasting	A longer led time for weather forecasting.

5.3 Intermediate Results Indicators

- **Infrastructure**

Indicator	Description
Hectares of Land benefitting	Hectares of Land Benefitting from irrigation system restoration.
Kilometers of Roads Rehabilitated	Total kilometers of roads rehabilitated to better withstand future flood events.
Hectares of Land benefitting	Hectors of Land benefitting from Protection infrastructure rehabilitation.
Critical Infrastructure Upgraded	Number of critical infrastructures (such as water supply systems) upgraded for enhanced resilience.

- **Hydromet Services**

Indicator	Description
Operational Hydromet Stations	Number of Weather radars Installed.
Improved Accuracy of Weather Forecasts	Number of Automatic Weather Station installed
Hydrological Modelling established	Functionality of early warning system.

- **Housing Units**

Indicator	Description
Resilient Housing Units Constructed	Number of resilient housing units constructed or rehabilitated. (Percentage of Women)

- **Project Management and Institutional Strengthening**

Indicator	Description
Improved Project Management Efficiency	Number of Plans for flood resilience by the community developed.
River Basin Studies	Number of River Basin planning Studies for developing framework for water management.

- **Citizen Engagement Indicators**

Indicator	Description
Enhanced Citizen Participation	Citizen engagement study implementation
Improved Feedback Mechanism Utilization	Percentage of grievance resolved satisfactorily

5.4 Result Framework

S #	Indicator Name	End Target
1	Households with improved livelihoods (Number)	80,000
2	Of which female-headed households and households with vulnerable women (Percentage)	40
3	People regaining access to at least one essential service (Number)	1,500,000
4	Females regaining access (Percentage)	50
5	People with enhanced flood risk protection (Number)	1,800,000
6	Females protected (Percentage)	50
7	Increase in weather forecast lead time of PMD (Days)	5

S #	Indicator Name	End Target
1	Land area benefitting from restored irrigation systems (Hectare (Ha))	50,000
2	Land area with improved protection through rehabilitated flood protection infrastructure (Hectare (Ha))	50,000
3	Length of rehabilitated roads (Kilometers)	20
4	Rehabilitated water supply schemes (Number)	40
5	Restored small community facilities (Number)	40
6	Weather radars installed and operationalized (Number)	4
7	Automatic Weather Stations (AWS) installed and operationalized (Number)	300
8	Hydrological modelling based early warning system established for hill torrents in Balochistan (Yes/No)	Yes
9	Housing units restored/reconstructed (Number)	35,100
10	of which female headed households and households with vulnerable women (Percentage)	25
11	Watershed area under climate-resilient practices (Hectare)	20,000
12	Households receiving livelihood support (Number)	80,000
13	Community flood resilience plans prepared (Number)	20
14	River basin planning studies (Number)	3
15	Citizens' Engagement Strategy developed and rolled out (Text)	Citizens' Engagemen tStrategy developed and rolled out

16	Registered grievances satisfactorily resolved in line with the GRM (Percentage)	100

5.5 Monitoring Protocols

To ensure systematic, high-quality data collection, reporting, and adaptive use of results, the following five-tiered M&E protocol structure will guide all activities conducted by the M&E firm:

5.5.1 M&E Exercise Management Protocols

- Develop detailed M&E calendar aligned with project milestones.
- Define roles and responsibilities across field teams.
- Ensure tool finalization, software readiness, and digital pre-testing.
- Coordinate regular planning meetings with implementation partners.

5.5.2 M&E Exercise Field Planning Protocols

- Identify sample sites/villages based on approved sampling strategy.
- Mobilize field teams (enumerators, supervisors) with appropriate training.
- Ensure that logistics, travel plans, community entry protocols, and GRM awareness are in place.
- Secure consent for data collection and stakeholder engagement.

5.5.3 M&E Exercise Field Operation Protocols

- Execute baseline, spot check, and endline visits using digital tools with GPS/photo capture.
- Implement quality control through supervisor back-checks and random re-verification.
- Use checklists and standardized questionnaires across.
- Address on-ground issues in real time and coordinate with PIUs where escalation is required.

5.5.4 M&E Post-Field Protocols

- Upload data securely to PMIS.
- Conduct cleaning, flagging of inconsistencies, and data verification.
- Generate field visit summaries and submit compliance briefs to FPMU.
- Initiate internal review and prepare draft M&E reports for validation.

5.5.5 M&E Data Audit Protocols

- Apply layered validation techniques (spot audit, cross-verification with PIUs).
- Maintain metadata logs (timestamps, GPS, enumerator IDs) for traceability.
- Conduct periodic quality assurance reviews by M&E specialists.
- Document lessons learned and integrated into the next round of planning.

This protocol system ensures a harmonized and transparent approach to M&E operations, while also building PIU capacity to sustain quality assurance and learning throughout the IFRAP project cycle.

5.6 Disaggregation

To ensure meaningful analysis of equity, inclusivity, and implementation performance, all data collected under the M&E Framework will be disaggregated as follows, organized by component:

Component 1 – Community Infrastructure Rehabilitation

- By Scheme Type: Irrigation, roads, flood protection, culverts
- By Geography: e.g. District
- By Site Condition: Fully damaged, partially damaged, rehabilitated
- By Construction Stage: Planned, in-progress, completed

Component 2 – Hydromet and Climate Services

- By Station Type: Meteorological, hydrological, telemetry-equipped
- By Province & PIU Jurisdiction: Quetta, Naseerabad, Lasbela, etc.
- By Functionality Status: Operational, inactive, under repair
- By Staff Trained: Gender, designation, institution

Component 3 – Resilient Housing Reconstruction

- By Housing Type: Fully destroyed vs. partially damaged
- By Beneficiary Profile: Gender of head of household, vulnerability
- By VRC Affiliation: Villages with/without active VRCs
- By Construction Progress: Foundation, plinth, roofing, completed
- By GRM Interaction: No complaint, complaint resolved, pending

Component 5 – Project Management, MIS & Transparency

- By Complaint Type (GRM): Construction quality, payment, selection, other
- By Response Timeliness: <7 days, 7–15 days, >15 days
- By PIU / District: To identify coordination or capacity gaps
- By PMIS Entries: Completed, missing, duplicate

This structured disaggregation enables consistent and targeted reporting, supports equitable tracking, and strengthens the analytical power of the M&E system.

5.7 Use of Digital Tools

- **Geo-referenced PMIS Dashboard:** Real-time data visualization by component
- **Mobile-based Enumerations:** Data collection via Android app
- **Integrated APIs:** Connection to PIUs and FPMU systems

6. LOGICAL FRAMEWORK MATRIX (LOGFRAME)

This Logical Framework (Logframe) Matrix serves as a comprehensive blueprint and outlines the hierarchy of objectives, performance indicators, means of verification, and key assumptions/risks for the effective monitoring and evaluation of IFRAP implementation across all project components.

The M&E systems at IFRAP are formulated based upon the project's log-frame and will be an important tool in project design and management, mapping the multiple levels of objectives and associated results (measured through indicators) in the short, medium, and long term. Indicators are units of measure that will determine whether the objectives formulated in the log-frame have been achieved.

The matrix below summarizes standard log-frame objectives and results, and the types of indicators used to measure them, which form the basis of a project M&E system and plan. The expanded explanation will clarify each segment's purpose and connection, emphasizing how the Logframe and M&E system collaboratively ensure that IFRAP's objectives are measurable, adaptable, and ultimately achievable.

6.1 Logframe Matrix

This Logical Framework (Logframe) Matrix outlines the hierarchy of objectives, performance indicators, means of verification, and key assumptions/risks for the effective monitoring and evaluation of IFRAP implementation across all project components.

The M&E systems at IFRAP will be formulated based upon the project's logical framework (log-frame), which is a type of program logic model. A log-frame is an important tool in project design and management, mapping the multiple levels of objectives and associated results (measured through indicators) in the short, medium, and long term. Indicators are units of measure that determine whether the objectives formulated in the log-frame have been achieved.

The matrix below summarizes standard log-frame objectives and results, and the types of indicators used to measure them, which form the basis of a project M&E system and plan.

Project Development Objective (PDO) Level Results	Indicators (with Baseline and Target)	Means of Verification	Critical Assumptions / Risks
Goal / Impact: Strengthened resilience of flood-affected communities in Balochistan.	% reduction in average annual economic losses from flood damage in targeted districts (Baseline: TBD, Target: TBD%)	Impact evaluations, PDMA databases, disaster loss modeling tools	No large-scale climate shocks during implementation; consistent government engagement
PDO 1: Improved Livelihoods	Number of households with restored access to income sources (Baseline: TBD, Target: TBD)	Baseline/Endline surveys, FGD reports	Livelihood interventions are well-targeted and supported by local systems
PDO 2: Essential Services Restored	Proportion of households with access to essential services (Baseline: TBD, Target: 70%)	Community surveys, MIS data	Essential service infrastructure is timely completed and functional

PDO 3: Enhanced Flood Risk Protection	% reduction in flood-affected population due to protection measures (Baseline: TBD, Target: 30%)	Impact assessments, hydrological studies	Flood control infrastructure is not compromised by new extreme events
PDO 4: Reliable Forecasting	% accuracy and reach of flood early warning messages (Baseline: TBD, Target: TBD)	PDMA early warning system reports	PMD systems remain functional; communities can access alerts
Intermediate Outcome – Infrastructure: Hectares of Land Benefitting	Total hectares benefitting from improved irrigation and protection (Baseline: 0, Target: TBD)	Engineering progress reports, PIU records	Land rights and irrigation channels are usable
Intermediate Outcome – Infrastructure: Kilometers of Roads Rehabilitated	Km of roads rehabilitated to all-weather standards (Baseline: 0, Target: TBD)	PIU documentation, contractor logs	No delays in material procurement or weather disruptions
Intermediate Outcome – Infrastructure: Community Facilities Restored	Number of restored facilities (Baseline: 0, Target: TBD as per revised scope)	Verification and technical audit reports	Local authorities support facility restoration
Intermediate Outcome – Infrastructure: Critical Infrastructure Upgraded	No. of critical infrastructure sites upgraded (Baseline: 0, Target: TBD)	Infrastructure completion certificates	Technical standards are followed by contractors
Intermediate Outcome – Hydromet: Operational Hydromet Stations	Number of operational automated hydromet stations (Baseline: TBD, Target: TBD)	PMD installation records, third-party validation	Timely procurement and technical integration
Intermediate Outcome – Hydromet: Improved Accuracy of Weather Forecasts	Forecast accuracy improvement compared to 2022 levels (Target: 20% increase)	Forecasting accuracy logs, model simulations	Sustained capacity-building at PMD and PIUs
Intermediate Outcome – Hydromet: Hydrological Modelling Established	Model used for real-time flood forecasting (Baseline: No model, Target: Operational model)	Model test runs, integration logs	Sufficient data inputs and technical support
Intermediate Outcome – Housing: Resilient Housing Units Constructed	Number of houses reconstructed to resilient standards (Baseline: 0, Target: 35,100)	Project MIS, spot checks	No land disputes or contractor defaults
Intermediate Outcome – Project Mgmt: Improved Project Management Efficiency	Reduction in delays and bottlenecks in inter-PIU coordination (Baseline: TBD, Target: TBD% improvement)	Performance review reports, coordination meeting minutes	PIUs adhere to improved SOPs

Intermediate Outcome – Project Mgmt: River Basin Studies Completed	Completion and validation of River Basin study report (Baseline: Not initiated, Target: Completed)	Consultant reports, stakeholder validation	Sufficient budget and coordination with external agencies
Intermediate Outcome – Citizen Engagement: Enhanced Citizen Participation	Percentage of project activities informed by community input (Target: TBD%)	FGDs, monitoring reports	Communities actively engaged and represented
Intermediate Outcome – Citizen Engagement: Improved Feedback Mechanism Utilization	Percentage of grievances received and resolved (Target: ≥90%)	GRM system records, dashboard analytics	GRM is actively used and PIUs respond timely
Number of flood-affected houses reconstructed to climate-resilient standards.	35,100 houses reconstructed (Baseline: 0, Target: 35,100)	Project MIS, field verification reports, geo-tagged images	Adequate contractor performance; unimpeded site access
Number of households benefitting from improved hydromet and early warning services.	80,000 households receiving actionable flood alerts (Baseline: TBD, Target: 80,000)	Survey results, alert dissemination logs, PDMA communication records	Functional PDMA dissemination systems; community connectivity
Number of community infrastructure schemes rehabilitated and functional.	300+ infrastructure schemes restored (Baseline: 0, Target: TBD)	Engineering progress reports, third-party spot-checks	Availability of materials and skilled labor; timely approvals
% of grievances received and resolved through the established GRM.	≥90% of grievances resolved within defined timeframe (Baseline: TBD, Target: 90%)	GRM dashboards, complaint logs, resolution audit reports	Active grievance monitoring by PIUs; technical functionality of GRM
Enhanced capacity of PMD and PDMA to generate and disseminate flood forecasts.	Functional flood forecasting tools in place; 100 staff trained (Baseline: Limited tools, Target: Full operational coverage)	Training attendance sheets, operational logs, evaluation forms	Stable institutional setups; sustained technical assistance
Improved community access to reconstructed roads and irrigation systems.	At least 250,000 people with restored access to infrastructure (Baseline: 0, Target: 250,000)	Household surveys, GPS tracking of access routes	No delays due to weather or logistical barriers
Operational MIS system used for real-time progress tracking by all PIUs.	MIS operational with >95% data entry compliance from PIUs (Baseline: 0, Target: 95%)	MIS backend, user logs, PIU compliance reviews	PIU technical capacity and continuity of trained staff
Beneficiary satisfaction rate with project-supported reconstruction.	≥80% of surveyed beneficiaries report satisfaction with housing reconstruction (Baseline: TBD, Target: 80%)	Post-construction household surveys, qualitative feedback tools	Timely and fair distribution of grants; inclusive beneficiary engagement

6.2 Indicator Alignment with Project Components

This section ensures that each main project component is aligned with specific logframe indicators, which provides a clear pathway from high-level goals to measurable results:

Indicator	Result Level	Definition & Scope	Disaggregation	Unit of Measurement	Data Collection Method	Frequency	Source / Tool
% reduction in average annual economic losses from flood damage	PDO	Measures decline in flood-related losses in economic terms across targeted districts	District	Percent	Impact evaluation, PMD data	Endline	Impact Evaluation Framework
Number of households with restored access to income sources	PDO	Households reporting return to income-generating activities post-project	District, income type	Count	Baseline/Endline survey, FGDs	Baseline and Endline	Survey Tool
Proportion of households with access to essential services	PDO	Share of population reporting access to water, health, education, electricity	District, service type	Percent	Household surveys, MIS	Baseline and Endline	Survey Tool
% reduction in flood-affected population due to protection measures	PDO	Percent change in exposed population in project locations with protection schemes	District, intervention type	Percent	Baseline/Endline survey	Endline	Survey Tool
% accuracy and reach of flood early warning messages	PDO	Forecast accuracy and delivery to target communities	Province, dissemination channel	Percent	PMD reports	Quarterly	Hydromet Logs
Hectares under improved irrigation	IR	Land benefitting from rehabilitated	District, scheme type	Hectares	Baseline/Endline survey, Monitoring	Quarterly	Survey & Spot Check Tool

and protection		irrigation/flood protection					
Km of roads rehabilitated	IR	Length of roads restored to all-weather standard	District, road type	Kilometers	Verification & Monitoring reports	Quarterly	Spot Check Tool
No. of critical infrastructure sites upgraded	IR	Assets upgraded for climate resilience (culverts, bridges, etc.)	District, infrastructure type	Count	Verification & Monitoring reports	Quarterly	Spot Check Tool
Number of operational hydromet stations	IR	Stations reporting and integrated into warning systems	Station type, location	Count	PMD reports, Monitoring	Monthly	Hydromet Monitoring Sheet
Forecast accuracy improvement vs 2022	IR	Quantified gain in forecast precision	Event type	Percent	Baseline/Endline survey	Quarterly	Survey Tool
Hydrological model operational	IR	Deployment of real-time hydrological model for flood prediction	Province	Binary	System logs, Monitoring	Biannual	Spot Check Tool
No. of houses reconstructed to resilient standards	IR	Fully or partially destroyed houses rebuilt to spec	Gender, damage type	Count	MIS, field checks	Monthly	Housing Spot Check
Beneficiary satisfaction with reconstruction	IR	Share of surveyed beneficiaries satisfied with housing quality	District, gender	Percent	Endline surveys	Endline	Survey Tool
River Basin study completed	IR	Final validated report delivered	Basin	Binary	Consultant report, validation record	Once	Study Log
Operational MIS system	IR	MIS active and used by PIUs with >95% compliance	PIU	Percent	System backend	Monthly	MIS Reports
% of grievances resolved	IR	GRM cases resolved within agreed timeline	Issue type, PIU	Percent	GRM dashboard	Quarterly	GRM Tracker

% of project activities informed by community input	IR	Degree of CE in design/implementation	Component, location	Percent	FGD reports	Quarterly	Engagement Tracker

6.3 Use and Review of Logframe

The Logframe is a living document, guiding project execution and adaptation:

- **Review Frequency:** The Logframe will be reviewed quarterly during joint Monitoring & Evaluation (M&E) and Federal Project Management Unit (FPMU) sessions to ensure it remains relevant and aligned with project realities.
- **Adjustments:** Any changes to indicators, targets, or underlying assumptions will be formally recorded in an addendum, subject to approval by both the FPMU and the World Bank. This process ensures transparency and adaptability.
- **Integration:** The Logframe Matrix is integrated directly into the PMIS dashboard, enabling automated progress tracking and real-time monitoring for proactive management and timely decision-making.

7. DATA COLLECTION AND ANALYSIS PLAN

An effective Monitoring and Evaluation (M&E) system is built upon a carefully designed data collection and analysis plan tailored to the needs and context of the project. Within the IFRAP initiative, this plan is essential for ensuring that every relevant piece of information—spanning both quantitative metrics and qualitative insights—is gathered methodically and with accuracy. The process doesn't end at data collection: all data undergoes thorough validation and analysis, transforming raw information into meaningful findings.

These insights become the foundation for informed, evidence-based decision-making among project leaders and stakeholders at both the federal and provincial levels. By implementing such a comprehensive approach, the team is empowered to monitor progress in real time, swiftly identify challenges, and adjust strategies to maintain alignment with project goals. Ultimately, the data collection and analysis plan serve as a critical bridge between on-the-ground realities and strategic oversight, fostering adaptive management and greater accountability throughout the project lifecycle.

7.1 Objectives of Data Collection

The overarching objectives of collecting data within the project framework are multifaceted and essential for ensuring the successful achievement of project goals. Each objective plays a vital role in enabling systematic monitoring, adaptive decision-making, and transparent reporting throughout the project lifecycle. The collected data serves as the foundation for the Project Management Information System (PMIS) dashboards and regular progress reports. These tools provide real-time visibility into project performance, facilitate transparent communication among stakeholders, and support timely interventions when issues are detected.

Through these objectives, the data collection process ensures a structured and responsive approach to project management, fostering continuous improvement and enabling the team to deliver measurable, meaningful results.

- Measure progress against PDOs and IRIs defined in the RFP and PAD.
- Capture baseline, and endline values for key indicators.
- Support evidence-based planning, adaptive management, and accountability.
- Generate inputs for PMIS dashboards and progress reports.

7.2 Data Types and Sources

To ensure a robust monitoring and evaluation process, the IFRAP initiative categorizes data collection into distinct types, each fulfilling a unique role in capturing the multifaceted progress of the project. Understanding the nuances of these data types and their corresponding sources is critical for achieving comprehensive and actionable insights.

Data Type	Examples	Source
Quantitative	Number of households supported, number of irrigation schemes and km of road restored / rehabilitated, alerts issued	Surveys, project records, PMIS data
Qualitative	Community satisfaction, gender participation, quality of services	FGDs, KIIs, observational checklists
Administrative	Budget utilization, staffing, procurement	PIU and FPMU reports

Geo-spatial	Site coordinates, disaster exposure, housing cluster locations	GIS-enabled surveys, satellite data, Google Maps
Grievance Data	Nature and resolution of complaints, response time	GRM PMIS and grievance logbook

7.3 Data Collection Tools and Frequency

This section outlines the various instruments and methodologies that will be used to systematically gather, record, and analyze data throughout the project lifecycle. By specifying each tool's purpose and the intervals at which data will be collected, the framework ensures both the consistency and reliability of information.

Tool	Purpose	Frequency
Baseline Survey Instruments	Establish pre-intervention benchmarks	Within first 60–90 days
Digital Field Monitoring App	Track real-time field activities	Continuous
Housing Inspection Checklist	Assess compliance with construction standards	Monthly
Beneficiary Feedback Forms	Capture household-level perceptions	Quarterly
Key Informant Interviews	Gather contextual insights from stakeholders	Biannually or as needed
Focus Group Discussion Guide	Engage communities in participatory review	Midline & endline

All surveys and forms will be digitized for mobile-based data entry, including GPS tagging and timestamping.

7.4 Enumerators and Field Staff Mobilization

To ensure rigorous and reliable data collection, a systematic approach will be adopted for the mobilization of enumerators and field staff. Recruitment will focus on identifying individuals with prior experience in survey administration, community engagement, and digital data entry.

By deploying a well-prepared and well-supervised field team, the M&E consultant will ensure that data collection remains consistent, accurate, and responsive to the evolving needs.

- A pool of **trained enumerators** (3–4 per district) will be deployed under the supervision of a regional **M&E Specialist**.
- Staff will be equipped with:
    - Tablets preloaded with Open Data Kit (ODK) forms
    - Location-tagged visual capture tools (photo/video)
    - Field protocols including consent and safety guidelines

Enumerators will receive structured training on indicator definitions, form logic, and field ethics prior to each data collection round.

7.5 Data Quality Assurance (DQA)

To uphold the integrity and reliability of collected data, the following comprehensive Data Quality Assurance measures will be instituted:

7.5.1 Syncs of Daily Data

Daily data syncs from field to central server: Enumerators will upload data at the end of each field day, ensuring information is rapidly consolidated and securely stored. This allows for prompt identification of errors or inconsistencies and reduces the risk of data loss.

7.5.2 Field-level backchecks

Field-level backchecks by supervisors (minimum 10% sample): Supervisors will revisit or contact a randomly selected subset of surveyed households or respondents—at least 10%—to verify responses, validate consent procedures, and confirm adherence to protocols. This process helps detect and rectify inaccuracies or fraudulent entries.

7.5.3 Auto-validation

Auto-validation rules within PMIS and survey tools: Built-in logic checks, such as range restrictions, skip patterns, and mandatory fields, will automatically flag or prevent erroneous entries during data input. These automated safeguards ensure that only high-quality, complete data is accepted into the system.

7.5.4 Spot audits

Spot audits by central M&E team and FPMU reviewers: Periodic, unannounced audits will be conducted by central Monitoring & Evaluation personnel and FPMU (Field Project Management Unit) reviewers. These audits involve reviewing datasets, field visit logs, and randomly inspecting enumerator performance to uphold compliance and accountability standards.

7.5.5 Triangulation

Triangulation of quantitative and qualitative datasets to ensure consistency: Data from surveys, interviews, GPS-tagged photos, and observational notes will be cross-examined to confirm alignment across sources. Discrepancies identified through triangulation will be investigated and resolved, contributing to the robustness and credibility of findings.

These layered measures form an integrated approach to detecting, addressing, and preventing data quality issues throughout the lifecycle of the project.

7.6 Data Analysis Plan

The following methods and tools form a comprehensive data analysis plan of M&E consultant, which are designed to extract actionable insights, measure project success, and guide evidence-based decision-making at every stage.

7.6.1 Descriptive Statistics

The analysis will begin with descriptive statistics to summarize the core characteristics of the dataset. This includes calculating frequencies and percentages to understand the distribution of responses, as well as averages (means, medians) to track numeric targets such as household income, access rates, or service delivery metrics. These foundational insights will help illustrate the general patterns within the data.

7.6.2 Trend Analysis

To capture changes over time, trend analysis will be employed to assess how key indicators progress across reporting periods. This approach identifies increases, decreases, or stability in outcomes such as education enrollment, infrastructure completion, or satisfaction levels, providing a dynamic understanding of project impact.

7.6.3 Comparative Analysis

Comparative analysis will be used to evaluate progress by comparing baseline data with endline data or other reference points. This allows for the measurement of change attributable to the intervention, highlighting improvements, regressions, or areas requiring additional support. Such comparisons are crucial for understanding both absolute and relative progress.

7.6.4 GIS Mapping

Geographic Information System (GIS) mapping will be utilized for visual analytics, enabling the team to display and interpret the geographic distribution of project interventions and outcomes. By overlaying data on maps, patterns such as regional disparities, clusters of activity, or gaps in service delivery can be identified, supporting informed decision-making and resource allocation.

7.6.5 Regression & Correlation Analysis

Where appropriate, statistical techniques such as regression and correlation analysis will be applied to explore potential causal or associative relationships within the data. For example, the relationship between housing quality and beneficiary satisfaction can be examined to inform future project design and prioritize impactful interventions.

7.6.6 Analysis Tools

A combination of analytical tools will be employed to ensure robust and flexible data analysis. Python (with libraries such as Pandas and NumPy) and Excel will be used for data cleaning and basic analysis. SPSS will support more advanced statistical tests. GIS platforms like ArcGIS and QGIS will facilitate spatial analyses. For reporting and data visualization, dashboards will be created using Power BI or Tableau, enabling real-time tracking and accessible presentation of findings.

7.6.7 Analysis and Tabulation

The IFRAP M&E Framework adopts a structured analysis plan to ensure that all collected data — from surveys, spot checks, GRM logs, and MIS dashboards — is translated into actionable insights. Based on the client's suggested format, the following expanded tabulations will be generated at quarterly, annual, and cumulative levels, aligned with logframe indicators and tool outputs.

Each table is designed with predefined variables, disaggregation logic, and result-level linkages.

Component 1: Community Infrastructure Rehabilitation

Table 1: Community Infrastructure Schemes Constructed – District-wise and Overall (Year 1 & Year 2)

| *District* | *Flood Protection Works* | *Road Schemes* | *Irrigation Channels* | *Other Structures* | *Total Schemes Completed* |

Table 2: Infrastructure Progress by Type and Scheme Stage

| *District* | *Scheme Type* | *Sites Identified* | *Designs Finalized* | *Construction Started* | *Completed* |

Table 3: Infrastructure Completion vs Targets

| *District* | *Scheme Type* | *Target (PAD)* | *Completed* | *% Achievement* | *Remarks* |

Table 4: Infrastructure Quality Spot Check Summary
| *Site ID* | *Component* | *Structural Gaps Found* | *Compliance with Design* | *Beneficiary Feedback* | *Photo Record Attached (Y/N)* |

Table 5: Community Satisfaction with Infrastructure
| *District* | *Type of Scheme* | *% Users Reporting Improved Access* | *% Reporting Functional Downtime* | *Key Issues Noted* |

Component 2: Hydromet and Climate Services

Table 6: AWS Installation & Operational Status (Quarterly)
| *District* | *Station Type* | *Sites Finalized* | *Procured* | *Installed* | *Operational (Y/N)* |

Table 7: Forecast Lead Time – Baseline vs Current
| *Station* | *Baseline Lead Time (hrs)* | *Current (hrs)* | *Target (hrs)* | *% Improvement* |

Table 8: Community Alert Dissemination Effectiveness
| *District* | *Alerts Issued* | *% Households Reached* | *Channel Used (SMS/Radio/etc.)* | *Feedback Captured (Y/N)* |

Table 9: Trained Personnel on Hydromet Systems
| *PIU/PMD Office* | *Designation* | *Gender* | *Training Completed (Y/N)* | *Evaluation Score* |

Component 3: Resilient Housing Reconstruction

Table 10: Housing Progress by Stage – District-wise (Quarterly)
| *District* | *Plinth Stage* | *Lintel Stage* | *Roof Stage* | *Completed* | *Remarks* |

Table 11: Tranche Disbursement Status – Beneficiary Level
| *District* | *Beneficiary ID* | *Tranche 1* | *Tranche 2* | *Tranche 3* | *Certified (Y/N)* |

Table 12: Average Time Taken per Construction Stage
| *Beneficiary ID* | *Stage* | *Start Date* | *Completion Date* | *Total Days* | *Delay (Y/N)* |

Table 13: Beneficiary Feedback on Housing
| *District* | *% Beneficiaries Satisfied* | *Most Reported Issues* | *No. of Issues Resolved* | *Comments Logged* |

Table 14: VRC Participation & Oversight Scorecard
| *Village* | *VRC Formed (Y/N)* | *Meetings Held* | *Community Perception* | *Oversight Comments* |

Component 5: Project Management & Citizen Engagement

Table 15: Citizen Engagement Events Summary
| *District* | *Session Type* | *# Conducted* | *Total Attendance* | *% Female Participants* |

Table 16: GRM Tracking by PIU
| *PIU* | *# Complaints Received* | *Nature of Issues* | *Resolved* | *Pending* | *Avg. Resolution Time* |

Table 17: MIS Data Entry Compliance
| *PIU* | *Component* | *Expected Entries* | *Actual Entries* | *% Compliance* |

Table 18: Data Quality Audit Summary
| *Component* | *Tool Used* | *Error Rate (%)* | *Enumerators Flagged* | *Supervisor Review Date* |

7.7 Reporting Schedule

The reporting schedule is designed to ensure systematic monitoring and timely dissemination of project performance across all relevant stakeholders. Each report type aligns with specific project milestones and information needs, ensuring that decision-makers have access to clear, up-to-date, and actionable data throughout the project lifecycle.

Report Type	Content	Frequency
Baseline Report	Indicator benchmarks and community profiles	Within 90 days
Quarterly Reports	Output-level progress and field observations	Every quarter
Thematic Briefs	Deep dives on housing, hydromet, or GRM status	As needed
Midline Evaluation	Intermediate outcomes	Month 12–14
Final Evaluation	Endline impact assessment	Project closure phase

8. REPORTING AND COMMUNICATION PROTOCOLS

Effective reporting and communication are fundamental to the robust monitoring and evaluation (M&E) system of the IFRAP project. Clear, coordinated, and timely dissemination of findings strengthens decision-making and ensures that stakeholders remain fully informed and engaged throughout the project lifecycle. This section provides an expanded overview of the reporting architecture, including the flow of information, reporting schedules, content formats, and the mechanisms that support both internal and external communications.

8.1 Objectives of the Reporting System

The primary objectives of the reporting and communication protocols are multifaceted:

- Timely Updates: Furnish real-time updates and periodic comprehensive summaries to the Federal Project Management Unit (FPMU), Provincial Implementing Units (PIUs), the World Bank, and other relevant stakeholders, enabling prompt responses to emerging trends or issues.
- Informing Decisions: Equip leadership with actionable insights derived from field data, analytical reports, and trend analyses, supporting adaptive management and evidence-based adjustments.
- Accountability and Transparency: Ensure all processes and outcomes are meticulously documented and accessible, fostering trust among donors, partners, and beneficiaries.
- Continuous Learning: Facilitate the incorporation of feedback and lessons learned into ongoing and future project activities, enhancing the effectiveness and sustainability of interventions.

8.2 Reporting Channels and Recipients

To ensure that information reaches the right audiences efficiently, a multi-tiered reporting network is in place:

Report Type	Primary Audience	Delivery Method
Baseline, Endline	FPMU, PIUs, World Bank	Digital submission (PDF + Excel), PMIS upload
Quarterly Progress Reports	FPMU, Provincial PIUs, Donor Partners	PMIS dashboard + narrative report
Field Observation Briefs	PIU focal persons, District Coordinators	Shared via cloud platform and printed brief
Thematic Notes	Project Steering Committee (PSC), FPMU Management	PowerPoint + Policy Memo
GRM Summary Reports	PIUs, Implementation Partners	Dashboard + tabulated Excel reports

This diversified channel approach allows for specific communication to various stakeholder groups, ensuring clarity and relevance.

8.3 Reporting Timeline

A structured reporting timeline guarantees consistency and punctuality and strict adherence to this timeline ensures that data-driven insights and recommendations are available when most needed for decision-making and strategic planning.

Report Type	Submission Frequency	Timeline
Inception Report	Once	Within 30 days of mobilization
Baseline Report	Once	Within 90 days
Quarterly Reports	Every 3 months	By 15th of the following quarter
Midline Evaluation	Once	By Month 12–14
Final Evaluation Report	Once	Within 2 months of project closure
GRM Logs Summary	Every 3 months	By 15th of the following quarter
Special Reports	As needed	As needed

8.4 Report Formats and Standard Outlines

To meet varied stakeholder needs, reporting adopts multiple formats, and these diverse formats will enhance the clarity, depth, and accessibility of project information for a wide range of audiences.

- **Narrative Reports** will follow the structure prescribed in the TORs and RFP, covering:
  - Progress against indicators
  - Challenges encountered and mitigation actions
  - Field-level observations
  - Corrective measures taken
  - Lessons learned and recommendations
- **Annexes** will include:
  - Data tables (Excel)
  - Photographic evidence
  - GIS maps (where applicable)
  - Field visit logs
- **Dashboards**:
  - Custom developed Dashboard
  - Include filters by district, component, indicator type
  - Used for visual progress review and donor presentations

A. Baseline Report – Outline

1. Executive Summary
   - 1.1 Key Findings
   - 1.2 Baseline Indicator Summary Table
   - 1.3 Strategic Recommendations
2. Introduction
   - 2.1 Purpose of the Baseline Study

- 2.2 Scope and Coverage
- 2.3 Alignment with M&E Framework and ToC

3. Methodology
   - 3.1 Sampling Design
   - 3.2 Tools Used
   - 3.3 Enumerator Training and Field Protocols
   - 3.4 Limitations and Mitigations Measures
4. Baseline Findings by Component
   - 4.1 Component 1: Community Infrastructure
   - 4.2 Component 2: Hydromet and Climate Services
   - 4.3 Component 3: Resilient Housing
   - 4.4 Component 5: Technical Assistance and Citizen Engagement
   - 4.5 Gender, VRCs, Environment, and Inclusion Summary
5. Indicator Baseline and Disaggregation
   - 5.1 Summary Table of Baseline Values
   - 5.2 Disaggregated Results
6. Community Perceptions and Early Risks
   - 6.1 Beneficiary Satisfaction and Readiness
   - 6.2 Institutional Coordination Observations
   - 6.3 Identified Red Flags and Capacity Gaps
7. Recommendations and Next Steps
   - 7.1 Suggested Adaptations for Monitoring
   - 7.2 Input for PIU Planning and Resource Targeting
   - 7.3 Linkage to Midline and Fianl Evaluation Strategy
8. Annexes
   - 8.1 Baseline Field Activities
   - 8.2 Field Team Composition
   - 8.3 Baseline Tools
   - 8.4 Data Tables
   - 8.5 GIS/Photo Evidence

B. Quarterly Progress Report – Outline

1. Executive Summary
   - 1.1 Progress Highlights
   - 1.2 Key Achievements
   - 1.3 Emerging Risks or Red Flags
2. Overview of Reporting Period
   - 2.1 Period Covered
   - 2.2 Data Sources and Limitations
   - 2.3 Field Activities Conducted
3. Component-wise Implementation Progress
   - 3.1 Component 1: Community Infrastructure Progress
   - 3.2 Component 2: Hydromet and Climate Activities
   - 3.3 Component 3: Resilient Housing Progress
   - 3.4 Component 5: Technical Assistance & Citizen Engagement
4. Monitoring Findings
   - 4.1 Spot Check Results
   - 4.2 Deviations from Design or Timeline
   - 4.3 Red Flag Sites and Corrective Actions

5. Indicators Progress
    - 5.1 Updated Indicator Table
    - 5.2 Comparison Against Targets
    - 5.3 Disaggregation Summary
6. Coordination and Institutional Observations
    - 6.1 PIU Coordination Highlights
    - 6.2 Use of PMIS and Data Sharing
    - 6.3 Capacity and Logistics Updates
7. Recommendations and Next Steps
    - 7.1 Proposed Adjustments
    - 7.2 Planning Priorities for Next Quarter
    - 7.3 Risk Mitigatoin Suggestions
8. Annexes
    - 8.1 Field Visit Summaries
    - 8.2 Visual Evidence (Photos, etc.)
    - 8.3 Updated PMIS Dashboard Snapshots

C. Quarterly Grievance Redressal Report – Outline

1. Executive Summary
    - 1.1 Volume and Nature of Grievances
    - 1.2 Overall Resolution Rate
    - 1.3 Red Flag Issues
2. Summary of Compliant Received
    - 2.1 Monthly/District-wise Breakdown
    - 2.2 Types of Grievances
    - 2.3 Gender and Vulnerability Disaggregation
3. Resolution and Processing Status
    - 3.1 Average Time to Resolve
    - 3.2 Escalated Cases
    - 3.3 Unresolved or Recurrent Issues
4. Effectiveness of GRM System
    - 4.1 Accessibility and Awareness
    - 4.2 Feedback Loops
    - 4.3 Institutional Coordination
5. Recommendations
    - 5.1 GRM System Strengthening
    - 5.2 Coordination with PIUs
    - 5.3 Community Engagement Suggestions
6. Annexes
    - 6.1 Sample Complaints
    - 6.2 GRM Dashboard Snapshots
    - 6.3 Summary Tables

8.5 Communication Protocols

Communication is structured on two levels, and this dual approach fosters dynamic communication both within the project team and with the broader stakeholders.

- **Internal Communication**

- Weekly syncs between the central M&E team and regional field coordinators
- Daily field update summaries in PMIS
- Instant flagging of red-zone issues (e.g., delays, poor-quality construction)

- **Stakeholder Communication**

Stakeholder engagement will follow a structured communication process designed to ensure transparency, joint ownership of field findings, and prompt course correction where needed. Each monitoring cycle will follow the steps below:

1. **Field Visit Planning and Coordination**

   All data collection and field monitoring visits will be planned in advance and shared with IFRAP-FPMU for concurrence. A detailed visit plan including objectives, sampling, and methodology will be communicated prior to execution.

2. **Field-Level De-briefings**

   After each visit, a brief on-the-spot debriefing will be held with local stakeholders, field teams, and contractors to share preliminary findings and address any immediate issues.

3. **PIU-Level Debriefings**

   Following field-level engagements, structured debriefing sessions will be held with respective PIUs to present initial observations, validate findings, and record any PIU responses or clarifications.

4. **Submission to IFRAP-FPMU**

   A formal report consolidating visit findings, photos, and suggested action points will be submitted to IFRAP-FPMU within five working days of field visit completion.

5. **Stakeholder Workshop**

   Quarterly review workshops (virtual or in-person) will be held with all PIUs and FPMU to discuss cumulative findings from recent visits. These sessions will include discussions on trends, challenges, and suggested adjustments.

6. **Decision Tracking and Reporting**

   All decisions or actions agreed during stakeholder workshops will be tracked through the MIS. Progress on these will be reported in subsequent quarterly reports and reviewed during follow-up visits.

This process ensures a responsive, transparent, and feedback-driven communication framework between the M&E Consultant, PIUs, and the FPMU.

8.6 Escalation and Exception Reporting

A robust escalation mechanism is essential for managing risks and responding to exceptional circumstances and critical issues such as non-compliance with construction standards, misuse of funds, or major delays will be escalated immediately via:

- PMIS Red Flags (auto-generated alerts)
- Email notifications to FPMU focal person

- Emergency field inspection visits
- Dedicated reporting tab in quarterly reports titled “Exceptions & Corrective Measures”

9. ROLES AND RESPONSIBILITIES

The effective implementation of the Monitoring and Evaluation (M&E) Framework for the IFRAP project is anchored in clearly defined roles, responsibilities, and strong coordination among stakeholders. Clear institutional and operational arrangements comprised of the Federal Project Management Unit (FPMU), implementing partners, the M&E consulting team, and field-level staff—are vital to ensure transparency, accountability, and the timely flow of information. By delineating these roles and establishing robust communication channels, the project builds a solid foundation for effective M&E, ensuring that progress is monitored, challenges are addressed promptly, and all activities align with the overarching goals of the IFRAP initiative.

9.1 Federal Project Management Unit (FPMU), MoPDSI

Lead Agency Role

FPMU is the central coordinating authority responsible for overall oversight of M&E functions, including policy compliance, data governance, and stakeholder reporting.

Key Responsibilities:

- Approve M&E plans, tools, and protocols
- Coordinate with World Bank, provincial PIUs, and other stakeholders
- Review and validate all evaluation reports (baseline, endline)
- Ensure alignment of M&E outputs with project PDOs and donor requirements
- Chair quarterly review meetings with M&E firm

9.2 Provincial Implementing Units (PIUs)

PIUs serve as provincial-level focal points for facilitating ground-level activities and ensuring operational cooperation with implementing partners.

Key Responsibilities:

- Coordinate field-level logistics and approvals for M&E activities
- Provide access to site-specific documentation and local authorities
- Support mobilization of community members for interviews and surveys
- Validate reports through field observations and physical verification

9.3 M&E Consulting Firm (Lead: EASE-PAK JV)

The M&E firm holds end-to-end responsibility for designing and executing the full M&E system, ensuring technical rigor, ethical data handling, and timely delivery of outputs.

Key Responsibilities:

- Develop M&E Framework, PMIS, and field tools
- Conduct baseline, and endline evaluations
- Mobilize qualified M&E staff across all target districts
- Ensure regular data collection, verification, and reporting

- Train enumerators and field supervisors on data protocols
- Submit validated and insight-driven reports to FPMU
- Manage and operate the GRM system and ensure integration with PMIS
- Ensure data security, backup, and documentation procedures

9.4 Field Monitoring Teams

Each district will have a dedicated field team comprising a regional M&E Specialist and 3–4 enumerators responsible for localized monitoring and data collection.

Key Responsibilities:

- Conduct site visits and apply monitoring checklists
- Collect geo-referenced data via Android-based applications
- Document housing construction progress and social compliance
- Log and escalate field grievances to GRM/PMIS portals
- Submit data on a daily/weekly basis to the central server
- Participate in validation exercises and field audits

9.5 PMIS & Dashboard Development Team

A specialized team within the M&E firm is tasked with technical development and operations of the PMIS, reporting dashboards, and GRM systems.

Key Responsibilities:

- Design and develop custom PMIS platform with APIs for integration
- Build dashboards for FPMU and PIU access
- Develop Android apps for field data entry
- Ensure system uptime, security, and automated backups
- Support real-time data analytics and visualizations
- Respond to user feedback and enhance system functionalities over time

9.6 Grievance Redress Mechanism (GRM) Focal Persons

Nominated focal persons at district and central levels will manage the grievance lifecycle to ensure transparency and timely closure.

Key Responsibilities:

- Receive, log, and categorize grievances
- Ensure follow-up with concerned implementation partners
- Close grievances within agreed resolution timelines
- Report GRM summaries quarterly to FPMU
- Maintain confidentiality and sensitivity during handling of complaints

10. DEVELOPMENT OF MONITORING TOOLS

To operationalize the Monitoring & Evaluation Framework, the consulting team will design and deploy a suite of monitoring tools that ensure data quality, consistency, and completeness across all project components and districts. These tools will be standardized, digitized, and compatible with the IFRAP PMIS platform for real-time data entry, analysis, and visualization. These specialized tools will ensure systematic collection, validation, and analysis of data across all project components and districts, supporting both accountability and adaptive management.

As noted earlier, this is a live document, and the tools included herein are intended to remain dynamic. Modifications or additions may be made throughout the course of implementation based on evolving project needs and field realities. These tools are standardized to maintain consistency in data capture, yet flexible enough to address the unique requirements of each project area, such as infrastructure, housing, hydromet, and technical assistance. Digitization will play a central role, with all tools integrated into the IFRAP PMIS platform for seamless, real-time data entry, aggregation, and visualization. This digital backbone will not only minimize manual errors and delays but also facilitate rapid reporting and informed decision-making at various administrative levels.

10.1 Tool Development Approach

In the creation of monitoring tools M&E consultants followed a comprehensive, multi-step process designed to ensure all project monitoring needs are met efficiently and effectively.

All monitoring tools will be:

- Developed in alignment with project indicators from the RFP and PAD
- Tailored to each component (infrastructure, housing, hydromet, TA)
- Digitized using mobile survey platforms ODK (Open Data Kit)
- Equipped with skip logic, validation checks, GPS capture, and multimedia upload features
- Iteratively tested and refined through field pilots

This systematic and adaptive approach will ensure that the monitoring tools not only meet technical requirements but are also practical and responsive to the realities on the ground, ultimately supporting high-quality project management and reporting.

10.2 Types of Monitoring Tools

Tool Type	Purpose	Component Focus
Field Monitoring Checklist	Assess infrastructure quality, progress, compliance	Components 1, 3, 5
Construction Compliance Tracker	Verify adherence to minimum housing construction standards (HRU guidelines)	Component 3
Hydromet Station Functionality Form	Track installation, calibration, uptime, and faults	Component 2
Enumerator Spot Check Template	Supervisor validation of enumerator data collection	All components
Photographic Evidence Protocol	Standardize photo submissions (location, timestamp, angle)	All components

Beneficiary Interview Form	Gather satisfaction, complaints, gender-specific impacts	Components 1, 3, 5
GRM Intake Form	Multi-channel complaint registration template (IVR, SMS, WhatsApp, etc.)	Components 1, 2, 5
Activity Log Template	Record field visit summaries and anomalies by M&E teams	All components
Spot Audit Scorecard	Evaluate quality, accuracy, and authenticity of reported outputs	All components

10.3 Digital Tools and Interfaces

All tools will be deployed on handheld Android devices using cloud-synced forms. Key features include:

- **Offline Functionality:** Full offline data collection with auto-sync on reconnection
- **GPS Coordinates:** Auto-capture for housing sites, hydromet locations, infrastructure points
- **Multimedia Inputs:** Support for audio clips, images, and short videos
- **Validation Logic:** Prevent entry of inconsistent or missing data
- **PMIS Integration:** Seamless API-based push to the central IFRAP dashboard

10.4 Document Templates

The following document templates will be designed and shared with the FPMU for approval:

- **Monthly Field Visit Report Format**
- **Quarterly Progress Reporting Template**
- **Site Verification Memo Format**
- **Construction Non-Compliance Notification**
- **District Summary Dashboard (PDF & Excel)**

10.5 Tool Customization and Localization

- All tools will be available in **English and Urdu** (and optionally in local dialects)
- Icons and intuitive interface design will be used for low-literacy field staff
- Audio instructions may be embedded into mobile apps for improved usability

10.6 Training on Tools

A separate **training manual** will accompany each tool, outlining:

- Purpose and scope
- Indicator mapping
- Field usage instructions
- Troubleshooting scenarios

Training sessions will be held before each major data collection round and will include mock sessions and field testing.

11. EVALUATION PLAN

The Evaluation Plan for IFRAP's Monitoring and Evaluation (M&E) Framework serves as a comprehensive roadmap for systematically measuring the project's effectiveness over time by outlining the approach, timing, and scope for baseline, endline, and special evaluations. These evaluations are critical for assessing the project's outcomes, learning from implementation, informing mid-course corrections, and supporting policy-level decisions, thereby ensuring that all aspects of the project's implementation and effectiveness are rigorously and continuously assessed.

11.1 Evaluation Objectives

- Establish benchmark values for all PDO and Intermediate Result indicators
- Assess implementation progress, process efficiency, and early outcomes
- Evaluate end-of-project impact on livelihoods, infrastructure access, housing resilience, and institutional capacity
- Validate results against World Bank frameworks for accountability and transparency
- Provide recommendations for sustainability and scaling

11.2 Types of Evaluations

Evaluation Type	Timing	Purpose
Baseline Evaluation	Within 90 days of mobilization	Establish status quo for all key indicators; provide benchmark for comparison
Midline Evaluation	Months 12–14	Assess progress, identify implementation gaps, inform corrective actions
Endline Evaluation	Final 2 months of project	Determine final project achievements, document lessons learned, and assess long-term outcomes
Process Evaluation	Concurrent with midline	Evaluate effectiveness of delivery systems, coordination, and grievance handling
Special Thematic Studies	As needed	Focus on gender impact, land mutation compliance, social mobilization, ESMF/GAP compliance

11.3 Evaluation Methodology

A **mixed-methods approach** will be used:

- **Quantitative Surveys**: Structured household-level surveys using stratified random sampling (urban/rural, gender, vulnerability)
- **Qualitative Methods**:
  - Focus Group Discussions (FGDs)
  - Key Informant Interviews (KIIs) with PIUs, NGOs, communities
  - Case Studies of specific districts or interventions
- **Administrative Data Review**: PMIS, financial reports, GRM records

11.4 Sampling Strategy

Tailored Sampling Methodologies by Component

Given the distinct nature of interventions across the IFRAP project's components, a one-size-fits-all sampling strategy would not yield accurate, relevant, or context-sensitive results. Therefore, the Consultant has adopted a **component-specific sampling approach**, selecting the most suitable methodology based on the intervention type, unit of analysis, and population characteristics. This tailored strategy ensures statistical validity, operational feasibility, and analytical depth while remaining aligned with results-based monitoring standards.

This diversified yet structured approach ensures coverage across both direct and indirect beneficiaries, technical assets, and institutional actors, allowing for precise evaluation of outputs, outcomes, and broader project impact.

Component 1: Community Infrastructure Rehabilitation

Component 1 involves physical infrastructure schemes, namely irrigation systems (55 schemes) and roads/bridges (3 schemes covering approximately 20 km). These infrastructure types, impact beneficiaries indirectly through enhanced access, productivity, and resilience. Therefore, the sampling strategy must move beyond the asset itself and focus on the end users.

1.1. Rehabilitation of Irrigation and Flood Control Infrastructure

The selection of irrigation schemes for baseline and endline surveys will be based on **stratified purposive sampling**. One scheme from each of the 25 target districts will be selected, ensuring proportional district coverage and diversity in agro-ecological zones, scheme size, and command area.

- **Stage 1**: Stratify irrigation schemes by geography (district) and randomly select a proportion of sites.
- **Stage 2**: At each selected site:
    - Interview **2–3 household interviews (beneficiaries/water-users/farmers)** from the command area, ensuring **gender representation** (at least one female respondent)
    - Conduct **1 interview with village representative or community head** This approach ensures field data reflects how irrigation schemes influence productivity, cropping decisions, and water accessibility.

This methodology allows to maintain analytical coherence across schemes of differing scales while ensuring that feedback reflects actual end-user experience. These insights will feed into baseline and endline impact evaluations and inform real-time adjustments through monthly spot checks. This ensures both quantitative and qualitative understanding of scheme performance, water access, crop productivity, and equity in benefit distribution.

1.2. Reconstruction and Rehabilitation of Roads and Bridges

Given the limited number of road/bridge schemes, traditional statistical sampling of sites is not applicable. Instead, a **two-stage purposive sampling approach** will be used:

- **Stage 1**: Identify nearby villages directly linked to or serviced by each road/bridge.

- **Stage 2**: From each selected village:
    - Conduct **2–3 household interviews**, ensuring **gender representation** (at least one female respondent)
    - Conduct **1 interview with a village leader or representative** This structure captures the road's socio-economic and mobility impacts at the community level.

Monitoring & Spot Checks

For the **irrigation subcomponent**, a total of **25 irrigation schemes** (one per district) have already been identified based on stratified purposive sampling. These same schemes will serve as the basis for regular monitoring throughout the project lifecycle. Each selected scheme will be revisited **periodically**, ensuring alignment with construction timelines.

For the **roads/bridges subcomponent**, given the limited number of schemes (3), **all sites will be monitored periodically**.

These visits will focus on assessing construction progress, compliance with social and environmental safeguards, and quality assurance. Interviews will be conducted **on-site** with construction worker (including female workers where present), **contractors, D&S firms, and technical staff**.

This revised frequency acknowledges the nature of civil works—where progress occurs incrementally—and avoids redundant site visits, while still ensuring meaningful performance tracking, beneficiary feedback, and early detection of bottlenecks.

Component 2: Hydromet and Climate Services

Component 2 focuses on institutional infrastructure, including Automated Weather Stations (AWS), RADAR systems, and hydrological monitoring units. These assets are limited in number but high in technical value and require specialized validation.

- For **RADAR sites (N=3)**, a **census approach** has been adopted. All units will be reviewed and monitored given the extremely limited population size and the critical role these units play in flood forecasting.
- For **AWS (N=110)**, a **stratified purposive sampling approach** has been adopted. Units will be selected across varying climate zones and geographic locations to ensure representational spread. A sample size of approximately 25–30 AWS stations will be monitored, balancing precision with feasibility.

Each sampled unit will undergo technical inspection, validation of functionality, and institutional linkage checks to verify data transmission and utilization. Additionally, interviews with operational staff at PMD and local line departments will be conducted to assess the integration and effectiveness of early warning systems.

This targeted sampling design provides robust insights into the effectiveness, reliability, and institutional uptake of Component 2 interventions, ensuring alignment with national and provincial climate resilience goals.

Component 3: Housing Reconstruction

To ensure methodological rigor, statistical validity, and programmatic relevance, the project adopts a hybrid sampling strategy to balance statistical rigor with on-ground feasibility. This hybrid model

strategically combines two distinct yet complementary approaches: Cochran's Formula for sample size determination and Stratified Random Sampling for equitable distribution, followed by Stratified Cluster Sampling for regular field-based monitoring.

This strategy enables the project to capture statistically representative data across all key population segments while also facilitating operational feasibility, subgroup analysis, and comparative monitoring across geographic and demographic strata. This hybrid model facilitates analysis of impact at both macro and subgroup levels, which would be impossible with simple random sampling and give actionable insights, not just general trends.

Why a Hybrid Model?

- Cochran's Formula ensures statistical precision by providing a required sample size based on population size, confidence level (95%), and a reduced margin of error of ±3.67% (*meaning we can report results with high precision and statistical credibility*). While most M&E assignments accept a 5% error margin, for IFRAP we deliberately adopted a tighter threshold to enhance result accuracy. By reducing the margin of error, the sample becomes more reflective of the target population, allowing narrower confidence intervals and more reliable evidence for decision-making.
- Stratified Random Sampling ensures inclusive representation across key variables such as district, gender, and vulnerability status. This avoids the risk of underrepresenting vulnerable or critical subgroups. This approach supports both:
    - Quantitative analysis of aggregate trends.
    - Disaggregated insights on different impacts across vulnerable groups.
- Stratified Cluster Sampling, applied for monthly monitoring and spot-checks, allows for focused, efficient field deployment while retaining the benefits of stratification. It supports comparison between clusters (e.g., villages) and aligns with the village-based tool design adopted under Component 3.
    - Will maintain methodological consistency.
    - Will reduce the workload on monthly checks while still covering diverse cases.
    - Will enhance the credibility of both long-term and real-time findings.

This hybrid approach is fully aligned with global best practices in M&E and adheres to World Bank standards for results-based monitoring.

Benefits of the Hybrid Model

- **Accuracy:** Maintains statistical confidence and precision
- **Representation:** Captures diversity across geographic and demographic variables
- **Comparability:** Enables temporal and spatial comparison
- **Feasibility:** Aligns with field realities and logistical considerations

The hybrid sampling design thus creates a solid statistical and operational foundation for monitoring the effectiveness, efficiency, and equity of project interventions.

Statistical Foundation - Application of Cochran’s Formula

The Cochran formula for finite populations was used to determine the required sample size for Component 3:

- Population (N) = 35,100 households (Component 3)
- Confidence Level = 95% → Z = 1.96
- Estimated Proportion (p) = 0.5 (maximum variability)
- Margin of Error (e) = ±3.67%

Step 1: Sample Size for Large Populations

$$n_0 = \frac{Z^2 \cdot \mathrm{p} \cdot \mathrm{q}}{e^2} = \frac{(1.96)^2 \cdot 0.5 \cdot 0.5}{(0.0367)^2} = \frac{3.8416 \cdot 0.25}{0.001347} \approx 713$$

Step 2: Finite Population Correction

$$n = \frac{n_0}{1 + (\frac{n_0 - 1}{N})} = \frac{713}{1 + (\frac{712}{35100})} = \frac{713}{1.02028} \approx 699$$

This provides a statistically robust sample size with high confidence and precision.

Stratified Random Sampling

The total sample of 700 households will be proportionally distributed across target districts and disaggregated by:

- Gender (e.g., female-headed households)
- Vulnerability criteria (e.g., disability, elderly, low-income)
- Geographic strata (e.g., districts)

This will allow for targeted analysis of outcomes, equity, and subgroup-specific trends within Component 3.

Application of Stratified Cluster Sampling for Monitoring & Spot Checks

For ongoing monitoring, Stratified Cluster Sampling based on village-level operational clusters is adopted. Approximately 60–80 households will be sampled monthly from rotating clusters.

This approach offers several advantages:

- Operational efficiency in the field of deployment
- Geographic comparability between clusters
- Alignment with village-based M&E tools
- Retaining analytical depth

11.5 Evaluation Deliverables

Deliverable	Timeline	Contents
Baseline Report	Within 90 days	Sampling plan, tools, initial indicator values, analytical summary, recommendations
Mid-Term Report	Month 13–14	Performance assessment, implementation bottlenecks, adaptive strategy proposals
Endline Evaluation Report	Final 2 months	Final achievements, impact, sustainability recommendations, contribution to PDO
Special Reports	Biannually / on-demand	Focused analysis on social inclusion, environment, housing compliance, or governance

11.6 Evaluation Quality Control

- Tool piloting before deployment

- Enumerator training and certification
- Real-time data validation via PMIS
- Triangulation of survey, PMIS, and qualitative data
- Independent data audits during midline and endline

11.7 Use of Findings

Evaluation findings will be shared through:

- Internal strategy briefings with PIUs and FPMU
- Stakeholder workshops with donor representation
- Dashboard summaries for key performance indicators
- Public reports (summary form) for transparency and knowledge-sharing

12. RISKS AND MITIGATION STRATEGIES

This section outlines the key risks that may affect the successful implementation of the M&E Framework under the IFRAP project and presents corresponding mitigation measures. These risks span operational, institutional, environmental, and social dimensions and are assessed in terms of likelihood and impact.

The identification and management of risks are crucial components to ensure the effective implementation and sustainability of the M&E Framework within the IFRAP project. A proactive approach has been adopted to anticipate and address potential obstacles that may arise throughout the project lifecycle.

12.1 Risk Matrix

Risk Category	Risk Description	Impact	Likelihood	Risk Score (1–25)	Time Sensitivity	M&E Responsibility	Mitigation Measures
Operational	Delay in field mobilization due to administrative bottlenecks or access issues	High	Medium	12	Short-term	Team Leader & M&E Officer	Early mobilization planning, pre-approval of deployment schedules, local recruitment
Technical	Failure of PMIS or mobile data collection systems	Medium	Low	6	Medium-term	MIS Coordinator	Offline functionality, backup protocols, regular system testing
Data Quality	Inaccurate or incomplete data due to poor field supervision	High	Medium	12	Ongoing	MIS Coordinator & M&E Officer	Spot audits, real-time data syncs, supervisor validation, field backchecks
Political / Institutional	Change in leadership or project ownership affecting continuity	High	Medium	12	Ongoing	Team Leader	Regular communication with FPMU, formal reporting channels, PSC engagement
Security	Inaccessible or unsafe districts	High	Low	8	Unpredictable	M&E Officer	Flexible scheduling, coordination

	due to law-and-order situation						with local administration, alternate data sources
Environmental	Monsoon or extreme weather delaying fieldwork	Medium	High	15	Seasonal	Team Leader & M&E Officer	Seasonal scheduling, buffer periods in evaluation timelines
Social	Low community participation or resistance in survey/interviews	Medium	Medium	12	Survey phase	Team Leader & M&E Officer	Pre-engagement through social mobilization teams, community sensitization
Gender Inclusion	Underrepresentation of women in interviews or feedback	High	Medium	12	Interview windows	M&E Officer & Gender Focal Point	Recruit female enumerators, schedule visits at appropriate times, secure interview spaces
Grievance Handling	Delayed resolution or misclassification of complaints	Medium	Medium	12	Throughout	GRM Coordinator	GRM escalation protocol, automated reminders, monthly compliance checks

12.2 Risk Monitoring and Response Mechanism

- **M&E Dashboard Alerts:** PMIS will generate automatic red flags for late data syncs, non-compliance in field checklists, and unresolved grievances.
- **Quarterly Review Workshops:** Dedicated risk-tracking session to identify new/emerging risks and update mitigation actions.
- **Issue Log:** Maintained by central M&E coordination team and reviewed biweekly for escalation decisions.
- **Corrective Action Plans:** Developed jointly with PIUs for any critical or recurring risks affecting data integrity or field coverage.

12.3 Risk Escalation Protocol

Risk Type	Escalation Level	Response Timeline
Low/Moderate Risk	M&E Team Lead to FPMU	Within 3–5 working days
High Risk	M&E Team Lead to PIU/FPMU	Immediate (within 24 hours)
Systemic/Repeated	M&E Team Lead to FPMU	At next quarterly meeting

13. KNOWLEDGE MANAGEMENT RELATED TO MONITORING AND EVALUATION

The IFRAP M&E Framework treats knowledge management (KM) as an integral process to enhance learning, improve adaptive decision-making, and sustain institutional memory throughout the project lifecycle.

13.1 Objectives of KM in M&E

The primary purpose of KM within M&E is to ensure that monitoring and evaluation findings are not just reported but effectively used. It promotes a culture of learning, encourages reflection, and supports strategic adjustments during project execution.

- Transform raw M&E data into actionable insights
- Promote evidence-based decision-making among PIUs and FPMU
- Ensure transparency and accountability through data sharing
- Foster replication and scale-up of best practices

13.2 Knowledge Capture Mechanism

To generate knowledge from routine M&E work, the system will include dedicated processes to extract patterns, document experiences, and consolidate field learning. These mechanisms will convert monitoring data into usable knowledge.

- Periodic synthesis of field findings, dashboards, and GRM trends
- Thematic learning notes (e.g., gender equity, infrastructure quality)
- Structured documentation of success stories and challenges
- After-action reviews post-evaluation cycles

13.3 Knowledge Sharing Platforms

Dissemination is key to ensuring that knowledge reaches those who can act on it. Multiple platforms will be used to share learning across PIUs, FPMU, and stakeholders.

- Quarterly M&E learning briefs circulated to all PIUs and FPMU
- MIS dashboards with indicator-based visualizations
- Stakeholder dissemination events (including government & World Bank)
- Upload of key documents (reports, case studies, photos) to PMIS

13.4 Feedback Loop and Adaptive Learning

Knowledge use is reinforced through feedback loops. M&E findings will inform planning, corrections, and cross-learning across components and institutions.

- Regular integration of learning into work planning and field coordination
- Real-time course corrections using red flag dashboards
- Use of feedback from beneficiaries and VRCs for process improvements

13.5 Sustainability of KM Systems

To institutionalize learning, IFRAP will establish systems that remain functional even beyond the project's life. KM tools and practices will be transferred to implementing agencies to support long-term resilience and transparency.

- Handover of documented M&E tools, logs, and findings to PIUs/FPMU
- Training of government counterparts in dashboard use and interpretation

- Establishment of a central M&E knowledge repository within the PMIS