Sindh Strategic Action Plan for Floods 2022

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DISCLAIMER

This action plan is based on the findings of the Post-Disaster Needs Assessment (PDNA) that occurred in Pakistan following the floods of 2022. The PDNA was based on the data collected between September and mid-October 2022. The estimations for PDNA have been based on robust methodology and sound assumptions. However, the assessment was conducted in a short time frame when major parts of Sindh were still inundated. Therefore, it is safe to assume that the actual damages, losses, and needs are anticipated higher than the amounts encapsulated in the PDNA.

The in-depth sectoral assessments reveal that the scale of devastation has been larger than the mid-October estimations of the PDNA report. For example, the in-depth joint survey undertaken by the provincial government to assess the damages to houses confirmed that about 2.1 million houses had been damaged in Sindh (compared to 1.7 million houses in PDNA). Similarly, the PDNA estimated that the reconstruction needs of the entire education sector amounted to US$602 million in Sindh. However, an in-depth sector assessment (for school education only) estimates that the reconstruction needs for 19,808 damaged schools' amount to US$ 1.97 billion. The process of computing the damages, losses, and needs would continue with time as floodwater recedes and in-depth sectoral assessments are undertaken. The recalculation of estimates would also require recalibration and reconfiguration of the 'resilient recovery, rehabilitation and reconstruction framework' along with the corresponding action plans at national and sub-national levels.

FOREWORD

The colossal impact of the recent floods in Pakistan has been catastrophic and cataclysmic for Pakistan, especially the province of Sindh. The adverse impact of record-breaking torrential rains has disrupted every conceivable facet of life in the province. The sheer quantum of devastation in Sindh can be ascertained by the fact that 24 out of the 30 districts have been declared ‘calamity-hit’, about 2.1 million houses have been damaged, and over 3.8 million acres of crops have been destroyed. As per the ‘Post-Disaster Needs Assessment (PDNA)’, the preliminary estimates of the damages and losses in the province amount to US$20.5 billion. The ‘bare-minimum’ financial needs to reconstruct the damaged infrastructure are estimated at US$7.86 billion.

While it is useful to quantify and monetize the damages, losses, and needs, it must not take the focus away from more than 12.36 million people whose lives have been severely disrupted by the floods in Sindh. The entire spectrum of public sector investments across sectors has been jeopardized due to the widespread debilitating impact of the floods.

The philosophy behind the action plan for Sindh is predicated upon addressing the province's systemic issues across prioritized sectors to undertake realistic steps toward resilient recovery. The delineation of action plans in tandem with the institutional arrangements reflects the preparedness of the province to effectively work on rehabilitation, reconstruction, and recovery in the post-flood context. Pakistan is one of the most vulnerable countries to climate change impact. Sindh, the lower riparian province, bears a disproportionate impact.

Despite the full-fledged efforts of the government, the scale of devastation in Sindh requires technical and financial assistance from the global community to alleviate the sufferings of the people whose lives may never be the same due to this mammoth catastrophe and to mitigate the looming threat caused by climate change.

ACRONYMS

4RF	Resilient Recovery, Rehabilitation, and Reconstruction Framework
ADB	Asian Development Bank
ADP	Annual Development Programme
AWD	Area Water Board
BISP	Benazir Income Support Program
BHU	Basic Health Unit
CCT	Conditional Cash Transfer
CD	Communicable Disease
CFY	Current Financial Year
CM	Chief Minister
CSO	Civil Society Organization
DEPD	Department of Empowerment of Persons with Disabilities
EU	European Union
FO	Farmer Organization
FY	Financial Year
GBV	Gender-Based Violence
GoS	Government of Sindh
HR	Human Resource
IFI	International Financial Institution
IOB	Independent Oversight Board
LBOD	Left Bank Outfall Drain
M&E	Monitoring and Evaluation
MFI	Microfinance Institution
MHPSS	Mental Health and Psycho-Social Support
NCD	Non-Communicable Disease
NGO	Non-Governmental Organization
NSC	Nutrition Stabilization Center
P&DD	Planning and Development Department
PC-I	Planning Commission Form-I
PDNA	Post-Disaster Needs Assessment
PDMA	Provincial Disaster Management Authority
PPP	Public-Private Partnership
PSC	Policy and Strategy Committee
PSDP	Public Sector Development Programme
PTA	Parent-Teacher Association
RBOD	Right Bank Outfall Drain
RHC	Rural Health Center
RMNCAH	Reproductive, Maternal, Neonatal, Child & Adolescent Health
RRU	Recovery and Reconstruction Unit
RUTF	Ready-to-Use Therapeutic Food
SELECT	Sindh Early Learning Enhancement through Classroom Transformation
SIDA	Sindh Irrigation & Drainage Authority
SMC	School Management Committee
SSEIP	Sindh Secondary Education Improvement Project
STEVTA	Sindh Technical Education & Vocational Training Authority
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
WASH	Water, Sanitation, and Hygiene
WFP	World Food Programme

I. Executive Summary

As delineated in the 'Post-Disaster Needs Assessment' report of 28th October 2022, Sindh has received the largest share of damages and losses due to the recent floods. The adverse impact of climate change has disrupted every conceivable facet of life in the province. The devastating impact of floods has 'undone' a significant chunk of public sector investments in the province as it permeated across all sectors. The well-documented devastation scale should catalyze the public sector development paradigm toward sustainable climate-resilient planning, programming, and investments. In this catastrophic context, the 'Business-as-Usual' approach would be highly detrimental to the province.

A 'Transformational Path' needs to be pursued that is centered on addressing the 'systemic' issues that exacerbate the climate change impact and embedding environment-friendly practices in the public sector planning and development systems. The strategic action plan is a 'live document' that aims to guide Sindh's Flood Response and priorities from a short-, medium- and long-term perspective. The document may be recalibrated, reconfigured, and updated as per the evolving situation. The core focus of the action plan is to serve as a guide for strategic prioritization for planning, programming, and implementation for Sindh in the post-flood context.

Before delving into the specifics of sectoral prioritization of 'Sindh Floods Response: Strategic Action Plan,' it is imperative to conceptualize the strategy and its contours. On an immediate basis, 'Dewatering' is being prioritized to dispose off excess floodwater. The Strategy prioritizes critical intervention areas to address systemic issues plaguing the province, especially concerning disasters. Setting unrealistic recovery goals is 'counter-intuitive' without addressing the longstanding issues of the drainage systems. Public investments will again be jeopardized if the inefficiencies of the drainage network continue. The four pillars of the Strategic Policy are centered on the following:

- Rectifying the Systemic Issues
- People-Centered Approach
- Building Upon the Existing Models
- Aligning Existing Budgetary Framework with Resource Commitments

Rather than 'diluting' the strategy by spreading the focus upon superfluous sectors, the strategic policy focuses on the following priority thematic areas:

- Rectifying the Drainage Systems (including Irrigation and Water Resources)
- Housing and Community Facilities
- Livelihood
- Communications (Roads Infrastructure)
- Health
- Education
- Human Impact (Poverty, Food Security, Psycho-Social impact)

The action plan builds upon the strategic contours to operationalize how the prioritization can be translated into concrete interventions. Given the monumental task of rebuilding in the post-flood context, even at the bare-minimum needs level, it cannot be achieved with the limited resources available at the provincial level. The substantial financial gap of over US$ 7 billion to meet the basic reconstruction needs can only be met with proactive international assistance and expedited global resource mobilization. The strategic action plan of Sindh has been developed with the overarching idea of focusing the investments and contributions on priority sectors and the corresponding sectoral plans.

The core focus of the action plan is to serve as the operational guide for the prioritization of the planning, programming, and implementation for Sindh in the post-flood context. The plan serves as a gateway for the local and global community to prioritize sectoral investments and bridge the financing gaps pertaining to planned or implemented programs. The wide spectrum of provincial needs would require significant technical and financial resources to strengthen the flood response substantially.

Finally, the international community can play a critical role in mobilizing resources, providing access to global climate funds and creating a ‘green channel’ for projects in Pakistan, especially in Sindh. Local capacity also needs to be significantly augmented to pivot towards green growth and climate-resilience programming across all sectors. Local institutional arrangements of the Public-Private Partnerships in Sindh can be effectively leveraged to catalyze ‘green investments’ and harness international financing for localized solutions in the post-flood context.

II. Introduction

Even though it is an often-repeated statement, it is worth reiterating that despite being one of the lowest contributors to global greenhouse gas emissions, Pakistan is one of the most vulnerable countries to climate change. As a lower riparian province, Sindh has been at the receiving end of flood-related disasters that occur anywhere in the country. The devastation caused by the recent unprecedented rains and floods in almost the entire province of Sindh has severely disrupted the lives and livelihood of the people. Sindh has not only suffered in terms of loss of human lives but the critical infrastructure has also been impacted at an unimaginable scale. Torrential rains during July were more than 307% compared to the average rainfall during the month and those during August were 726% compared to the average rainfall during the month. With 24 out of the 30 districts being declared 'calamity-hit,' more than 1.8 million houses are estimated to have been damaged. With more than 3.8 million acres of crop area in Sindh being affected, the recent floods have permeated all the conceivable facets of lives.

The Government of Sindh is collaborating with the Federal Government, International Development Partners, NGOs, and other relevant stakeholders to undertake its rescue and relief operations, including the provision of relief items, in the flood-affected areas. Concurrent with the rescue and relief efforts, the Government of Sindh has been focusing on rehabilitating the affected population through the core principle of 'build-back-better' to withstand such disasters in the future. The recent report on 'Post-Disaster Needs Assessment' prepared by international experts from the World Bank, Asian Development Bank, European Union, and UNDP have attempted to quantify the scale of damages, losses, and 'bare-minimum' reconstruction needs with preliminary estimates.

In the context of 'Resilient Recovery, Rehabilitation, and Reconstruction' Framework, the provincial action plan of Sindh prioritizes the sectors of i) Drainage Systems (including Irrigation and water resources), ii) Housing & Community Facilities (including WASH), iii) Livelihood, iv) Communications (Roads Infrastructure), v) Health, vi) Education, and vii) Human Impact (Poverty, Food Security, and Psycho-Social Impact).

The action plan would serve as a frame of reference for the provincial government to guide its response in the post-flood context with a robust and focused stream of interventions and programs. The plan has been devised as an implementation roadmap to focus the provincial efforts on sustainable investments for prioritized sectors that pave the way for Sindh's resilient recovery. Being the most affected province, in the aftermath of floods, the overall floods response in Sindh requires 'all hands-on deck' to undertake impactful investments, initiatives, programs, and projects to catalyze the province's resilient recovery, rehabilitation, and reconstruction.

III. Damages

Setting aside the indirect losses such as trauma and psychological disturbances due to the loss of lives, shelters, livelihoods and properties, and the secondary losses due to the forgone economic activity, the financial losses alone have an estimated cost to Pakistan of more than 30 Billion US Dollars.

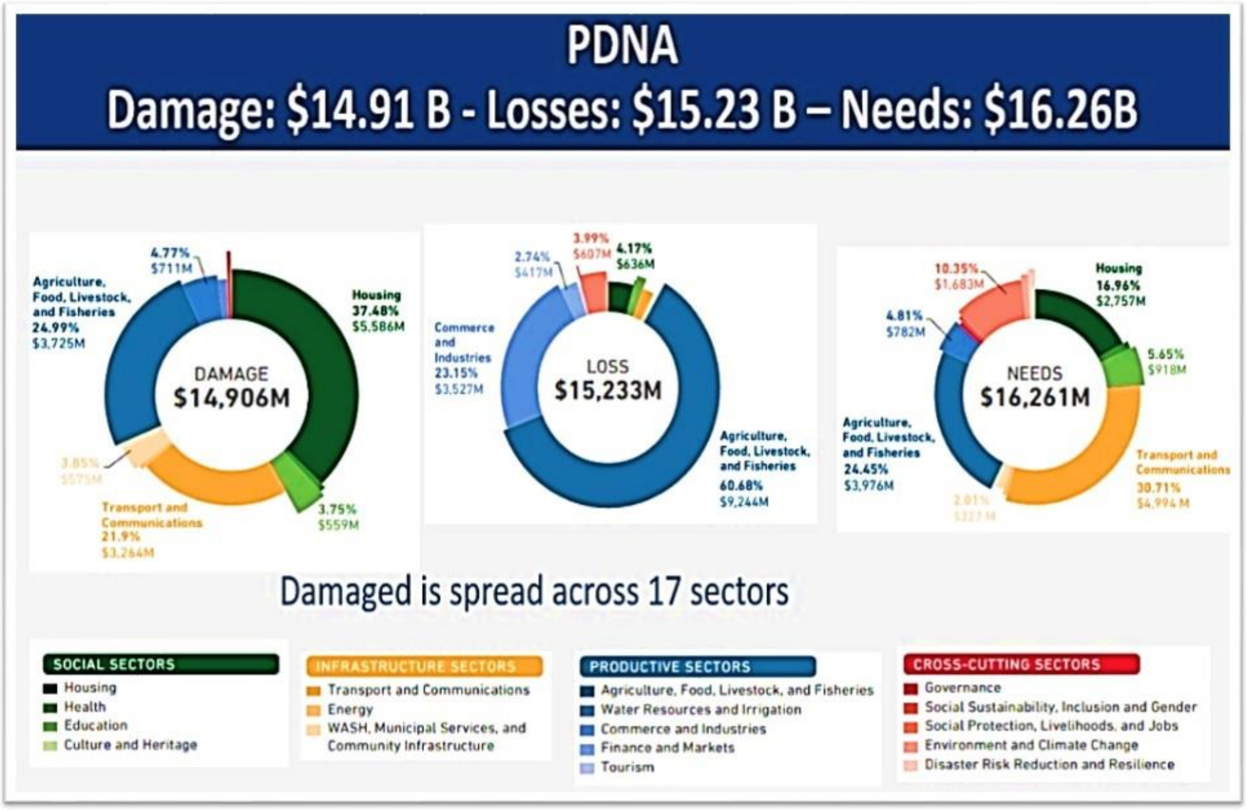

Figure 1: National Damages, Losses and Needs (PDNA)

Sindh, the most affected province, has suffered the most adverse impact of the recent floods. The devastations due to the floods are multi-faceted that have impacted the economy, housing, irrigation, water supply & sanitation, livelihood, communications, and several other sectors. The estimated financing needs, especially for reconstruction, for Sindh as per the 'Post-Disaster Needs Assessment' report is around 1.69 Trillion Pakistani Rupees (7.86 Billion US Dollars). With flood-related financing committed by the donors standing at around 395.6 Billion Pakistani Rupees (that is 1.84 Billion US Dollars), **a financing gap of at least 1.29 Trillion Rupees (that is 6.02 Billion US Dollars) remains for Sindh** to meet the 'bare-minimum reconstruction needs'**.**

It is worth mentioning that the damages, losses, and needs, as per PDNA, were estimated in October when a significant part of Sindh was inundated due to the floods. The anticipated needs are much higher due to the vast scale of devastation that has permeated all the sectors in the province. This means that the financing gap is expected to be higher as more evidence is generated over time to quantify the scale of damages and losses.

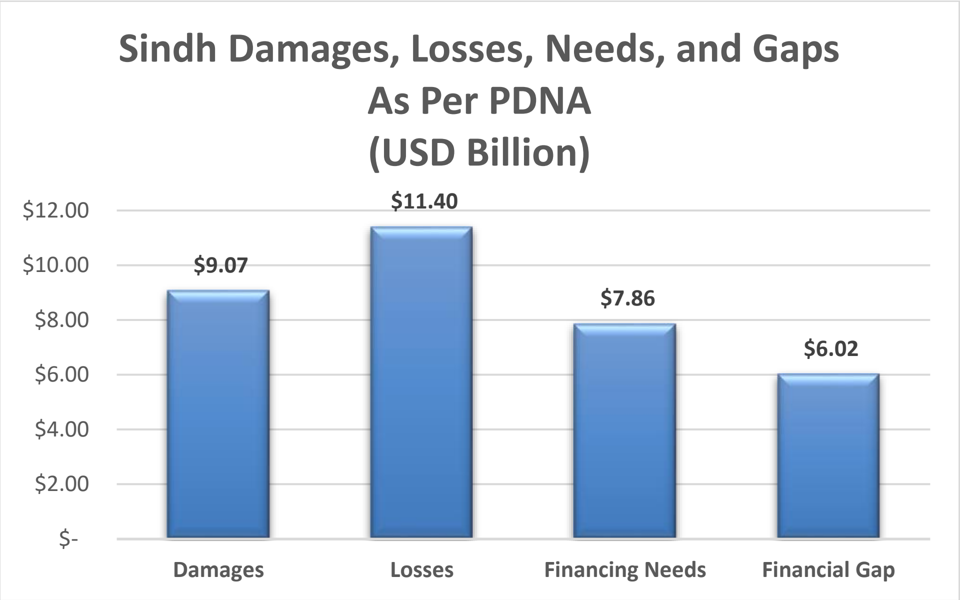

Figure 2: Sindh Damages, Losses, Needs and Gap (as per PDNA)

The sector-wise damages assessed by the Provincial Government are as under:

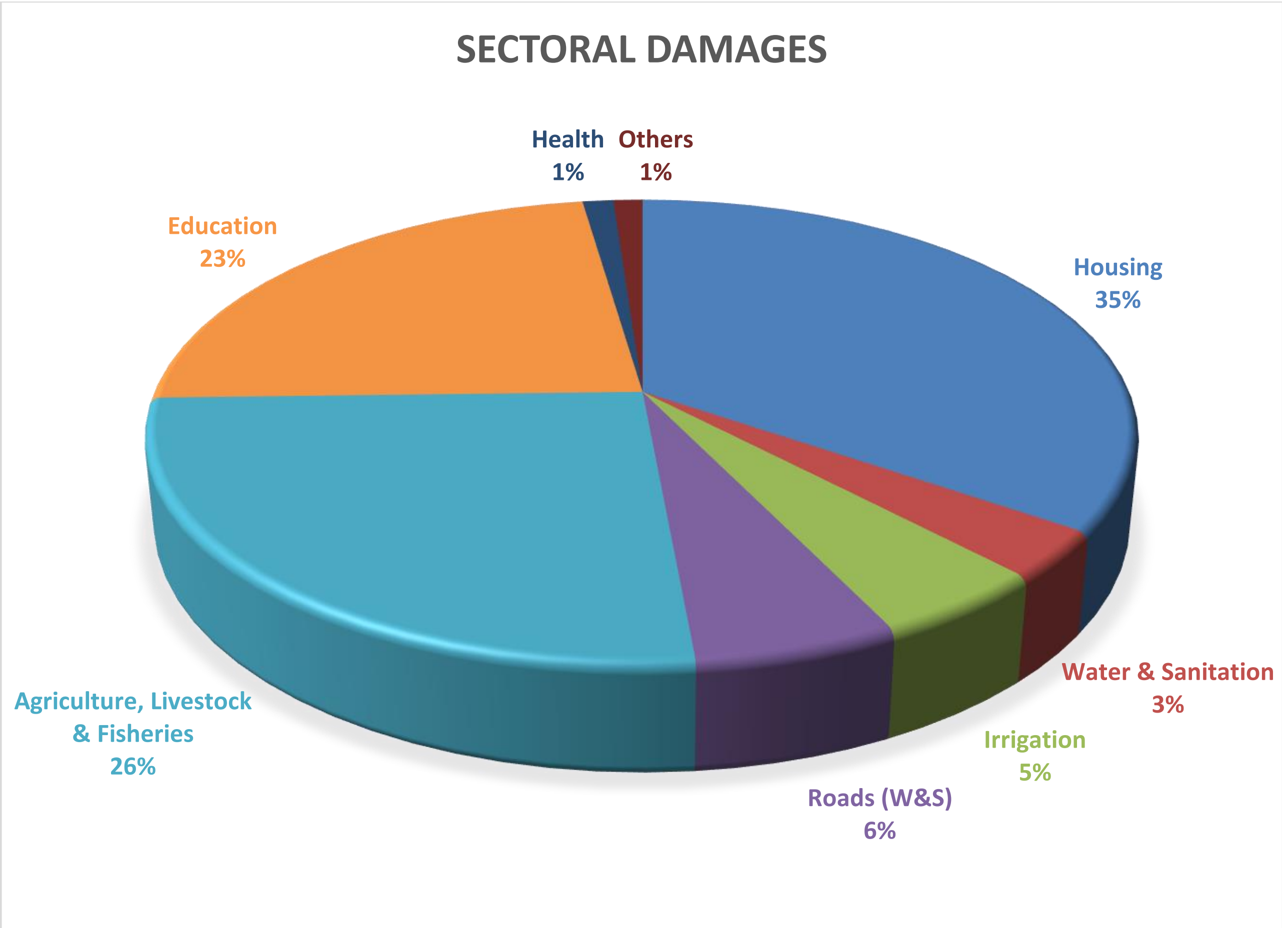

Figure 3: Summary of Sectoral Damage Shares assessed by Provincial Government

It is worth mentioning that at the time of estimations for PDNA, the exercise of the in-depth 'joint survey' to ascertain the housing damages was not undertaken. Hence, the estimates were based on 1.8 million houses being damaged instead of 2.1 million damaged houses (as per the in-depth joint survey). Similarly, the preliminary damages to educational institutes for PDNA were based on rough estimates. The in-depth assessment revealed that 19,808 schools had been damaged. The updated damages for housing and education have been incorporated to make the estimates more reflective of the actual damages.

IV. Summarizing Government of Sindh's Response

The focus of Sindh is centered on the following key components:

- **Conducting in-depth Damage Assessment through a joint survey to ascertain Housing damages**
- **Providing Low-Cost Climate-Resilient Housing**
- **Reviving livelihood by revitalizing livelihood, particularly agriculture activity (including livestock)**
- **Rehabilitating Damaged Irrigation Infrastructure**
- **Rehabilitating Health & Water and Sanitation facilities**
- **Rehabilitating Damaged Education Institutes**
- **Rehabilitating Damaged Provincial Highways and Internal Roads Infrastructure**
- **Repurposing Existing Projects and Conceiving New projects with International Partners (including World Bank, Asian Development Bank, Asian Infrastructure Investment Bank, and European Union)**
- **Realigning Provincial Budget with Flood-Related Projects**

Collaboration with Development Partners:

The government of Sindh has been closely coordinating with the development partners, especially the World Bank, which has agreed to provide financial support of about 500 Million US Dollars each for 'Sindh Flood Emergency Rehabilitation Project' and 'Flood Response Emergency Housing Project.' The Sindh Flood Emergency Rehabilitation Project will cater to the following aspects:

- Rehabilitation of critical infrastructure for the priority sectors of Irrigation & Drainage Infrastructure, Water Supply & Sanitation, and Roads
- Provision of Livelihood Support through the provision of subsidies on agriculture inputs and 'Cash-for-Work' programs
- Expansion of Rescue 1122 in priority districts and capacity building of Provincial Disaster Management Authority (PDMA) Sindh

The latter (Flood Response Emergency Housing Project) is centered on the reconstruction and rehabilitation of damaged houses vis-à-vis the low-cost housing model. Asian Development Bank is also supporting the Government of Sindh through the 'Flood Emergency Road Rehabilitation Project' to rehabilitate the road network affected by the floods.

The World Bank-assisted ‘Sindh Water & Agricultural Transformation (SWAT)’ project was already under negotiation with the donor before the devastating floods. The project intended to revolutionize the irrigation and agriculture sectors by adopting modern water conservation, hydroponics, and high-efficiency irrigation systems (HIES). However, the project was restructured to make space for supporting agriculture by providing subsidies to farmers in their bid to prepare for winter (rabi) crops and prevent the looming threat of food security facing the country. Provision is created to assist farmers in forthcoming crops in the form of, fertilizer, and land preparation. Additionally, a ’Contingent Emergent Response Component’ (CERC) has been added to cater to any subsequent disasters (via reappropriation from other components) during the six years of the project.

World Bank-funded projects on ‘Sindh Human Capital Investment’, with ‘healthcare services’ and ‘social protection’, components have also been realigned to rehabilitate primary healthcare services and provision of social protection via social registry. Cash transfers targeted the ‘First 1000 Days’ for Pregnant and Lactating Women throughout the province of Sindh.

The provincial government has also realigned its Provincial ADP with relief and rehabilitation efforts along with foreign-funded projects with international development partners. However, the provincial resources need to be increased to rehabilitate the flood-affected sectors, areas, and the population. Government of Sindh is also working in close coordination with UN Agencies in provision of immediate relief items/services to flood-affected populations in close collaboration with PDMA, Sindh. UNHCR has provided essential Non-Food Item (NFI) kits to various affected districts of Sindh. WFP having expertise in Food security and provision of supplementary food items, distributed the ration bags.

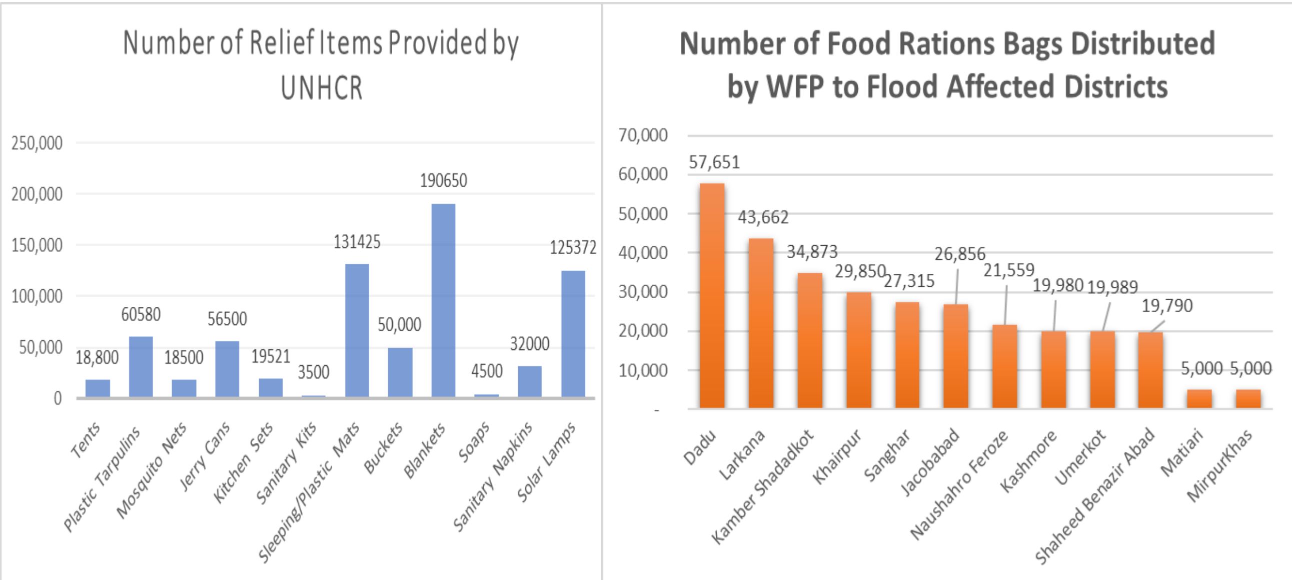

Figure 4: Summary of Relief Items and Food Ration Bags Distributed in the Flood-Affected Districts by UNHCR and WFP

The aforementioned foreign assisted 'Flood Rehabilitation Emergency Projects' are summarized below:

Name of Project/Program	Duration (Years)	Relevant Cost (USD Million)
Sindh Water and Agricultural Transformation (SWAT); Total Cost (USD 322 Million) - Project Subsidy on Agriculture Inputs (USD 110 Million)	5	**Total: 110** WB: 110
Sindh Human Capital Investment, 1000 Days Integrated Health & Population Project (USD 280 Million)	5	**Total: 280** WB: 200 IsDB: 50 GoS: 30
Strengthening Social Protection Delivery System in Sindh (USD 230 Million)	5	**Total: 230** WB: 200 GoS:30
Sindh Post Flood 2022 Housing Reconstruction Project (Estimated Cost USD 500 million)	5	**500**
Sindh Flood Emergency Rehabilitation Project	3	**500**
a) Rehabilitation of Irrigation System	3	215
b) Livelihood, Rescue 1122, Rehabilitation of Roads, Water Supply & Drainage	3	285
Flood Emergency Road Rehabilitation Project (ADB-Assisted) (USD 220 Million)	3	**Total: 220** ADB: 200 GoS: 20
TOTAL		**1,840**

Table 1: Summary of Foreign-Funded Projects for Flood Rehabilitation Emergency

V. Sector Prioritization for 'Sindh's Strategic Action Plan for Floods Response'

The creation of deltaic plains has remained the function of millions of yearly episodes of riverine floods. Though floods in Sindh have remained a reasonably predictable phenomenon over the last century, their severity and frequency has noticeably increased over the last two decades due to climate change. Considerable efforts are required to withstand and prosper in the face of increasing flood hazard and find out ways to stop turning these events into devastating disaster. These extraordinary times, require extraordinary thinking and level of seriousness and long-term strategic planning and management.

While recurrent floods have witnessed a lot of efforts expended on immediate response, like rescue & relief efforts, a long-term strategic view is often missed leaving behind no resources for sustainable solutions to the challenges that are faced by Pakistan, especially Sindh. While rescue and response may be a good strategy in some circumstances, it may be difficult to sustain financially, particularly when the number of those needing rescue is growing exponentially. From infrastructure to social sectors, the long-term sustainability and looming threats to our collective survival due to climate change need to be the cornerstone of our investment decisions. The focus of all our rehabilitation and reconstruction planning needs to be working with nature and be directed towards finding ways to maintain a symbiotic human-environment interaction in the Indus plains that allowed a thriving civilization for thousands of years. Building on this, a four pillar-strategy for floods response is proposed as depicted here.

Before delving into the specifics of sectoral prioritization of 'Sindh's Strategy for Floods Response', it is imperative to conceptualize the strategy and its contours. On an immediate basis, 'Dewatering' is being prioritized to dispose of the excess floodwater. The Strategy is focused on prioritizing critical intervention areas that need to address systemic issues plaguing the province, especially pertaining to disasters. Simply put, undertaking huge investment and lofty goals is 'counter-intuitive' without addressing the longstanding issues of the drainage systems. Public investments will again be jeopardized if the inefficiencies of the drainage network continue. Being the lowest riparian province, Sindh is highly vulnerable to disasters across the country.

The first pillar of 'rectifying the systemic issues' is to prioritize the longstanding problems that have plagued the province. The core issue that has come to the forefront is the persistent problems with the drainage system that significantly exacerbated the impact of the recent floods.

The recurrent delays in rectifying the drainage problems and completion of drainage networks point to the broader systemic issues pertaining to misplaced priorities in the public sector development framework.

The second pillar of ‘People-Centered Approach’ is to prioritize the human impact of floods that have directly disrupted the lives of more than 12.36 million in Sindh. The focus on quantifying and monetizing damages and losses must not undermine that the floods have affected every conceivable facet of lives for the affected segments. The adverse impact has disproportionately affected vulnerable groups, like women and children. The significant impact has permeated across sectors, like health and education, where daunting challenges of reducing out-of-school children, poor learning outcomes, and immunization and nutrition outcomes of children are already a challenge. The mental toll and trauma of losing livelihood and loved ones require an empathetic, inclusive, and holistic approach to recovery and rehabilitation.

The third pillar of ‘Building Upon the Existing Models’ is to leverage the existing models to address Sindh’s recovery plan and not necessarily reinvent the wheel. The plans for flood management that were conceived in the aftermath of the 2010 floods may still be relevant. Similarly, the ‘Village Rehabilitation Program’ under the ‘People’s Poverty Reduction Program’ and concepts of ‘cluster-based growth nodes’ and ‘secondary cities development’ may offer useful lessons for viewing the reconstruction and rehabilitation from a ‘meso-level’ perspective to make truly resilient communities.

The fourth pillar of ‘Aligning Existing Budgetary Framework with Resource Commitments’ entails that despite the resource constraints, there is significant space available to review and refine the existing development portfolio and realign operational allocations to the sectors which will contribute towards human development and economic recovery.

Priority Areas for Strategic Action Plan

Rather than ‘diluting’ the action plan by spreading the focus upon superfluous sectors, the strategic action plan focuses on the following priority thematic areas:

- Rectifying the Drainage Systems (including Irrigation and water resources)
- Housing and Community Facilities
- Livelihood
- Communications (Roads Infrastructure)
- Health
- Education
- Human Impact (Poverty, Food Security, Psycho-Social impact)

These sectors have been prioritized, as they have borne the disproportionate brunt of the damages and losses due to floods – to the tune of 99% of total losses and damages that province has suffered.

Figure 5: Core Pillars and Priority Sectors for Sindh Strategic Policy for Floods Response

Sindh's strategic imperatives with regards to the flood response are centered on addressing the systemic issues that exacerbated the impact of record-breaking torrential rains. The provincial focus hinges upon building upon existing programs and knowledge-base rather than reinventing the wheel where it is not necessary. The budgetary framework is being realigned to ensure expeditious resource mobilization in order to deal with the unprecedented climate catastrophe facing the province. The strategy is grounded in acknowledging and addressing the 'human impact' of the devastation that requires empathy with grueling experience of the affected communities whose lives may have been impacted for years to come.

Drainage System
(Irrigation & Water Resources)

A. Drainage System (Irrigation and Water Resources)

Impact

Preliminary estimates showed that the Irrigation Sector in Sindh suffered damages of around Rs. 95 billion, with significant damages to Barrages, Headworks & Related Dikes, -Canals/Water Channels, -Drains & Appurtenant Structures, and the Flood Protection Embankments.

Restoration of drainage and irrigation infrastructure has been prioritized in the short term. However, medium and long-term planning will embed the rectification of longstanding issues with the province's drainage systems, as well as upgradation of these systems to enable them to withstand the extremities of climate change.

Action Plan

A well-designed and integrated drainage system is a prerequisite to channel and discharge the excess water into the sea properly. Over time, the natural waterways of the Indus Basin are being choked with the added irrigation infrastructure obstructing the natural flood routes. Clearing the encroachments on the natural waterways must be coupled with strengthening embankments and designing & enforcing regulations pertaining to flood plains. It is also imperative to overhaul the surface drainage including the expeditious completion of the Right Bank Outfall Drain (RBOD). Rehabilitation of the existing drainage infrastructure of the Left Bank Outfall Drain (LBOD) is being pursued along with the augmentation of its drainage area. It must be acknowledged that the recent torrential rains were unprecedented, but the situation was exacerbated due to the flaws in the drainage systems that cannot be put on the back burner anymore. Without an integrated water drainage system in Sindh, the province will remain at risk and vulnerable to flood-related disasters. Institutional strengthening of the Irrigation Department (including SIDA) and PDMA has also been prioritized.

Policy/Operational Level

At the policy and operational levels, it is advisable to assess the existing policies for appropriate action and implementation of priorities for various canals that make part of Sindh's Irrigation Network. This would also involve consultation with all the relevant stakeholders.

Investments/Programs

The Government of Sindh is initiating and proposing the following interventions to restore and rehabilitate the irrigation and drainage network of the province on resilient basis:

1. **Sindh Emergency Rehabilitation Project (SERP) – Irrigation Component**. SERP's Irrigation component is being implemented with the financial support of the World Bank. The total cost of the intervention is PKR 48,327.221 Million equivalent to US$ 211.96 Million. The main focus of the project is on
    a. Restoration and Rehabilitation of Irrigation and Flood Control Infrastructure in the Immediate / Emergency Phase and medium to long term phase respectively. In the immediate term these will include rehabilitation of Manchar Lake Bund, FP Bund, Aral Left Bank, Dhoro Puran, remodeling of Aral head and tail regulators, and rehabilitation of Danster channel and its tail regulator.
    b. Medium to Long Term Rehabilitation includes remodeling and rehabilitation of regulators, canals, drainage networks, flood embankments and other irrigation infrastructure. Flood detention dams/weirs are also proposed on the high flooding stream near Karachi to avoid urban flooding, mostly caused by Malir River.
    c. The project also includes Institutional Strengthening for Resilience and Technical Assistance to commission technical Studies for Integrated Flood Assessment and Risk Management on River Indus, Manchar Lake and catchment areas affecting Sindh, Risk Assessment for Kirthar Hills, and Mapping of flooding and non-perennial water bodies.

2. "**Sindh Water and Agriculture Transformation (SWAT)**" project with the support of World Bank, amounting to PKR 70.4 Billion. The project will mainly focus on:
    a. Under Capacity Building of existing Water Resources Management Institution, the SWAT will support formulation of Sindh Strategic Water Plan (SSWP) at the cost of PKR 811.8 million through international consultants, further under the policy and reforms interventions, new Water Law will be compiled and set out at the cost of 453.53 million. The SWAT will also invest in Hydro Agro Informatics centre to digitize our natural resources and consumption pattern; this system will help forecast droughts and floods with due cushion for remedial measures. It will cost around 2471.22 million.
    b. After barrages and main canals, the third level of irrigation system level is distributaries and minors. The SWAT's second component will support rehabilitation and modernization of these channels through an integrated development model under farmer organization. This will help the farmers through efficient and equitable water delivery with latest monitoring tools and regulating structures. It will cost around PKR 3,520 million. The water management institutes, Sindh Irrigation & Drainage Authority, Main Canals Area Water Boards and Farmer Organizations will also be supported under this component.

c. The Akram Wah is the primary source of drinking water and agriculture for the Tail End areas of Badin District. It is in dilapidated conditions due to age-old infrastructure; as a result the canal is unable to carry its design discharge. The feasibility for its rehabilitation works was completed under WSIP and now SWAT project includes Rehabilitation of Akram Wah at the cost of PKR 20,460.85 million. The Akram Wah is a 116 km long Canal with a command area of 187,000 hectares.
d. The right bank of Indus specifically the Sukkur Barrage command, is not only worse affected by floods in 2022 but this area has always been neglected for investments by international development partners. The canals of right bank Sukkur barrages are facing serious issues of hydraulic efficiency as well as operational problems. The WSIP project conducted condition assessment / pre-feasibility studies of these canals, requiring urgent intervention. The SWAT project will conduct detailed feasibility studies for rehabilitating three main Canals on the Right Bank (Dadu, Rice, and Northwest) and the Warah Branch Canal. The total command area of these canals is around 800,000 ha (2 million acres). It is foreseen that the second phase of SWAT will launch rehabilitation of these canals with approximately USD 400 - 500 million budget.

3. The assessment of the Right Bank of River Indus related to Irrigation, Drainage, Flood Protection and Resilience require detailed studies to assist in complete Rehabilitation, Restoration and Construction project.

Institutional Effectiveness

Institutional effectiveness would be ensured through the following:

1. Institutional strengthening for resilience / studies / project management and identification of opportunities for design and execution with effective community participation.
   Assessment of institutions' capacity, hiring independent consulting services.

Total financing requirements for Drainage and Irrigation Sector: US$ 441.8 million; Funds Committed: US$ 424.2 million. **Financing Gap: US$ 17. 6 million**

Housing and Community Facilities

B. Housing and Community Facilities

Impact

According to the findings of the PDNA, the floods caused the complete destruction of 0.654 million houses while more than 1.05 million houses were partially damaged. The on-ground evidence suggested that these partial damages require considerable infrastructure rebuilding as they may be presumed to be significantly damaged in their current positions.

The Government of Sindh launched a house-to-house physical survey (Joint Survey) with the collaboration of Federal and Provincial Agencies. This recently completed joint survey estimates that about 2.1 million houses have been damaged (1.44 million fully damaged and 0.65 partially damaged houses). The quantum of damages warrants a rethinking of the living habitats of communities. Rural houses were particularly impacted, especially in Sindh province, which accounts for more than 83 percent of the total housing damages. The extent of damage incurred to katcha(mud) houses has been higher than that to pucca (brick/stone) houses. As per the PDNA report, housing damages are estimated at US$5.5 billion, mostly affecting Sindh (83% of total housing damages). The actual cost of housing damages in Sindh is higher than PDNA estimates (2.1 million vs. 1.7 million), given that 0.4 million more houses have been ascertained to be damaged as per the recently completed joint survey. (Details of Joint Survey in **Annexure-V**).

Action Plan

The housing strategy will be pursued in a way that paves the way for ‘climate-resilience’ to withstand the impact of recurring floods. The ‘level’ of planning needs to be directed at the community and village level. Direct cash transfers to individuals for rebuilding damaged houses are the only effective measure. However, at the same time, building climate change resilient rural housing and allied infrastructure has been envisaged. Reconstruction and rehabilitation of partially and fully damaged houses will be pursued with allied facilities inside the house i.e., latrine, kitchen, handpump, and solar system, etc. The shared amenities like proper sewerage system through covered drains ending in disposal stations for the treatment of wastewater based on gravity. Raised street pavements (brick pavements or tuff-pavers) will be adopted to withstand inundation. Direct transfers to individuals for rebuilding houses can be an immediate response, but a more comprehensive climate-resilient housing strategy design needs to be undertaken.

WASH interventions will also be prioritized in tandem with community engagement, outreach, and social mobilization. With open defecation prevalence in the 'pre-flood context' as high as 45% in rural Sindh, there is an immediate need to design a more robust WASH strategy in the aftermath of floods.

Policy/Operational Level

In the post-flood context, Sindh must prioritize developing concrete policies/strategies to foster overall housing and resilient settlements. The devastating impact of floods on housing offers an opportunity to pivot toward climate-resilient housing and overall sustainable settlements (Village Rehabilitation Program of PPRP offers useful precedence). With an independent Public Sector Company under Securities and Exchange Commission of Pakistan (SECP), i.e. 'Sindh People's Housing for Flood Affectees', the financial assistance will be disbursed systematically to facilitate the affected population in rebuilding damaged houses under the 'Flood Emergency Housing Project' (World Bank-funded). Housing reconstruction will be centered on a holistic settlement policy that fosters climate-resilient housing with allied facilities.

Investments/Programs

The prioritized investment with regard to massive, damaged houses is centered on the following:

1. Reconstruct/Rehabilitate Houses

    a. Ex-gratia financial assistance of PKR 300,000 (US$ 1,395) and PKR 50,000 (US$ 232.5) respectively to the affected people whose houses have been fully or partially damaged during the recent unprecedented rains in various districts of Sindh

    b. To design, implement and manage this Project, the GoS has incorporated a not-for-profit company, Sindh Peoples Housing for Flood Affectees (SPHF)

    c. Massive Housing reconstruction would help in providing alternate (short- to medium-term) employment opportunities to the local communities, especially the affected population

Institutional Effectiveness

1. Creation of a dedicated Section 42 Company, i.e., SPHF, is a step in the right direction to focus on the monumental task of facilitating the reconstruction and rehabilitation of over 2 million houses. For climate-resilient housing on 'build-back-better' principle, the holistic view of climate-resilient settlements must be adopted with necessary institutional linkages. Useful precedence of 'Village Rehabilitation Program' of People's Poverty Reduction Program can offer useful lessons
2. Sindh's draft 'Resettlement & Rehabilitation Policy of 2022' must be expeditiously reviewed, approved and operationalized to bolster the government's housing reconstruction effort
3. NGOs as implementation partners, having relevant experience of undertaking community-level activities, especially for housing, have been engaged.

4. A dedicated validating firm from private sector (Independent Validator) will be taken on board to ensure transparency and data authenticity
5. A renowned IT firm from the private sector has been engaged in establishing MIS.
6. A Chartered Accountant firm (one of the Big Four) has been taken on board as the supervisory and management consultant

Total financing requirements for the Housing Sector: US$ 2,080 Million; Funds Committed: US$ 727 million. **Financing Gap: US$ 1,353 Million**

Community Facilities (WASH and Municipal Services)

Impact

According to the National PDNA estimates, WASH Community Infrastructure and Municipal Services faced losses and damages of over US$687 million. A total of 1,346 water and sanitation schemes have been fully destroyed, while 5,714 are partially damaged, requiring major repair and rehabilitation. Out of this, Sindh's damaged Water Supply & Sanitation schemes are 5,318 (75.3% of the total country's damage). WASH Community Infrastructure and Municipal Services in Sindh faced losses and damages of over US$509 million (74.1% of the total country's damages). Sindh's preliminary estimates for Water & Sanitation damages amounted to Rs. 63.42 billion.

Action Plan

The inundation and stagnant water have entirely changed the quality of water leading to water-borne diseases and unhygienic conditions. Therefore, WASH interventions are required to be taken up on a priority basis by rehabilitating all the water supply and sanitation schemes in tandem with community engagement, outreach, and social mobilization. Post-flood WASH scenario necessitates a framework approach to provide clean drinking water and sanitation facilities to the entire population of the flood-affected districts in a systematic, inclusive and sustainable manner.

Policy/Operational Level

At the Policy and Operational level, Sindh will be better off establishing a robust regulatory framework for this sector by engaging multiple stakeholders for better service delivery. Establishing an appropriate interface between service providers and the end-users, as well as social mobilization of the community will lead to better provision of services and improved asset management. The Sindh Sanitation Policy, Drinking Water Supply Policy, Behavior Change Communication Policy, and Sindh WASH Strategic Sector Plan are required to be aligned to create synergy with clearly defined roles and responsibilities of regulator and operator, and community.

Investment Program

In the wake of severe floods in Sindh, the World Bank also carried out a parallel assessment of damages in WASH sector and extended support to the extent of US 50 million dollars under Flood Emergency Rehabilitation Program. The funds will be utilized to reconstruct and repair the most damaged water supply and sanitation schemes to cater to a sizeable number of the affected population.

The World Bank is also in the process of supporting the Provincial Government for Rural Water Supply, Sanitation, and Hygiene Program for the provision of clean drinking water and sanitation services in the most neglected area. Districts with high-level of poverty, stunting, reduced water accessibility, and severely affected by floods are being selected in the first phase. This will be complemented with indigenous resources through Annual Development Program. However, the demand and supply gap require further investment to fill the gap.

Institutional Effectiveness

The poor maintenance and ownership of water supply and sanitation services and assets especially in rural areas and municipal limits, has always kept this sector underutilized. The active engagement of the community will create a sense of ownership and their involvement in decision-making will improve monitoring and maintenance. Keeping in view the sub-par performance in terms of sustainable O&M in the WASH sector, the option of creating a Section-42 company is being explored for designing, execution, supervision, and maintenance of water supply and sanitation. The engagement of the private sector in the operations and maintenance of WASH and municipal services will also create a competitive environment and may transform this important sector into a well-organized and effectively maintained service-oriented sector.

Total financing requirements for Community facilities (including WASH and municipal services): US$ 213 million; Funds Committed: US$ 50 million. **Financing Gap: US$ 163 million**

Livelihoods

C. Livelihood

Impact

At the national level, the floods have caused losses and damages to the agriculture sector to the tune of US$13 billion. The affected communities also suffered losses to livelihoods exceeding US$600 million. PDNA reported about US$9.2 billion of damages and losses for Sindh to the entire agriculture sector, including livestock & fisheries (71% of the total country's damage & losses). According to Sindh's preliminary estimates, the agriculture sector suffered losses of over Rs. 455 billion, and Livestock & Fisheries suffered losses of over Rs. 46 billion.

In the pre-flood context, the prevalence of food insecurity is 56 percent of households in the calamity-hit districts (3.9 million people). The additional number of people in need of food assistance is highest in Sindh (4.3 million).The expected delays in the sowing of rabi crops, particularly wheat, will in all likelihood, further reduce food availability and drive price increases in the coming months, making access to food more difficult, particularly for low-income groups in hard-hit areas. The biggest share of job losses and disruptions (50 percent) were experienced in Sindh (2.15 million job losses). The estimated monthly labor income loss in Sindh is PKR 30.6 billion. The expected period of disruption is 3 months which means the total 'labor income loss' in Sindh amounts to PKR. 91.8 billion (USD 427 Million).

The short-term response may be centered on the provision of direct transfers for livelihood losses and wheat seeds (and oil seeds) for agricultural crop losses. However, medium- to long-term measures may be centered on creating incentives for climate-smart agriculture, technology transfer, and enterprise development for improved productivity.

Action Plan

Policy/Operational Level

In the post-flood context, Sindh needs to prioritize developing concrete policies/strategies to foster economic growth and job creation, especially green employment. The devastating impact of floods offers an opportunity to pivot toward avenues to incentivize 'green investments.' The floods have affected the livelihood of a significant segment of the population with over 3.8 million acres of crops being damaged and almost 450,000 livestock perished. The rehabilitation and reconstruction projects initiated by the government must be coupled with 'cash-for-work' programs for the local community for economic regeneration. The operational procedures for approval and procurement pertaining to the 'livelihood generation' projects must be expedited and streamlined. Flood-response plans must be linked to Sindh's Poverty Reduction Strategy of 2018 to build upon the existing pillars of community-driven local development, rural growth/service hubs, and urban economic clusters. The Sindh Agriculture Policy of 2018 will be proactively pursued with a concretized phase-wise action plan with implementation arrangements.

Investments/programs

The prioritized investments to revitalize livelihood opportunities for Sindh are centered on the following key programs:

- Restoration of Jobs and Livelihoods
    - Direct Cash Distribution (especially in the short-term) for creating a safety net for the affected population till livelihood opportunities are restored
    - Agriculture inputs (especially seeds & fertilizers) for immediate relief to the affected farmers whose crops have been significantly damaged
    - Cash-for-work interventions for providing alternate (short- to medium-term) employment opportunities to the local communities, especially the affected population
    - Commerce & Industries: Rehabilitation and Revitalization of the Industrial Estates (with allied facilities) in the 24 calamity-hit districts will be prioritized to strengthen the economic base and employment generation
- Recovery and reconstruction of critical assets
    - Recovery of the inundated agricultural land through dewatering & drainage
    - Recouping of Livestock losses through direct transfers in the short-term and livestock replenishment in the medium-term from other parts of the country
    - Mitigating the losses of Small & Medium Enterprises (including local shops) through direct transfers in the short-term and focusing on providing an enabling environment for growth in the medium- to long-term

- Strengthening governance and stakeholder capacity for reconstruction, especially communities, will be prioritized by building upon the existing model of 'community-driven local development'. With community organizations, village organizations, and local support organizations already being mobilized under the Government's 'People's Poverty Reduction Program', the climate-resilience efforts can be significantly strengthened and mainstreamed for amplified impact

Institutional Effectiveness

1. The role of the Rural Support Programs Network, Local NGOs, and affected Communities will be further mainstreamed in order to coordinate and implement the localized interventions approach across all sectors, especially for livelihood
2. Involve robust research and extension services in order to ensure the transfer of innovative production practices to rural crop farming, livestock owning, and aquaculture farming household

Total financing requirements for Livelihood (including Agriculture, Livestock & Enterprises): US$ 2,384 million; Funds Committed: US$ 176.7 million. **Financing Gap: US$ 2,207.3 million**

Communications (Roads)

D. Communications (Roads)

Impact

According to the preliminary estimates of the PDNA, the reconstruction needs for the 'Roads' sector in Sindh is estimated to the tune of Rs. 102 billion. The damages to the road network due to the floods in Sindh have significantly disrupted connectivity both inter-district and intra-district connectivity in the province. According to the Works & Services Department, a total of 8,463 kilometers of road network has been damaged.

In the short-term, Government is to rehabilitate the damaged provincial highways and internal roads infrastructure. However, medium to long-term measures are oriented towards climate-resilient roads infrastructure.

Action Plan

Policy / Operational Level

At the Policy and Operational Level, Sindh plans to carry out:

1. Flood Susceptibility Analysis of the entire infrastructure network
2. Geo-spatial prioritization, infrastructure network analysis, and evaluation of damaged infrastructure

Investment Program

At the programmatic and projects level, the Investment Program will focus on:

1. **Sindh Flood Emergency Rehabilitation Project** - Restoration of Roads subcomponent will support the rehabilitation and reconstruction of the affected road network to improve accessibility to public facilities and to facilitate socio-economic revival of worst-affected areas of the province. Geographically, these roads are spread in the 19 districts and have a cumulative cost of Rs. 22 Billion.
2. **Emergency Flood Assistance Project (EFAP)** – Works and Services Component – Sindh's provincial/district roads have been badly affected due to the heavy torrential rains requiring

immediate rehabilitation. The project will rehabilitate 1,664 kilometers in 23 districts of Sindh having a cumulative cost of Rs. 48 billion.

3. Rehabilitation and reconstruction plan in the communication sector based on prioritization criteria (national to local) and its implementation

Institutional Effectiveness

Institutional Capacity Building and Project Management would be an essential component to sustain the investment program on resilience and build-back-better principle. Leveraging effective public-private partnerships for development and operations & maintenance for sustainability of road network will be prioritized. Road Asset Management solutions, like asset registry, will be undertaken to contribute to achieving sustainable and effective management of a safe and efficient road network.

Total financing requirements for Transportation and Communications: US$ 475 million; Funds Committed: US$ 301.9 million. **Financing Gap: US$ 173.1 million.**

Health

E. Health

Impact

According to the preliminary estimates of the Health Department in Sindh, the floods have caused damages to the tune of Rs. 22 billion. 103 health facilities have been reported to be completely destroyed and 839 have been partially damaged. The Population Welfare Department reported damages of about Rs. 0.93 billion with 165 facilities reported to be completely destroyed and 412 facilities partially damaged.

The short-term measure of the Government is to rehabilitate the damaged infrastructure to restore critical services. However, medium to long-term measures must be oriented towards climate-resilience healthcare infrastructure along with streamlined emergency preparedness and response mechanisms coupled with contingency plans.

Action Plan

Policy/Operational Level

In the post-floods context, Sindh will embed 'emergency preparedness' (including risk mitigation) in the health sector strategy for an effective and integrated response to disasters and catastrophes with sufficient human and financial resources. The inclusion of 'Ready-to-Use Therapeutic Food (RUTF)' in the essential drugs list can be prioritized in the short term. However, over time, indigenous production with local ingredients for RUTF must be pursued. Localized production at scale would help reduce the cost of RUTF, contribute to the local economy, and reduce import dependence.

Investments/Programs

The prioritized investments for Sindh are centered on restoring health services, functionalization of facilities, scaling up its nutrition services, and improving the outreach of health services with the following key programs:

- Provide comprehensive essential health services (Communicable Diseases, Non-Communicable Diseases, Reproductive, Maternal, Newborn, Child and Adolescent Health, nutrition) through makeshift units, mobile outreach services, and temporary established field hospitals including essential medicine, equipment & supplies
- Strengthen services for malaria, dengue, and other water-borne diseases
- Refurbish/ reconstruct and maintain affected primary, secondary, and tertiary health facilities and replenishment of equipment and supplies
- Prioritize health outreach services, especially for integrated nutrition and immunization services

Institutional Effectiveness

- Establish referral mechanisms starting from communities with attendant transport for complicated cases, Bridge critical HR gaps including outreach workers in uncovered areas, and build capacity of the health workforce
- Strengthen surveillance and response systems to detect disease outbreaks
- Enhance coordination at national and sub-national levels, including with development partners
- Strengthen national and subnational nutrition coordination and leadership

Total financing requirements for Health: US$ 122.4 million; Funds Committed: US$ 54.5 million.
Financing Gap: US$ 67.9 million


Education

F. Education

Impact

The prevalent problems facing the education sector in Sindh, particularly the significant number of 'out-of-school' children and sub-par quality of education, have been exacerbated by the impact of floods. According to the preliminary estimates of PDNA for the Education Sector in Sindh, the floods have caused damages to the tune of Rs. 80.3 billion. The damages to the education sector due to the floods in Sindh included Schools, Colleges, Technical & Vocational Institutes, Special Education, and Universities.

A recent in-depth damage assessment by the 'School Education & Literacy Department' of Sindh has estimated that 19,808 schools have been damaged (45% of the total 44,219 schools) with enrolment of over 2.3 million children. The reconstruction and upgradation cost of the damaged schools (Fully: 7,503 and Partially: 12,305) amount to US$ 1.97 billion.

The short-term measure of the Government is to rehabilitate the damaged education facilities. However, medium to long-term measures is oriented toward climate-resilience education infrastructure and rethinking the prevailing education models in Sindh along with their effectiveness.

Action Plan

The immediate response must be focused on the resumption of education services to avoid any further learning losses. The medium to long-term strategy must focus on climate-resilient education infrastructure along with the consolidation of facilities (esp. one-room and or non-functional schools). Temporary learning facilities, Virtual learning, and digital inclusion must also be prioritized, especially in the rural areas of Sindh.

<u>Policy/Operational Level</u>

In the post-flood context, Sindh needs to prioritize rehabilitation and reconstruction of damaged schools along with the alternative arrangements of 'temporary learning centers.' From the policy-level perspective, climate-resilient educational infrastructure with build-back-better principle must be pursued. Disaster Risk Management Plans and School Safety Frameworks must be mainstreamed in the education sector. Early Disaster Warning Systems and Early Evacuation mechanisms must be incorporated. Functionalization and augmentation of existing schools (private, public, and public-private partnerships) need to be proactively pursued to cover learning losses, improve learning outcomes, reduce drop-out rate, and reduce the number of out-of-school children.

Investments/Programs

The prioritized investments in the education sector for Sindh are centered on:

- Reconstruction and rehabilitation of the damaged schools (about 20,000) with build-back-better principle
- Alternative arrangements, like Temporary Learning Centers and Rental Buildings, to continue till rehabilitation and functionalization of damaged schools
- Voucher schemes may be introduced for affected children to attend low-cost private schools in tandem with the augmentation of such schools

Institutional Effectiveness

- Robust Social Mobilization can be undertaken with the already widespread network of community organizations, village organizations, and local support organizations.
- Effective forums, like District Education Board, Parent-Teacher Associations, and School Management Companies, can be created and/or harnessed for an inclusive approach in terms of identifying priority educational interventions at the local level
- Gender-responsive monitoring of flood recovery plan in education must be centered on access and learning outcomes

Costing for reconstruction and rehabilitation of shelter-less, partially damaged and fully damaged schools is provided below

		Number of units	Estimated cost per units cost PKR in million	Total PKR in million	Exchange rate	Million in USD
Construction of shelter less schools (4867), re-construction of fully damaged school (7503) and partially damaged schools (12305)	Shelter less school	4867	20	97340	215	452.7442
	Fully damaged Institutes	7503	40	300120	215	1395.907
	Partially damaged Institutes	12305	10	123050	215	572.3256

Table 2: Summary of Damaged Schools and Shelter-less School Facilities

Reconstruction of damaged schools add to US$ 1.97 billion while those of Shelter-less Schools add up to US$ 452.74 million

Total financing requirements for Education: US$ 2,465.5 Million; Funds Committed: US$ 296.31 million. **Financing Gap: US$ 2,169.20**

Human Impact
(Poverty, Food Security & Psycho-Social Impact)

G. Human Impact (Poverty, Food Security, Psycho-Social Impact)

Impact

While it may be tempting to quantify the impact of damages caused due to floods, it is important to center the narrative on the 'human impact'. The mental trauma of losing your loved ones, livelihood, and belongings cannot be monetized. Millions of people that have been affected are in the need of psycho-social support services for returning to some semblance of normalcy. The incidence of 'Gender-Based Violence' might be on the rise due to the mental toll of the damages due to floods.

It is estimated that poverty in Sindh might increase by up to 9.7 percentage points. This essentially means that an additional 5 million people might fall below the poverty line (17.15 million people in total). Additionally, the incidence of food insecurity is a certainty for the province. According to the PDNA report, Sindh already has the highest prevalence of food insecurity in the calamity-hit district, i.e. 56 percent (3.9 million). Additional 4.3 million in the province are estimated to face food insecurity due to the floods. Beyond the deliberation of monetary damages, it is essential to empathize with the multi-faceted adverse impacts on the flood-affected population. The decade-long poverty-related investments in Sindh have been ravaged by the floods.

Strengthening Social Protection Delivery System in Sindh Project

World Bank-funded "**Strengthening Social Protection Delivery System in Sindh**" project, undertaken by the Social Protection Strategy Unit focuses on two key components:

Component I: Strengthen Sindh Social Protection Service Delivery Systems

To establish an appropriate institutional framework to improve formulation, functional consolidation and coordination, policy planning, delivery and monitoring of social protection interventions (especially those aimed at bolstering access and demand for human capital development interventions, and transforming social norms), while also strengthening administrative capacities.

Component 2: Mother and Child Support Programme (MCSP)

Strengthen and increase the scale of the Mother and Child Support Program (MCSP) via conditional cash transfer to pregnant women and mothers of under 2-year old children encouraging them to utilize maternal, newborn, and child healthcare (MNCH) services throughout the continuum of care for 1,000 days from conception.

In case of any emergency, as declared by the competent national or provincial authority, the Social Protection Authority will leverage the proposed social protection delivery system to contribute to GoS response efforts through Contingency Emergency Response Component (CERC) of the World Bank. The CERC is one of the Bank's contingent financing mechanisms available to Borrowers to gain rapid access to Bank financing to respond to a crisis or emergency.

Action Plan

Sindh's 'People's Poverty Reduction Program' has been ongoing in the province for a decade with multi-pronged interventions like vocational training, community investment funds, village rehabilitation, income-generating grants, low-cost housing, community investment funds, and other components. With a community-based model of local development, the Program has been scaled to all the impoverished districts of Sindh. Over time, the provincial government has built upon the cumulative learnings of the 'People's Poverty Reduction Program' (PPRP) to consolidate the programmatic efforts into a 'Sindh Poverty Reduction Strategy' in 2018 to offer sustainable solutions to both urban and rural poverty. The Strategy must be operationalized expeditiously in order to alleviate the sufferings of the flood-affected population and ensure their socio-economic empowerment. Social Protection delivery systems need to be strengthened to help the affected population cope with the flood's devastation. Similarly, the mental health aspect of the flood-affected population must not be overlooked.

<u>Policy/Operational Level</u>

In the post-flood context, Sindh needs to mainstream its promising interventions within PPRP and scaling up its social protection interventions to the 24 calamity-hit districts. From the policy-level perspective, Sindh's Poverty Reduction Strategy offers sustainable solutions; however, climate-resilient aspects may be embedded within poverty reduction and social protection strategies.

<u>Investments/Programs</u>

The prioritized investments to alleviate the human impact of floods in Sindh are centered on:

1. Scaling of existing interventions (like community investment funds, kitchen gardening, income generating grants, village rehabilitation, enterprise development fund, etc.) to the flood-affected population
2. Mainstreaming, Scaling and Integration of Social Protection Delivery Systems to offer a package of interventions to the flood-affected population (Social Registry, Cash transfers for mother and child support, etc.)

<u>Institutional Effectiveness</u>

1. Creating of the 'Social Protection Department' will pave the way for integrated social protection approach in the province
2. Integration of social support interventions are to be prioritized at facility level in tandem with the outreach efforts of social support services

3. A comprehensive package of psycho-social support services, including GBV-focused interventions, must be integrated within the existing healthcare facilities

Total financing requirements for Social Protection: US$ 1,177 million; Funds Committed: US$ 297.5 million. **Financing Gap: US$ 879.5 million**

For all the prioritized sectors in Sindh, the total financing requirements amount to US$9.95 billion for which the resources committed (local & foreign) amount to US$2.34 billion with a substantial financing gap of US$7.61 billion.

While it has not been included as a 'priority' sector in the Provincial Action Plan, the Cultural Heritage sites have also been adversely impacted due to the floods. The next section briefly delineates the damages to the heritage sites in Sindh for a visual depiction of how the floods have permeated every conceivable aspect of the individual and collective lives in Sindh.

Note: Sector-Wise Summary of Needs, Commitment, and Gaps provided in **Annexure – I**. Detailed Sector Action Plans provided in **Annexure – II**

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VI. Brief Depiction of Damages to Heritage Sites

The impact of culture on the communities is multifaceted that gives identity, strength, and a sense of purpose to its people. Every community is strongly tied together by an intricate tapestry of collective values, norms, and a specific history. One way to examine human history is through ancient relics and archeological sites that provide evidence of past activity and hold precious memories. The province of Sindh is rich with such heritage sites dating back to the Indus Valley Civilization of 2500 BCE. Unfortunately, the unprecedented climate-induced disaster has wreaked havoc on tangible and intangible cultural heritage in Sindh.

IMPACT OF CLIMATE-INDUCED DISASTER:

The 2022 floods severely impacted the cultural heritage across Sindh province. It has caused considerable damage to the foundational stability & structural integrity of nine archaeological sites including two World Heritage Sites in Sindh. These impacted sites are historically and culturally significant and damage to the sites will negatively affect the number of tourists and revenue from ticket sales and indirect earnings for the food, hospitality, and relevant sectors. Culture, Tourism, Antiquities & Archives Department (CTA&AD) has prepared a post-flood damage assessment report and estimated the damages amounting to 3.8 billion PKR caused by flood on the various sites in Sindh.

GLIMPSES OF DAMAGES CAUSED BY FLOOD TO VARIOUS HERITAGE SITES IN SINDH

Mohen-jo-Daro (Mound Of Dead), Larkano, Sindh (World Heritage Site)

The ancient site of Mohen-jo-Daro was rediscovered in 1922. The largest city of Indus Civilization & primitive city-state, has been severely damaged by the recent torrential rains of 2022. The stupa of mound of dead, walls around great bath and well are damaged. The report of CTA&AD has estimated the damages to the tune of 599.818 million PKR.

Makli Necropolis, Thatta, Sindh (World Heritage Site)

Makli Necropolis is one of the largest graveyard in the world. It is made of boulders and plastered with lime chiroli, spreading over an area of 10 sq. kilometers housing nearly 1 million tombs near the city of Thatta, Sindh. Currently, the site has been damaged due to recent rains / floods. The report of CTA&AD has estimated the damages to the tune of 410.688 million PKR.

Ranikot Fort, Jamshoro, Sindh

The wall which is over 34 km in length encircles hillocks. The fortification wall of the Ranikot fort has received serious damages because of recentheavy rains. The skin of wall is week in strength due to water seepage. The report of CTA&AD has estimated the damages to the tune of 698.584 million PKR.

VII. Budgetary Framework: Provincial ADP Analysis

While it is clear that the quantum of damages caused by the recent floods is unprecedented that cannot be met solely through local resources, it is a worthwhile exercise to undertake a critical analysis of the Provincial Annual Development Program for the current financial year. The analysis would help deconstruct the primary instrument of public sector development in the province to ascertain the potential of creating 'fiscal space' for conceiving new development projects aligned with climate change.

Ongoing Schemes included in FY 2022-23:

The analysis of ongoing schemes included in the ADP for CFY that were approved before 2010 shows the following insights:

62 schemes are included in the ADP for CFY with an estimated cost of about Rs. 58.5 billion and a throw-forward of Rs. 21.1 billion. The cumulative allocation for these schemes in CFY is Rs. 8.1 billion (38.5% of the throw-forward).

The summary of schemes approved before 2010 is as follows:

(In Rs. Million)

S. No.	Department	No. of Schemes	Cost	Throw-Forward	Allocation
Total		**62**	**58,487.89**	**21,120.03**	**8,139.29**

Table 3: Summary of Provincial ADP Schemes in CFY approved before 2010

The analysis of ongoing schemes included in the ADP for CFY that were approved between 2010 and 2018 shows the following insights:

567 schemes are included in the ADP for CFY with an estimated cost of about Rs. 416.6 billion and a throw-forward of Rs. 171.8 billion. The cumulative allocation for these schemes in CFY is Rs. 65.8 billion (38.3% of the throw-forward).

The summary of schemes approved between 2010-18 is as follows:

(In Rs. Million)

S. No.	Department	No. of Schemes	Cost	Throw-Forward	Allocation
Total		**567**	**416,572.49**	**171,754.74**	**65,840.82**

Table 4: Summary of Provincial ADP Schemes in CFY approved during 2010-18

<u>Note</u>: Details provided in **Annexure-III**

The analysis of ongoing schemes included in the ADP for CFY that were approved after 2018 shows the following insights:

1,867 schemes are included in the ADP for CFY with an estimated cost of about Rs. 405.6 billion and a throw-forward of Rs. 314.2 billion. The cumulative allocation for these schemes in CFY is Rs. 178.7 billion (56.9% of the throw-forward).

Key Takeaway: A total of 629 ongoing schemes that were approved before FY 2018-19 have been included in the Provincial ADP for CFY with an allocation of about Rs. 74 billion. In terms of the total allocation of the CFY, this essentially means that the allocations for pre-FY 2018 approved schemes are about 29.3% of the total allocations for the ongoing schemes.

Interestingly, the (allocation/throw-forward) for the schemes approved before FY 2018 is about 38% compared to about 57% for the schemes approved after FY 2018. The aforementioned analysis is a serious consideration of deleting 'lingering' schemes with a token allocation that have been approved in the last five years or before that.

Repurposing of Provincial ADP

Government of Sindh has created a fiscal space of 'Rs.87 billion' from 991 ongoing and 1652 new schemes included in the ADP 2022-23 that have been re-purposed for rehabilitation of emergent works in Post Flood Scenario:

- Reducing 50% allocation from 991 ongoing schemes, i.e. Rs. 47.98 billion revised instead of Rs. 95.97 billion of the original allocation
- Reducing 50% allocation from 1652 new schemes, i.e. Rs. 39.5 billion revised instead of Rs. 79.01 billion of the original allocation

Identification of Provincial ADP Schemes Contributing to Floods Rehabilitation

Government of Sindh has identified a total of 1,128 schemes with an allocation of about 'Rs.47.3 billion' from 808 ongoing schemes and 320 new schemes included in the ADP 2022-23 and will contribute to the emergent works in Post Flood Scenario. (Details provided in Annexure-IV).

VIII. Summary of Sector Wise Financing Gaps in Sindh

Overall financial needs in Sindh total up to US$ 9,358.4 million. The committed funds (foreign and local resources) thus far amount to US$ 2,328.1 million which is only 24.9% of total financial need.

Drainage (Irrigation and Water Resources)

The total financial needs in the sector constitute US$ 441.8 million. Thus far there are committed funds of US$ 424.2 million to address the needs in the sector. As a result, **financing gap amount to US$ 17.6 million**

Housing & Community Facilities

The estimated financial needs amount to US$ 2,080 Million. The funds committed add up to US$ 727 million. This leaves a **financing gap of US$ 1,353 Million in the sector.**

Total financing requirements for 'Community Facilities (including WASH and municipal services)' is US$ 213 million. Based on committed funds of US$50 million, the **financing gap in the sector is about US$ 162.7 million**

Livelihood (Agriculture, Livestock & Enterprises)

The financial needs are US$ 2,384 million. Based on the Funds Committed worth US$ 176.7 million, the remaining **financing gap is worth US$ 2, 207.3 million.**

Communications (Roads)

US$ 475 million worth of financial needs have been identified. Of the financing needs, US$ 301.9 funds have been committed. This leaves a **financing gap of US$ 173.1 million**

Health

Total financing requirements in the 'Health' sector add up to US$ 122.4 million. With about US$ 54.5 million funds committed, the **financing gap in the sector is US$ 67.9 million**

Education

In the 'Education sector', US$ 2,465.5 million worth of financial needs have been determined. In comparison, mobilized funding equates to US$ 296.3 million. This leaves a **financing gap of US$ 2,169.20 million**

Human Impact (Poverty, Social Protection, Psycho-Social Impact):

Total financing requirements for 'Human Impact' is US$ 1,177 Million. For the identified financial needs, committed funds thus far are US$ 297.5 million and **financing Gap is US$ 879.5 million**

Sector-wise financing needs, commitments (local and foreign), and financing gap is summarized below:

Sector	**Financing Needs (Million USD)**	**Commitments (Million USD)**	**Financing Gaps (Million USD)**	**Gap (%)**
Housing	2,080	727	1,353.0	65%
Health	122.4	54.5	67.9	55%
Education	2,465.5	296.3	2,169.2	88%
Communications (Roads)	475.0	301.9	173.1	36%
Livelihood (Agriculture, Livestock & SMEs)	2,384.0	176.7	2,207.3	93%
WASH	212.7	50.0	162.7	76%
Irrigation	441.8	424.2	17.6	4%
Social Protection	1,177.0	297.5	879.5	75%
Total	**9,358.4**	**2,328.1**	**7,030.3**	**75%**

Table 5: Summary of Sector-Wise Financing Needs, Commitments, and Gaps

Source: Consultations with GoS Departments for computation of data

IX. Public-Private Partnerships

In the post-devolution context, Sindh has already been at the forefront of leveraging public-private partnerships across energy, infrastructure, production, and social sectors for improved service delivery. Sindh was the first province to enact the 'Public-Private Partnership' law (i.e. Sindh PPP Act of 2010) to mainstream PPP as an instrument for improved service delivery. The focus of the policy is being built upon the successful PPP models to enhance the level of private-sector partnerships and investments by simplifying the regulatory regime.

The Institutional Arrangements for PPP in Sindh

- A high-level Public Private Partnership Policy Board, headed by the Chief Minister of Sindh, to formulate PPP Policy based on strategic goals and implementation in the Province
- A central PPP Unit established in the Finance Department to assist the PPP Policy Board in formulating and implementing PPP policies
- PPP Nodes as focal points for specific PPP projects in line departments, like the PPP Node established in the School Education & Literacy Department

As the discourse for the transition towards the green economy and climate-resilient investments has come to the forefront, it is imperative that Sindh effectively leverages public-private partnerships for sustainable investments. For example, the private sector can be effectively channelized on an equity-based model for investments in the Solar Parks to be developed by the Government. The government's land can be utilized as equity in a Solar Park while subsidizing service providers for providing solar systems on newly-built houses after floods. Similarly, the market for agriculture implements can be a fertile ground for private sector investments. For increasing productivity and farm mechanization, a 'machine pool' (like tractors, bulldozers, levelers) may be expanded with the help of public-private equity and revenue generated through rents. The revenue can be used for the operation & maintenance of the 'machine pool.' Another avenue is to harness the private sector investments for business development services for small & medium enterprises to incentivize innovative climate-adaption and mitigation solutions.

The economic revival and employment can be fostered by harnessing public-private partnerships across sectors with the potential of creating green jobs, particularly at the 'bottom of the pyramid'. The focus on the 'recycling' sector can yield dual benefits on revitalizing local economy and gaining access to carbon markets through greenhouse gases reduction/sequestration. Cost-Effective Recycling Units can be created at the Union-Council level to tap into the economic potential and multiplier effects of the recycling sector. Local Government Department – Sindh Solid Waste Management Board (SSWMB) can play an instrumental role in harnessing the untapped economic potential of waste recycling in Sindh (solid waste and agricultural waste).

The Government of Sindh is planning to implement a ‘Forestation’ project, under PPP mode, over 100,000 hectares spanning four districts along the riverine area. Similarly, a community-based project to convert cow dung into biogas is being conceptualized under the public-private partnership framework. Such initiatives can go a long way in terms of promoting carbon sequestration and catalyzing inclusive economic growth.

Sindh Enterprise Development Fund (SEDF) is the relevant agency for bridging the financing gap between micro- & small-enterprises and microfinance institutions in rural Sindh. With microfinance institutions charging exorbitant interest rates on loans, SEDF’s scope can be reconfigured to absorb the mark-up on loans from MFIs to these enterprises. Micro- and small-enterprises that lack collateral and unreasonable documentation requirements can benefit immensely through SEDF’s intervention in facilitating access to finance.

The relevant projects with the Public-Private Partnership Unit that can be considered for green financing are as follows:

- Mango Processing Project
- Larkana Fruit & Vegetable Wholesale Market Project
- Khairpur Khajoor Wholesale Market Project
- Dates Dehydration Project

Public-Private Partnership and International ‘Green’ Funds

International Funds, like (Green Climate Fund, Adaptation Fund, Least Developed Countries Fund & Special Climate Change Fund) can be a potential avenue for financing climate-resilient initiatives and incentivizing green economy and entrepreneurship. The recently approved ‘Loss and Damage Fund’ at the COP 27 can also be a potential funding source, once the institutional arrangements and implementation modalities are finalized, to harness public-private partnerships for climate-resilient investments. Given the ‘stressed’ economic conditions in the country, **the Government needs to proactively work with the private sector to conceptualize and concretize ‘green’ projects to access and effectively utilize the international funds.**

Public-private partnerships can be streamlined, channelized, and harnessed to catalyze the development of green projects across prioritized areas with the dual objective of revitalizing the economy and focusing on sustainable investments, including international financing arrangements. 'Common Facility Centers' can be introduced across districts for providing the most commonly needed facilities such as marketing, testing & quality measuring centers, and other business development services to facilitate enterprise development and reduce their respective operational costs and investments. The incubation centers and accelerators need to be reoriented to foster localized innovative green solutions to invigorate job creation and economic revitalization.

X. Institutional Arrangements

As we are faced with the largest recovery and reconstruction efforts ever, it is imperative for Government to establish an appropriate, effective, transparent, and institutional arrangements, for efficient recovery. For effective and efficient recovery, moving forward the institutional framework will feature a single point of coordination and management at the federal, provincial, and district levels. as proposed in the 4RF Framework.

Institutionalizing Urgency: Two themes that need to span the entire post-disaster continuum are the "need for speed" and "flexibility". Most government procedures are designed for normal times and for the implementation of normal development and recurrent budgets. Given the urgent need to address the dire circumstances of those impacted by floods, and given the scale of the disaster, the recovery program requires modified procedures and practices to meet the urgency of the recovery needs.

Coordinating centrally, implementing locally: Given the magnitude of the recovery effort, it is important for the government to build full-time teams of dedicated professionals whose mission is exclusively focused on recovery, coordination of recovery policies, financing, planning, implementation and monitoring. As proposed in the 4RF framework, this capacity will be housed in a dedicated Recovery and Reconstruction Unit (RRU) in the MoPDSI at the federal level and with links to dedicated RRUs at provincial and district levels. These units will draw upon the best expertise in both the public and private sectors and supplement that expertise through international technical assistance and expertise as needed.

Multi-tiered Mandates: While the federal government will lead overall coordination and policy formulation, the provincial and local governments will be primarily responsible for implementing the recovery, rehabilitation and reconstruction programs at the provincial level. For instance, the Government of Sindh has already established a Section-42 incorporated company to lead the Housing Reconstruction effort.

Establishment of an Independent Oversight Board, Third Party Monitoring, and Grievance Redressal Mechanism

While the government will lead the recovery effort, 4RF Framework suggests for an independent oversight mechanism representing the interests of stakeholders to be established to ensure accountability and transparency over the management of the reconstruction program. An IOB will be constituted at the national level composed of prominent citizens, professionals, etc. Key development partners will also be represented on the IOB as observers. Beyond a formal oversight board, steps will be taken to put in place formal, independent systems for third-party monitoring and public complaints/grievance redressal. Third-party monitoring will focus on checking the quality of a sample of individual reconstruction projects, their consistency with the recovery program and their responsiveness to local community needs. CSOs will be provided access at different phases of project implementation (especially procurement) for third-party monitoring and verification. An independent and robust Grievance Redressal Mechanism (GRM) will also be established, where beneficiaries can report problems.

Implementation through Existing Government Institutions as "First-Choice": Whenever possible, implementation arrangements would respect the mandate of existing institutions. Setting up parallel structures would be avoided. Instead, existing institutions would be supported with additional capacity to satisfy the additional requirements and expectations associated with large-scale reconstruction programs. However, where the size and/or nature of the recovery necessitates setting up a parallel structure, these will be rationalized and established with a specific mandate and legal basis. The establishment of the Housing Company in Sindh for housing reconstruction is an initiative in that direction with special dispensation for rapid implementation of the housing reconstruction program.

Build Capacity in Local Government: Disasters hit local governments hardest as they are called upon to meet exceptional challenges well beyond the scope of their normal, pre-disaster duties and capacities. Therefore, local governments will be supported in the short-term and a program of capacity building will be implemented in the long-term. The provincial/special regions RRU will provide immediate support for project preparation, implementation, and quality control at local levels.

Optimal Use of Private Sector Capabilities: Private sector services and capacities will be tapped where needed and appropriate. Some capacities required for reconstruction will be outsourced so that government institutions can continue to perform their normal operations. Outsourcing could benefit from innovative options like turnkey (design-build) and PPP models. Strict compliance with an efficient use of fast-track procurement and implementation procedures will incentivize the participation of capable and reputable consulting firms, contractors, and suppliers in reconstruction.

Based on the above, the outline of institutional arrangements for flood recovery and reconstruction are as follows.

Federal Level

- As per the 4RF framework guidelines, the PSC will provide the highest level of policy and strategic guidance at the federal and provincial levels. The PSC will ensure the equitable allocation of reconstruction resources among the provinces and the regions, and resolve inter-provincial issues related to reconstruction policy and implementation.
- The IOB will be set up based on the guidance above and will provide independent oversight of the recovery program. It will report its findings to the PSC, and in turn, the PSC will report to recovery partners and the public.
- The RRU in the MoPD&SI will coordinate national policies, planning, on- and off-budget financing, and implementation and monitoring of the recovery program.

Provincial Level

- Provincial government will establish a Steering Committee to provide overall guidance and oversight at the provincial level for the implementation of reconstruction programs. The Steering Committee will be chaired by the Chairman P&D Board and will include secretaries of the departments involved in reconstruction implementation. It will also have appropriate representation of the districts.
- A provincial RRU within the P&D Department will be responsible for coordination of reconstruction policies, planning, financing and implementation and monitoring. It will ensure compliance with reconstruction policies and strategies across the various sectors.
- Following the 4RF Framework guidelines, the existing provincial forums will approve the reconstruction projects submitted by the provincial departments. A representative of the RRU in the MoPDSI will be co-opted in the approval forum at the provincial level to improve coordination and synergies.
- With regards to federally transferred funds, the provinces will have the authority to approve projects up to a threshold to be determined by the government, including the possibility of unlimited delegated authority to approve subprojects under umbrella Planning Commission Form -1 (PC-1) approved at the federal level.
- The District Offices will set up an RRU which will be responsible for planning, designing, and implementing reconstruction projects which are to be implemented at the district and local levels. They will also facilitate partnerships with the local CSOs, NGOs, private sector, etc., for implementation of local-level reconstruction projects.

XI. Financing Strategy and Management

Objective of Finance Strategy

The objective of this financing strategy is to guide the identification, channeling and management of recovery, rehabilitation and reconstruction finances. It gives an overview of where the resources will come from, how the different types of financing will complement and leverage each other and how the use of funds will be monitored. The outcome of the financing strategy is to ensure the most efficient use of funds over the lifespan of the recovery, rehabilitation and reconstruction program, against short, medium and long-term priorities.

Initial Response from Own Source

Since the beginning of the floods in June 2022, the federal and provincial governments have been actively reprioritizing spending under existing projects. Funds under existing PC-1s have been repurposed to address relief and early recovery, while additional PC-1s have been restructured on an urgent basis within federal and provincial programs, particularly in Sindh. Despite these efforts, it is clear that the expenditure needs at both federal and provincial level have increased manifold.

Furthermore, federal and provincial governments have been revisiting the FY23 and FY24 pipelines of multilateral development partners to re-orientate them towards priorities identified in the PDNA. This requires a careful exercise in balancing future resources against reconstruction and recovery with medium-term investments in human development for a more sustainable socio-economic recovery. The next step in this process will be to conduct a reallocation of existing Public Sector Development Programme (PSDP) and ADP funds through a multi-year plan and budgetary adjustments to reflect this reprioritization.

Multilateral / Bilateral Financing

While major steps have been taken to address immediate needs and is commitment demonstrated to continue mobilizing own resources for medium- and long-term recovery, the crisis is of a magnitude which calls for international and bilateral partners to generously contribute towards achieving the objectives. Resource mobilization will also leverage international development assistance, bilateral financing, green financing and private sector funding to complement already-committed government financing. The emphasis for international financing will be on concessional and grant financing, to complement the domestic and private sector resources that will drive the recovery, rehabilitation and reconstruction program.

Role of the Private Sector and Public Private Partnership (PPP)

It is recognized that the private sector will play a key role in the recovery process. Measures

to mobilize private sector financing will include efforts to improve access to finance to firms and households, including support to microfinance sector. Blended finance and de-risking tools will be critical in mitigating risks and encouraging private-sector investment in underserved segments, such as agribusiness, Micro, Small and Medium Enterprises (MSME), low-income housing, non- government backed infrastructure, etc.

PPPs will be adopted to develop, operate and maintain infrastructure more effectively and efficiently. Enhancements to the PPP framework to allow private participation will be embedded in the overall recovery plans for infrastructure, while improved capacity and institutions for PPP will allow increased private participation in infrastructure. These frameworks will be strengthened by integrating climate costs in project designs and in the form of compensation payments in contracts in the scope of technical studies. 'Resilience' will be part of the evaluation criteria for tenders, with measures such as the requirement to include climate experts on project approval committees and partnerships with the insurance industry and engineering firms on the use of climate screening and risk forecasting tools. Moreover, structured and transparent procurement models under bankable concessions will help catalyze private investment in urban infrastructure and services, green buildings, transportation, water and sanitation, waste management, and transmission and distribution.

Climate Change Financing Options

Climate finance can draw on local, national or transnational financing—from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change. A variety of financial institutions play a role in climate financing – both public and private funding are needed to address the scale of environmental challenges facing an increasingly vulnerable proportion of the population. Impact investors across the return's spectrum is investing in climate action, including:

- Banks and other private financial institutions;
- Institutional asset owners, including pension funds, insurance companies, and sovereign
- wealth funds;
- Private wealth advisors and family offices;
- Foundations;
- Development Finance Institutions; and
- Public agencies and international development organizations

There are various vehicles available in Global Financial Markets that can be used to avail climate financing, debt forgiveness, and grants. These include:

- **Debt for Climate Swaps**: A debt swap, generally, is a refinancing deal wherein a debt holder (at individual or governmental levels) gains an equity position in exchange for the cancellation of the debt. It is usually practiced in finance when a struggling party can no longer service its debt. Through a debt-for-climate swap, in particular, the debtor country's debt stock is reduced in exchange for commitments of the debtor government to protect nature in varying forms. The international lenders forgive all or a portion of the debtor's external debt in exchange for a commitment by the debtor to invest, in domestic currency, in specific climate projects during a commonly agreed timeframe, based on larger nature, climate and environmental interests. These swaps can be undertaken through multilateral agencies like the International Monetary Fund, the World Bank Group, the Asian Development Bank and/or directly with other lender countries/consortiums like the Paris Club, Germany, France, Japan, China.

- **Carbon Credit Capital:** The United Nations' Intergovernmental Panel on Climate Change (IPCC) developed a carbon credit proposal to reduce worldwide carbon emissions in its 1997 Kyoto Protocol, based on an interest in reaching an international consensus on the importance of preserving the climate as a global public good. The agreement set binding greenhouse gas emission reduction targets for the countries that signed it. The concept of carbon credits (or carbon offsets) created a market in which individual countries and companies can trade emissions permits. Under the system, countries get a set number of carbon credits, which decline over time. They can sell any excess to another country. Open-market carbon credit selling may also be adopted as an option.

- **Global Mandates for Climate Financing:** There are various other long-term concessionary financing options along with grants from International Financial Institutions and other governmental agencies to fund climate mitigation and adaptation initiatives. To this end, the United Nations Framework Convention on Climate Change UNFCCC) was established to urge developed countries to lead the way "to stabilize greenhouse gas concentrations at a level that would prevent dangerous human induced interference with the climate system." The UNFCCC also called for new funds to climate change activities in developing countries. Under the UNFCCC, "industrialized nations agree to support climate change activities in developing countries by providing financial support for action on climate change—above and beyond any financial assistance they already provide to these countries. A system of grants and loans has been set up through the Convention and is managed by the Global Environment Facility (GEF) and Green Climate Fund (GCF)." The initiative binds its members to promote Environmentally Sound Technologies (ESTs), practices and processes that reduce GHG emissions. Pakistan's high vulnerability to adverse impact of climate change, specifically extreme climatic events, imply it is in critical need of innovative adaptation through the application of ESTs. Innovative adaptation of these technologies plays an essential role in mitigating climate change, dispensing with its causes and at the same time adapt to its outcomes.

- **Green Bonds:** In addition to multilateral funding agencies such as the Global Environment Facility and the Green Climate Fund which work on principle of dispensing money to climate mitigating or adaptive projects, green bonds are another way of financing projects which are environmentally friendly. These are incentivizing fixed-income instruments that are specifically earmarked for climate-related and other environmental projects. They may also take the form of tax incentives. International Finance Corporations, the ADB and the Bank of China are known to have experience and expertise in these financial instruments.

- **The Urban Climate Change Resilience Trust Fund** is a $150 million multi-donor trust fund administered by ADB in collaboration with The Rockefeller Foundation and the governments of Switzerland and the United Kingdom. It aims to support fast-growing cities in Asia to reduce the risks poor and vulnerable people face from floods, storms or droughts, by helping to better plan and design infrastructure to invest against these impacts. Funds are available for cities in the 8 priority countries, Pakistan being one of them. The fund uses a systems-centered approach that supports making climate change a central element of city planning. The Trust Fund provides technical assistance and investment grant financing to projects, to support climate change integration into city planning, implementation of both 'hard' (infrastructure) and 'soft' (policy or institutional) interventions and includes a strong knowledge component. These three components will help cities reduce the risks that rapid urbanization and climate change have on their population, particularly the urban poor.

- The Climate Investment Funds (CIF) is an enabler of pioneering climate-smart planning and climate action in low and middle-income economies, many of which are the least prepared yet the most prone to the challenges of climate change. CIF responds to the worldwide climate crisis with large-scale, low-cost, and long-term financial solutions to support countries achieve their climate objectives.

- UN Environment Programme: United Nations Climate Conference (COP27) Loss and Damage Fund: While many details remain to be negotiated, the fund is expected to see developing countries particularly vulnerable to the adverse effects of the climate crisis supported for losses arising from droughts, floods, rising seas and other disasters that are attributed to climate change.

Establishment of Climate Resilient Infrastructure Fund

In order to cater to Climate Change related damages and losses, GoS would establish a Climate-Resilient Infrastructure Fund (CRIF), which will be a non-banking financial institution and a mechanism through which investment will be channeled towards the development of public infrastructure. This will serve as a long-tenor loan- providing institution, specifically for the development of infrastructure including through joint public-private partnerships. During the detailed feasibility study, inclusion and fraction of grant making for climate-resilient projects will also be evaluated. The fund will, in addition to providing access to finance, also provide advisory services to infrastructure developers on the inculcation of climate-aware practices in new assets.

The CRIF design benefits from global practice where climate-resilient infrastructure funds invest in critical public assets and services such as electric and utility services, water infrastructure, roads etc. There are promising international examples where countries, with the support of international development institutions, have successfully introduced climate-resilient infrastructure fund solutions to their climate change challenges. For instance, the UKAID-funded Climate Resilient Infrastructure Fund in Africa has made strides in improving the ability of water infrastructure in Africa to withstand natural disasters. Similarly, the Pacific Island Countries have benefitted a great deal from the dedicated Australian Infrastructure Financing Facility. Interestingly, the facility has enhanced both the region's access to, and efficiency of, financial streams for climate combat by institutionally directing resources towards overall risk management investments rather than individual project-focused initiatives. Vouching for the benefits of public-private co-combatting of prevalent funding gaps, the World Bank has noted numerous successful examples in both developed and developing contexts. The specialized focus and optimal incentive structure inherent to such organizations, evidently, have led to 'green' wastewater treatment in cities within India, legislative optimization for climate-friendly development in Japan, and the increased application of rigorous resilient design standards amongst infrastructure developers in the Philippines

- **Ambit and Structure**: CRIF will be an independent legal entity with monetary contributions from GoS and other sources. It will operate with the objective of financing the implementation of various climate-resilient infrastructure projects across the province. In addition to providing financing, it will ensure the efficiency of investments in terms of pricing and optimal financial structuring of projects, eliminating adverse selection of risk and cases of moral hazard. Furthermore, CRIF will provide technical support to GoS and its various departments, units and entities in the identification, monitoring and assessment of projects for those targeted sectors that both GoS and financing partners prioritize.

- **Criteria for Project Eligibility:** The following is an initial list of eligibilities which is to be further developed along with the details of CRIF:

    - Projects aiming at developing resilient infrastructure from public and private organizations will be eligible to apply
    - Projects with self-generated revenues that are financially viable
    - Projects with self-generated revenues that are economically viable, but require monetary support. In such cases, if willing to provide such support, the Government can fill any viability gaps
    - Projects with no revenue generation capacity will be considered with reference to the public purpose and potential impact on mitigation and adaptation

   - The eligibility criteria will be periodically revised in response to evolving situation and practices in the province. The eligibility criteria will be further considered and finalized during the detailed feasibility and design work.

- **Capital Structure:** GoS will provide a one-time part of the initial capital, though the major chunk of required capital will be raised through concessional borrowings or grants from international finance organizations. Links will be established with other financing options evolving from COP27 and other international damage and loss funds, as well as mitigation and adaptation instruments. CRIF, itself, will be self-sustained and will provide for its administrative expenses through earnings from investments and generated fee incomes from its advisory and funding services.

- **Governance Structure:** CRIF will be a commercially managed independent financial institution, but it will also contain instruments aiming to serve public purposes. Its Board of Directors will afford membership to eminent professionals from the private sector and academia, including those from leading commercial banks and major contributing organizations.

- In terms of day-to-day management, CRIF will be overseen by professionals from the private sector with specialized skills in supporting green finance and climate resilience projects. For its successful management, the Board of Directors of CRIF will have annual business plans and budgets, prepared on the basis of cash flow projections and anticipated requests for financing. CRIF will work in partnership with both managing authorities of operational programmes and provincial authorities. To this end, it will ensure that there is optimal consensus on proposed plans for allocating financial resources. CRIF, through its Board of Directors, will be obliged to report on meeting its foundational objectives, progress on supporting resilient infrastructure, market trends, successes and constraints, and optimal allocation of finances for mitigation and adaptation purposes, and delineate measures for enhancing climate finance opportunities.
- A detailed feasibility study for CRIF will be carried out to further add to focus sectors and potential clients, types of financing required and the impact the fund is going to make. Simultaneously, work will be carried out with potential donor support to draft legal documents which define regulatory premises, institutional structure, governance framework and management procedures.

<u>Financial Management Frameworks</u>

For the effective financial management of finances for the rehabilitation and reconstruction activities in the flood 2022 affected areas a Financial Management Framework has been devised to ensure that flood recovery / reconstruction programs / activities are performed effectively & efficiently. The financial management strategy proposes audits to take place at two levels:

- Internal Audits: In the first step, the executing department will have an audit team that will undertake financial monitoring of the activities through the field technical staff, utilizing all its available resources. Audit checks must be undertaken at regular time intervals; short term, medium term and long term and the department will share the progress reports with the provincial government via Planning & Development (P&D) Department, Divisional and District administration and the M&E system of the P&D Dept on a regular basis. Findings must be supported by sufficient data with regard to the project objectives, level of work undertaken and the cost at which it is completed.

- External Audits: An independent, auditing firm must be brought on board to undertake regular financial audit checks over a short term, mid-term and final term project durations. The progress reports being generated by the firm will be shared with the provincial government via Planning & Development (P&D) Department, Divisional and District administration, the M&E system of the P&D Dept, and the international partners/donor organization(s) on a periodically agreed basis.

XII. Monitoring and Evaluation Strategy

The monitoring and evaluation plan will build upon existing structures of M&E Cells within different line Departments of Government of Sindh and will be further integrated with the existing reporting mechanism of Monitoring and Evaluation Cell of P&D Department, Government of Sindh. Furthermore, the M&E plan will have synergies and cross linkages with monitoring and Evaluation mechanisms based at the National Level.

The purpose of the M&E plan will be to carry out the tracking of flood-focused programmes on prioritized sectors and further inform respective departments on course correction and programme designing. The reporting generated through M&E plan will further inform outcomes of prioritized sectoral action plans. The M&E system will be focused on following key dimensions

What to Monitor and Evaluate	→	Short-term to medium term action plans
When to Monitor and Evaluate	→	Monthly/quarterly/Biannual monitoring and evaluation reporting
How to Monitor and Evaluate	→	Process Monitoring and spot checks Outcome and Impact Evaluation Tracking progress on Results based Framework of sector plans, programs and projects through M&E reporting
Who will Monitor and Evaluate	→	Chief Minister, Inspection Team Monitoring and Evaluation Cell (MEC), P&D Department M&E Cells Line Departments Third Party Monitoring & Evaluation

Figure 7: Monitoring & Evaluation System in Sindh

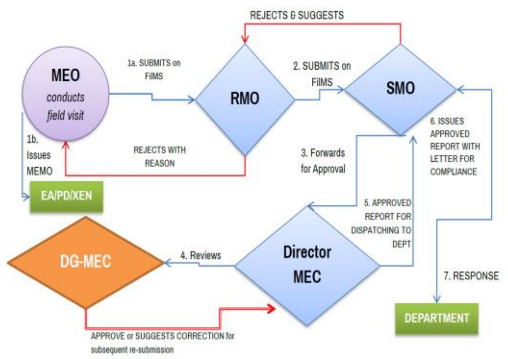
M&E Arrangement

Chief Minister Inspection Team

Chief Minister's Inspection Team may have a dedicated system for flood inspection and monitoring which consolidates and monitors data on damages and flood response. The team would work in liaison with PDMA and Provincial Line Departments to collate the latest updates on flood situation across Sindh so that briefing notes and summaries can be prepared for Chief Minister and the Provincial Cabinet on the disaster

Monitoring and Evaluation Cell, P&D Department, GoS

At institutional level, Government of Sindh comprises of Monitoring and Evaluation Cell (MEC) which is based within Planning & Development Department. The cell acts as a third-party monitoring agency and contributes towards the transparency & accountability of the executing agencies and administrative departments



In Flood 2022, MEC used their GIS based Information Management System to ascertain which schemes have been affected by the floods (along with GPS location and pictures to show damage). With existing capacity to monitor and carry out physical verification of ADP schemes through automated dashboard, MEC will further be part of institutional set up for carrying out process monitoring of schemes dedicated to flood response. MEC teams will submit regular progress reports which will then be fed into M&E plan and will be used for tracking progress on sectoral action plans. Following is the proposed process Monitoring that will be adopted for different ADP Schemes dedicated for flood response:

Monitoring and Evaluation for Sector Action Plans

The existing capacity of following monitoring and evaluation cells in Government line Departments will be used for tracking the results of sectoral action plans

Sectoral Action Plans	Responsible Department M&E Cell	Means of Assessment and reporting
Education	School Education and Literacy Department M&E Cell	Reporting on rehabilitated school facilities and Infrastructure
Health	Health Department M&E Wing	Reporting of rehabilitated health facilities Reporting on households provided access to universal health coverage in flood areas
WASH, Municipal Services and Community Infrastructure	M&E Cells of Public Health Engineering and Local Government Department	Households provided access to water and municipal services through integrated water resource management
Housing	M&E team of Resettlement Department	Reporting on households provided safe and secure housing with resettlement options
Transportation	M&E team of Transportation Department	Reporting on Number of roads rehabilitated Reporting on number of UCs and villages connected with markets
Agriculture	Planning Monitoring and Evaluation Cell (PMEC), Agriculture Department	Reporting on farmers provided agriculture in kind and financial support for cropping and livestock
Water and Irrigation	Irrigation Department and Sindh Irrigation Development Authority M&E teams	Reporting on flood embankments, dams and barrages developed and rehabilitated for flood mitigation
Social Protection	Social welfare Department M&E team	Reporting on number of households provided financial and in-kind support for livelihoods

Table 7: Monitoring & Evaluation as per Sector Action Plans

M&E Reporting and Results Framework

The M&E Plan as mentioned above will feed into sectoral plans. Each sectoral plan will have results-based management framework with outcomes and outputs covering each sector plan. The Results Framework at provincial level will be connected and interlinked with Ministry of Planning, Development & Special Initiatives (Govt. of Pakistan).

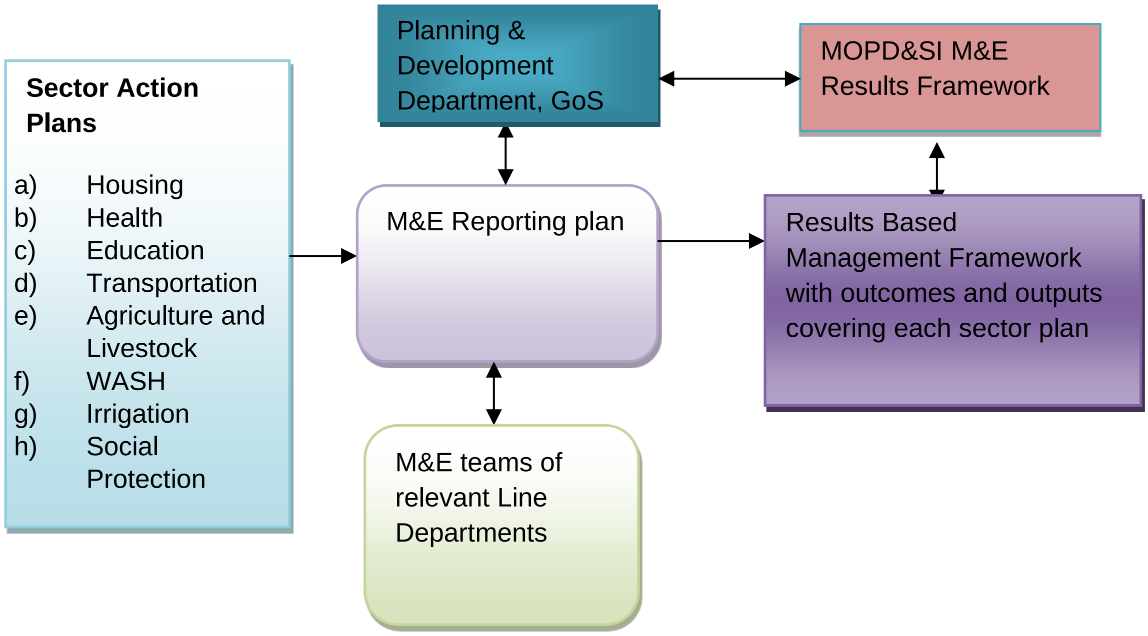


Figure 8: Monitoring & Evaluation Reporting & Results Framework

Monitoring and Evaluation Reporting Mechanism

Monitoring Component

Monitoring of flood context and response has been a regular ongoing exercise being carried out by different Line Departments in Sindh along with Provincial Disaster Management Authority. The efforts will be further continued utilizing the monitoring framework as depicted below:

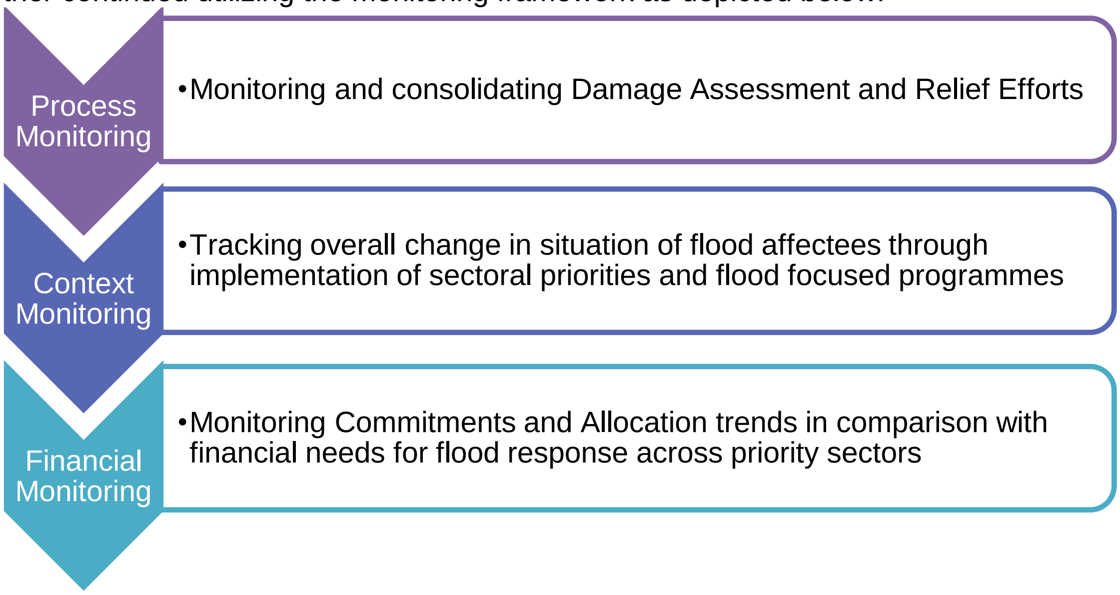


Figure 9: Types of Monitoring & Evaluation

Evaluation Component

The evaluation component will include the periodic assessment of envisioned flood programmes from perspective of outcome and impact evaluation aspects. The sectoral action plans will be used as the basis for designing and carrying out evaluation studies.

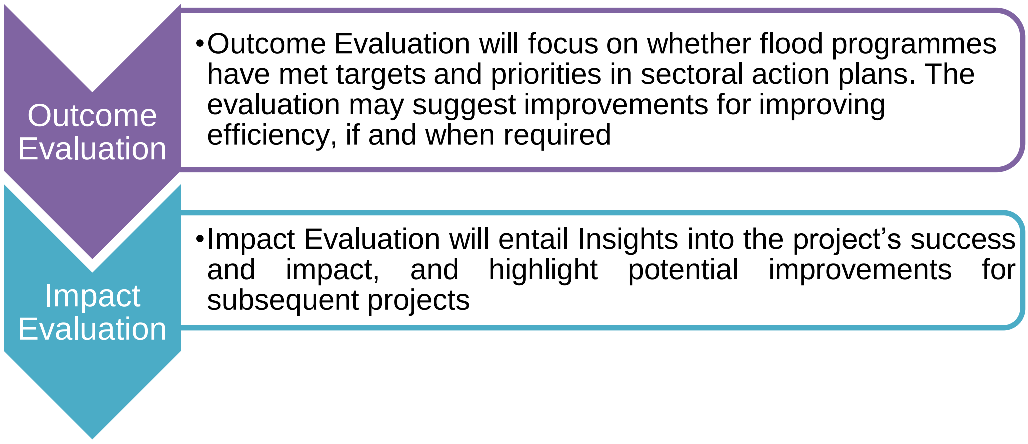


Figure 10: Outcome and Impact Evaluation

XIII. Conclusion

As delineated in the 'Post-Disaster Needs Assessment', Sindh has been at the receiving end of disproportionately significant damages and losses due to the recent floods. The adverse impact of climate change has disrupted every conceivable facet of life in the province. In this catastrophic context, 'Business-as-Usual' approach would be extremely detrimental to the province. The adverse impact of floods has 'undone' a significant chunk of public sector investments in the province as it permeated across all sectors. The well-documented devastation scale should catalyze the public sector development paradigm toward sustainable climate-resilient planning, programming, and investments.

Sindh's Strategic Action Plan for Floods Response is centered on addressing the 'systemic' issues that exacerbate the climate change impact and embedding environment-friendly practices in the public sector planning and development systems. The strategic action plan is a 'live document' that aims to guide Sindh's Flood Response to foster a focused implementation roadmap. The document may be recalibrated, reconfigured, and updated as per the evolving situation. The core focus of the action plan is to serve as an operational guide for strategic prioritization for planning, programming, and implementation for Sindh in the post-flood context.

The four pillars of the strategic framework hinges upon 'Rectifying the Systemic Issues', 'People-Centered Approach', 'Building Upon the Existing Models', and 'Aligning Existing Budgetary Framework with Resource Commitments'. The priority sectors of Drainage Systems (including Irrigation), Housing and Community Facilities, Livelihood, Communications, Health, and Education are focused as pivotal paths to sustainable rehabilitation and recovery.

Public sector resource constraints might limit the fiscal space for dealing with the scale of devastation in Sindh. However, the process of repurposing existing projects along with the conceptualization of new climate-resilient projects should continue. The role of the 'private sector' must not be overlooked as government can create an enabling environment for private sector investments in the green sector. Redirecting the development paradigm towards 'green investments' can provide an impetus to revitalize the economy, especially for the vulnerable and marginalized segments of the provincial population. With a global shift towards 'green transition', multi-pronged public-private partnerships can be leveraged to address the climate-related issues facing the country, especially Sindh.

The action plan reflects the preparedness of the government of Sindh in terms of prioritizing sectors and focusing on specific interventions that can yield the intended results to ensure that the province undergoes a resilient recovery. With an unprecedented scale of devastation due to the floods, Sindh needs 'all hands-on deck' with global support in terms of technical and financial assistance to truly uplift its population who have suffered tremendously.

Annexure – I

Sector-Wise Summary of Sindh's Financing Needs as per Post-Disaster Needs Assessment and Current Financing Needs

PDNA estimates are essentially 'bare-minimum' financing to meet reconstruction/rehabilitation needs to reach the pre-flood situation, which would increase when considering the 'resilient recovery' factor

(USD Million)

Sector	Financing Needs	Financing Commitment	Financing Gap
Water Resources & Irrigation (Drainage)	441.8	424.2	17.6
Health	122.4	54.5	67.9
Housing	2,080	727	1,353
Community Facilities & WASH	212.65	50.0	162.7
Livelihood (Agriculture & Livestock)	2,384.0	176.7	2,207.3
Communications (Roads)	475.0	301.9	173.1
Education	2,465.5	296.3	2,169.2
Social Protection	1,177.0	297.5	879.5
Total	**9,358.4**	**2,328.1**	**7,030.3**

Note: Estimates for the priority sectors are aligned with PDNA estimates (in terms of financing needs), however, Education and Housing Sector's estimates have been updated as per the actual figures based on the in-depth assessment of ground realities.

Annexure – II

Sector Wise Detailed Action Plans (USD Million)

Short-term (Up to one year), Medium-term (Up to three years), Long-term (Up to five to seven years) **USD Million**

Sector Name	Intervention/Activity (Numbered by priority, 1 = highest priority)	Cost of Immediate Short-term	Cost of Medium-term	Cost of long-term	Total Cost	Funding Commitment to Date	Source of Funding
Water Resources and Irrigation	**Policy/operational** 1, Assess existing operational policies, and suggest actions 2. Advise implementation priorities for canals	3.396	5.094	8.49 (WB)	16.98	16.98	World Bank
	1. Carry out stakeholders' engagement and consultation.	2.992	4.488	7.48 (WB)	14.96	14.96	World Bank
	Investments/programs						
Water Resources and Irrigation	1. Repair of breaches, plugging / closing cuts / bridges and temporary works	26.406 (WB)	XX	XX	26.41	26.40	There is a substantial need for LBOD (Cost TBD), however US$ 155 is committed by WB for Sindh Resilience Project. There is No Assessment of Right Side of River Indus Drainage Part.
	2. Rehabilitation of emergent works	77.637 (WB)	XX	XX	77.64	77.64	
	3. Rehabilitation works (restoration of irrigation & drainage network and flood detention dams / weirs	102.819 (WB)	25.82 (WB)	XX	128.64	128.01	
	4. Rehabilitation of Flood Protection Works	17 (ADP)	XX	155 (WB)	172	155	
	Institutional Effectiveness						
Water Resources and Irrigation	1.Institutional strengthening for resilience / studies / project management Identify opportunities for community contracting		5.182 (WB)		5.182	5.182	
	2. Capacity of institutions in procurement of consultant services, contractor & staff						
	Grand Total of Costs and Funding commitments to date in WR and Irrigation	**230.25**	**40.584**	**170.97**	**441.80**	**424.17**	**Financing Gap: US$17.6 million**

Sector Name	Intervention/Activity (Numbered by priority, 1 = highest priority)	Cost of Immediate Short-term	Cost of Medium-term	Cost of long-term	Total Cost	Funding Commitment to Date	Source of Funding
Health	**Policy/Operational**						
	1. Review current emergency preparedness plans including risk mitigation, assess their performance during the floods and Strengthen health sector for integral response. 2. Inclusion of RUTF on the government essential drugs list and indigenous production options	0.500	-	-	0.500		Review of the policies and processes will be done internally with little resources required
	Investments/programs						
	1.Provide essential health services (CDs, NCDs, RMNCAH, nutrition) through makeshift units, mobile outreach services and temporary established field hospitals including essential	6.465	1.860	0.000	8.325	4.650	Potential additional funding sources: Government, World Bank, Islamic Dev. Bank, Asian Development Bank etc
	2. Refurbish and maintain flood affected primary, secondary, and tertiary health facilities and replenishment of equipment and supplies	51.0	46.0	0.000	97.0	40.808	Government, World Bank, Islamic Dev. Bank, Asian Development Bank etc
	Institutional Effectiveness						
	Establish referral mechanism starting from communities with attendant, transport for complicated cases, Bridge critical HR gaps including outreach workers in uncovered areas and build capacity of health workforce	11.832	XX	XX	11.832	9.041	WHO, UNICEF, World Bank, Government etc.
	Strengthen surveillance and response systems to detect disease outbreaks,	1.395	1.395	1.395	4.185	Nil	WHO, UNICEF, Government etc.
	Enhance coordination at national and sub-national levels, including with development partners	0.100	0.100	0.100	0.300	Nil	WHO, UNICEF, Government etc.
	Strengthening national and subnational nutrition coordination and leadership	0.100	0.100	0.100	0.300	Nil	WHO, UNICEF, Government etc.
	Grand Total of Costs and Funding commitments to date in Health Sector	**71.392**	**49.455**	**1.595**	**122.44**	**54.499**	**Financing Gap: US$67.94 million**

Sector Name	Intervention/Activity (Numbered by priority, 1 = highest priority)	Cost of Immediate Short-term	Cost of Medium-term	Cost of long-term	Total Cost	Funding Commitment to Date	Source of Funding
Housing	**Policy/Operational**						
	1. Develop strategic vision, with principles, policies, strategies, standards and guidelines for housing	-	-	-	-	Nil	No such policy for the housing sector now. Suggested to formulate a comprehensive Policy, in line with national policy. 'Sindh Resettlement and Rehabilitation Policy' must be expedited
	2. Establish/ strengthen mechanisms for compliance, quality, accountability, and grievance redressal						
	3. Promote/ strengthen strategic land use and settlement planning, management, and land administration						
	Investment/Programmes						
	1.Prioritize and reconstruct/ rehabilitate houses	-	727	1,353	2080	727 US$ 500.0 million by WB & US$ 227 million by GoS	It is estimated that around 2 million houses have been damaged during the flood 2022. Around 28% damaged houses (0.560 million) are being covered under the current financial commitment. The remaining houses (72%) would be covered under long-term commitment

	Institutional effectiveness						
	1. Provincial level centralized institutional arrangements for housing reconstruction 2. Strengthening regulatory system and increase capacity of public and private sectors 3. Coordination mechanisms for settlement level mitigation and resilience measures & inter-sector investments	- -	- -		- -	Nil	Section 42 company "Sindh Peoples' Housing for Flood Affectees (SPHF) "has been established to execute housing project in Sindh Effective coordination of SPHF with relevant agencies for holistic settlements need to be institutionalized
	Grand Total of Funding needs and commitments to date in Housing Sector	**-**	**727**	**1,353**	**2,080**	**727**	**Financing Gap: US$1,353 million**
Sector Name	**Intervention/Activity (Numbered by priority, 1 = highest priority)**	**Cost of Immediate Short-term**	**Cost of Medium-term**	**Cost of long-term**	**Total Cost**	**Funding Commitment to Date**	**Source of Funding**
WASH and Municipal Services	**Policy/Operational**						
	1. Establishing appropriate regulatory implementation framework, Tariff structure.	0.90	1.10	0.60	2.60		Funding required
	2. Establishing proper interface between service providers and clients/beneficiaries. Social mobilization of communities for sustainability of WASH facilities	0.20	0.90	0.20	1.30		Funding required
	3. Policy framework for enhanced private sector involvement for WASH O&M. Realignment of existing policies & strategies such as: Sindh Sanitation Policy, Drinking Water Supply Policy, Behavior Change Communication Policy and Sindh Strategic Sector Plan regarding Drinking Water Sanitation and Hygiene	0.30	0.70	0.40	1.40		Funding required
	Investment/Programmes						
	1. Disaster and vulnerability assessments, Cleaning, disinfection, repairs, and interim arrangement for restoration of WASH	25	40	XX	65	50	50.00 M U$ has been committed by World Bank under SFERP)

	services (Improvement, augmentation extension and refurbishment of existing WASH services)						
	2. Resilient WASH facilities rehabilitation and upgrading	55	75	XX	130		
	Institutional effectiveness						
	1. Establishing sustainable O&M systems and increasing the role of the local communities in sustainable operations and maintenance	3.70	1.00	1.25	5.95		
	2. Institutional and HR Capacity building of departments at provincial and district level. (Capacity Building of Technical staff & providing them sources of mobility for proper M&E and OM)	3.00	1.75	0.12	4.87		
	3. Clear roles and responsibilities within the government departments of WASH program planning and implementation	0.70	0.70	0.13	1.53		
WASH	**Grand Total of Funding needs and commitments to date in WASH and Municipal Services**	**88.80**	**121.15**	**2.70**	**212.65**	**50**	**Financing Gap: US$162.65 million**
Sector Name	**Intervention/Activity (Numbered by priority, 1 = highest priority)**	**Cost of Immediate Short-term**	**Cost of Medium-term**	**Cost of long-term**	**Total Cost**	**Funding Commitment to Date**	**Source of Funding**
Agriculture and Livelihoods	**Policy/Operational**						
	1. Policies that accelerate gainful and productive jobs and employment 2. Specific reforms that boost demand aimed at creating alternate jobs and employment 3. Fast-track operational procedures for procurement of emergent goods & services 4. Create repository of vulnerable communities and link floods response plans as per poverty reduction strategies	-	100	-	100	Nil	Donor's assistance required. Sindh has its Agriculture Policy, however new policies and procedures linking flood response plans are required for; Job creation, economic growth, and green employment

	Investment/Programs						
	1. Restoration of jobs and livelihoods through;	242	-	-	242	22	Donor's assistance is required for other than existing commitment Bilateral, NGOs, Government
	i. Direct cash distribution; 12.138 million displaced persons (7 Persons HHs) @ Rs.10,000 pm for 3 months	56	30	-	86	56	
	ii. Agriculture inputs,	600	600	-	1200	77	
	iii. Cash for work interventions	67	200		267	9.5	
	iv. Agriculture value chain, food security and commerce/industries,						
	2. Recovery and reconstruction of critical assets (agriculture land, Livestock & SMEs)	100	92	**-**	192	4.65	
	3. Strengthening governance and stakeholder capacity for reconstruction, especially communities	40	57		97		
	Institutional effectiveness						
	1. Enhance the role of Rural Support Programs Network, NGOs, Communities for coordination of implementation in view of a localized interventions approach 2. Involve research and extension services in order to ensure transfer of innovative production practices to the rural crop farming, livestock owning and aquaculture farming households.		100	100	200	7.56	• RSPs, NGOs, CSOs • Communities • Government through Agriculture extension, Academia & Think Tanks
	Grand Total of Funding needs and commitments to date Agriculture and Livelihood	**1,105**	**1,179**	**100**	**2384**	**176.71**	**Financing Gap: US$2,207.3 million**

Sector Name	Intervention/Activity (Numbered by priority, 1 = highest priority)	Cost of Immediate and Short-term	Cost of Medium-term	Cost of long-term	Total Cost	Funding Commitment to Date	Source of Funding
	Policy/operational						
Communication (Roads)	1. Flood Susceptibility Analysis of entire road network 2. Geo-spatial tools for damage evaluation & assessment and prioritization of road infrastructure	3	2	-	5	1.9	$1.9 m by ADB
	Investments/programs						
	Emergency works for restoration of damaged / destroyed road network/connectivity	70	100		170	100	$100 m by WB/ADB
	Rehabilitation and reconstruction plan in the communication sector based on prioritization criteria (national to local) and its implementation	280	XX		280	200	$200 m by WB/ADB
	Institutional effectiveness						
	i. Encourage public private partnership in development and O&M of road infrastructure ii. Introduce disaster resilient road infrastructure iii. Creating asset registry of road network iv. Introduce mass transit and public safety	20	XX	-	20	-	Donor's assistance required
	Grand Total of Funding needs and commitments to date in Communications (Roads) sector	**373**	**102**	**-**	**475**	**301.9**	**Financing Gap: US$173.1 million**

Sector Name	Intervention/Activity (Numbered by priority, 1 = highest priority)	Cost of Immediate Short-term	Cost of Medium-term	Cost of long-term	Total Cost	Funding Commitment to Date	Source of Funding
Education	**Policy/operational**						
	Policy/operational 1. Introduce a mandatory and costed DRM component in sector plans. 2. Update and operationalize the union council / campus/ cluster / taluka / district / regional specific Safety Framework. 2. Develop district-based (i) emergency response and evacuation plans and drills, (ii) early warning systems, and (iii) learning continuity plans 3. Establish PPPs with agile and low-cost delivery models, including support to education foundations. 4. Developing resilient, sustainable structural design(s) / SOPs / standard for environmentally sustained educational buildings. 5. Introduce low-interest loans for damaged private schools to allow education continuity during reconstruction.	0.4	4.5	7.6	12.5	**0.00**	**Funds required**
	Investment Programs						
	1. During Emergency in education (EIE), temporary learning centers in rain /flood affected 24 districts by providing Tent & other supplies (stationary, transport, monitoring, teaching learning material) in institutes of these districts, having sufficient enrolment (2.4 million). In order to resume learning via a comprehensive TLC package, and develop evidence-based local remedial plans to recover learning loss and bridge learning gaps for affected children and out-of-school children.	10.00	0	0	10.00	0.07 (UNICEF)	Funds required

	Conduct damage assessment of affected public/private educational institutions, establish temporary or hired facility in fully damaged institutions, rehabilitate, and reconstruct damaged educational institutions, applying BBB principles with updated design standards	04	0	0	04.00	0	Funds required
	Introduce vouchers for students to attend private institutions if their schools are unable to resume operations within 2-3 years	05	05	0	10	0	Funds required
	Construction of shelter-less schools (4867), re-construction of fully damaged educational institutes (7503) and partially damaged educational institutes (12305)	452.74	572.33	1395.91	2420.98	296.31	155 (SELECT), 82.5 (SSEIP) 58.74 (ADP) Remaining funds required
	Institutional Effectiveness						
	1. Establish a process to track recovery efforts, linked to the district level and provincial flood recovery plan and integrated into the national and M&E processes. 2. Advance community mobilization / sensitization on access to learning opportunities and participation in response and recovery efforts. 3. Mobilize and train PTAs, SMCs, and SCs on safe school reopening, MHPSS, IPC, and GBV risk mitigation measures, and preparation of school disaster management plans 4. Provide continuous, needs-based teacher professional development opportunities. Establish gender- responsive monitoring systems to measure access and learning outcomes, including a registry of newly enrolled out-of-school children and adolescents.	5.6	1.9	0.5	8.0	0.00	Funds required
	Grand Total of Funding needs and commitments to date in Education Sector	**477.74**	**583.72**	**1404.07**	**2465.47**	**296.31**	**Financing Gap: US$2169.2 million**

Sector Name	Intervention/Activity (Numbered by priority, 1 = highest priority)	Cost of Immediate Short-term	Cost of Medium-term	Cost of long-term	Total Cost n	Funding Commitment to Date	Source of Funding
Human Impact	**Policy/ operational**						
	Support in the policy framework development and design and implementation programs targeting the most vulnerable population and geographical areas (short-medium term).						Policy framework exists in Sindh i.e. Sindh Poverty Reduction Strategy, Social Protection Strategy and Rural Growth Centers
	Investment Programs						
	Investments/programs **1.** Mother & Child Support program offers conditional cash transfer during pre-natal, delivery and post-natal phases of mothers to improve mother and child health and development of integrated social registry	230	300	-	530	230 (WB-200) (GoS-30)	Funding Required
	2. Provision of interest free loan for poor/vulnerable communities through community investment fund in rural vicinities of Sindh	32.79	100	100	232.79	32.79 (GoS)	Funding Required
	3. Enterprise Development fund for business loan to boost economic activity in rural areas of Sindh and improve livelihood and sustainability in rural areas	8.72	150	100	258.72	8.72 (GoS)	Funding Required
	4. Low-Cost Housing on self-construction model where Govt. would provide construction material and supervise implementation through local implementation partners	21.316	100	-	121.31	21.316 (GoS)	Funding Required
	5. Provision of kitchen gardening kits to the poor households on the basis of poverty score card for food security	0.7	5	5	10.7	0.7 (GoS)	Funding Required
	6. Income Generation Grant in cash for different purpose i.e. livestock, agriculture equipment's & machineries	4.023	19.5	-	23.52	4.023 (GoS)	Funding Required
	Grand Total of Financial Needs and Commitments in Social Protection Sector	**297.549**	**674.5**	**205**	**1,177**	**297.55**	**Financing Gap: US$879.5 million**

Annexure-III

The departmental breakdown of the schemes approved before 2010 is as follows:

(In Rs. Million)

S. No.	Department	No. of Schemes	Cost	Throw-Forward	Allocation (CFY)
1	Agriculture	1	490.50	117.95	67.95
2	Board of Revenue	3	2,697.90	367.57	201.25
3	Culture, Tourism, Antiquities & Archives	1	86.90	39.74	0.50
4	Education (School)	9	13,691.30	5729.49	131.01
5	Education (College)	2	3,211.60	482.31	327.83
6	Education (U & B)	2	1,301.50	174.83	152.14
7	Education (STEVTA)	1	110.30	47.13	47.02
8	Excise & Taxation	1	86.50	0.18	0.18
9	Health	8	13,510.50	5,035.84	3,513.70
10	Home	3	1,110.40	190.36	50.00
11	Industries & Commerce	2	301.60	212.99	58.69

S. No.	Department	No. of Schemes	Cost	Throw-Forward	Allocation (CFY)
12	Law, P.A. & Prosecution	4	748.80	265.50	35.04
13	Livestock & Fisheries	4	2,954.70	191.54	4.00
14	Matching Allocation	2	3,555.80	3,555.80	48.00
15	Provincial Ombudsman	1	75.00	19.06	3.75
16	Public Health Engineering	4	1,595.80	269.58	296.97
17	Social Welfare	1	265.00	121.22	69.66
18	Sports & Youth Affairs	5	4,238.50	880.08	155.20
19	Transport & Mass Transit	1	102.20	25.71	0.10
20	Works & Services	7	8,353.20	3,393.21	2,976.30
Total		**62**	**58,487.89**	**21,120.03**	**8,139.29**

The departmental breakdown of the schemes approved between 2010-18 is as follows:

(In Rs. Million)

S. No.	Department	No. of Schemes	Cost	Throw-Forward	Allocation (CFY)
1	Agriculture	6	8,835.50	5,838.71	1,822.13
2	Auqaf, Zakat, Ushr, RA	3	325.90	94.01	47.71
3	Cooperative	1	118.40	11.00	11.00
4	Culture, Tourism, Antiquities & Archives	14	5,381.80	1,443.61	791.92
5	Education (School)	33	22,685.40	5,339.25	3,244.68
6	Education (College)	13	14,607.60	6,732.42	2,861.43
7	Education (U & B)	27	25,103.90	15,452.53	4,026.90
8	Education (STEVTA)	17	7,919.00	4,680.79	1,030.04
9	Education (DEPD)	1	199.90	101.29	98.28
10	Energy	1	440.11	275.19	114.00
11	Environment	3	288.00	148.71	148.71
12	Finance	2	6891.40	6293.49	1016.90
13	Food	2	1052.70	692.68	235.47

S. No.	Department	No. of Schemes	Cost	Throw-Forward	Allocation (CFY)
14	Health	96	42,847.40	14,563.40	9,739.81
15	Home	31	13,205.10	8,002.36	2,172.65
16	Human Settlement	2	78.60	27.40	21.05
17	Industries & Commerce	3	1899.33	558.18	113.64
18	Information S&T	1	382.70	264.57	261.94
19	Irrigation	49	42,213.40	7,975.40	2,838.78
20	Law, P.A. & Prosecution	26	5,572.50	1,848.59	666.36
21	Lining of Main Canals	1	9,989.70	3,139.34	800.00
22	Livestock & Fisheries	6	4,896.30	3,564.05	351.30
23	Local Government	85	87,284.60	37,213.85	12,455.17
24	Matching Allocation	2	6,308.50	797.25	382.00
25	Mega Projects Khi	1	214.50	102.34	102.34
26	Mines and Minerals	1	39.80	39.80	19.50
27	Minorities Affairs	4	2,514.00	1,532.33	138.44

S. No.	Department	No. of Schemes	Cost	Throw-Forward	Allocation (CFY)
28	Planning & Development	8	12,979.30	5,939.76	4,074.18
29	Population Welfare	2	2,554.60	1,429.75	159.82
30	Public Health Engineering	52	26,228.80	9,071.69	5,898.70
31	Rehabilitation	1	891.90	315.20	220.00
32	Rural Development	3	6,827.00	1,158.11	502.00
33	SGA&CD	12	13,349.50	10,976.57	793.69
34	Sindh Revenue Board	2	2,460.20	2,460.17	10.00
35	Social Welfare	5	276.30	99.10	43.38
36	Thar Coal Infrastructure	2	5,186.40	1,695.53	34.72
37	Transport & Mass Transit	3	4,707.70	1,290.88	1,248.05
38	Women Development	6	799.90	393.20	202.55
39	Works & Services	40	29,015.20	10,192.27	7,141.58
Total		**567**	**416,572.49**	**171,754.74**	**65,840.82**

Annexure-IV

Provincial ADP Schemes in Current Development Portfolio (CFY) (Contributing to Floods Rehabilitation)

Note: OG (Ongoing Schemes), NA (New Approved Schemes), NU (New Unapproved Schemes)

(In Rs. Million)

Departments		# Schemes	Cost	Throw-Forward	Allocation	Releases	Expenditure
Agriculture, Supply & Prices		**1**	**6,120.000**	**4,272.211**	**750.000**	**750.000**	**497.025**
	OG	1	6,120.000	4,272.211	750.000	750.000	497.025
Education (College)		**45**	**3,136.057**	**2,780.697**	**1,200.204**	**1,025.379**	**367.221**
	NU	4	285.000	305.000	70.000	0.000	0.000
	OG	41	2,851.057	2,475.697	1,130.204	1,025.379	367.221

Departments		# Schemes	Cost	Throw-Forward	Allocation	Releases	Expenditure
Education (Dept. for Empowerment of People with Disabilities)		**28**	**6,367.249**	**7,185.936**	**905.562**	**23.499**	**0.000**
	NA	1	250.000	280.000	30.000	0.000	0.000
	NU	26	6,063.500	6,850.625	857.125	0.000	0.000
	OG	1	53.749	55.311	18.437	23.499	0.000
Education (School)		**269**	**30,951.005**	**24,415.069**	**4,358.433**	**3,383.739**	**784.867**
	NA	22	1,354.795	1,489.627	134.832	0.000	0.000
	NU	95	6,041.435	6,617.079	575.644	2.005	0.000
	OG	152	23,554.775	16,308.364	3,647.958	3,381.734	784.867

Departments		# Schemes	Cost	Throw-Forward	Allocation	Releases	Expenditure
Education (STEVTA)		**17**	**1,983.987**	**1,456.790**	**222.071**	**68.584**	**0.000**
	NU	10	522.000	583.875	88.875	0.000	0.000
	OG	7	1,461.987	872.915	133.196	68.584	0.000
Education (U&B)		**11**	**2,560.453**	**2,493.335**	**599.841**	**98.714**	**0.000**
	NA	2	1,416.000	1,556.000	140.000	0.000	0.000
	NU	6	455.197	478.936	289.024	0.000	0.000
	OG	3	689.256	458.399	170.818	98.714	0.000
Environment & CDA		**2**	**1,156.008**	**1,261.128**	**162.000**	**32.175**	**0.000**
	OG	2	1,156.008	1,261.128	162.000	32.175	0.000
Health		**3**	**266.830**	**168.891**	**59.244**	**2.425**	**0.000**
	OG	3	266.830	168.891	59.244	2.425	0.000

Departments		# Schemes	Cost	Throw-Forward	Allocation	Releases	Expenditure
Irrigation		**57**	**41,807.606**	**32,168.711**	**3,204.984**	**2,537.523**	**1,826.093**
	NA	1	4,800.000	4,820.000	20.000	0.000	0.000
	NU	9	4,610.476	4,879.476	269.000	0.000	0.000
	OG	47	32,397.130	22,469.235	2,915.984	2,537.523	1,826.093
Local Government (Water Supply)		**228**	**98,005.645**	**69,224.665**	**19,513.494**	**18,518.671**	**8,835.231**
	OG	228	98,005.645	69,224.665	19,513.494	18,518.671	8,835.231
Livestock & Fisheries		**11**	**1,520.817**	**1,766.918**	**323.415**	**161.820**	**10.974**
	NU	5	459.000	516.500	57.500	0.000	0.000
	OG	6	1,061.817	1,250.418	265.915	161.820	10.974

Departments		# Schemes	Cost	Throw-Forward	Allocation	Releases	Expenditure
Public Health Engineering		**366**	**68,577.001**	**55,564.644**	**11,512.349**	**9,875.742**	**2,838.012**
	NA	88	12,135.715	13,482.434	1,346.719	0.000	0.000
	NU	51	10,709.943	11,719.906	1,047.963	0.000	0.000
	OG	227	45,731.343	30,362.304	9,117.667	9,875.742	2,838.012
Rural Development		**2**	**39.000**	**29.317**	**9.750**	**19.305**	**2.180**
	OG	2	39.000	29.317	9.750	19.305	2.180
Works & Services		**88**	**27,439.457**	**12,633.634**	**4,493.926**	**5,342.788**	**3,037.151**
	OG	88	27,439.457	12,633.634	4,493.926	5,342.788	3,037.151
Grand Total		**1128**	**289,931.115**	**215,421.944**	**47,315.271**	**41,840.362**	**18,198.754**

(In Rs. Million)

Annexure-V

Joint Survey – Flood Housing Damage Assessment 2022

District	HHs (Fully Damaged)	HHs (Partially Damaged)
Khairpur	224,346	54,820
Dadu	133,295	34,714
Kambar Shahdadkot	118,132	29,478
Naushahro Feroze	105,110	43,688
Larkana	102,163	30,455
Jacobabad	89,784	24,073
Shaheed Benazirabad	72,791	41,588
Shikarpur	72,212	19,047
Sanghar	66,464	39,443
Badin	62,124	49,125
Ghotki	52,152	32,668
Sukkur	51,334	32,958
Mirpur Khas	49,943	36,516
Kashmore	44,540	32,027
Jamshoro	43,290	18,460
Umerkot	31,797	36,811
Matiari	26,662	20,043
Sujawal	25,531	27,168
Tando Allahyar	20,597	9,555
Tando Mohammad Khan	18,801	9,628

Thatta	11,684	13,084
Hyderabad	9,069	11,119
Tharparkar	5,056	3,786
Malir	37	18
Total	**1,436,914**	**650,272**

Contributing to Sindh Floods Response

Your Valuable Contributions Can Change Lives!

Thank you for your expression of interest in supporting the rehabilitation and recovery of the province of Sindh (Pakistan) in the aftermath of the devastating floods of 2022! A short survey is embedded in the QR Code to help us gauge the information and priority areas of the contributions:

https://bit.ly/3HNkGrH

After filling out this short survey to express your priority area(s) of support, you will be contacted within 7 working days to go over the details and way forward. If you would like to reach us directly, please write to us at chairmanpnd@sindh.gov.pk or contact us at (+92)-021-99211404 & (+92)-021-99211405.

The action plan document can be downloaded from the Planning & Development Department's website: https://pnd.sindh.gov.pk/