



**Government of Pakistan
Ministry of Water Resources
O/o Chief Engineering Advisor/Chairman
Federal Flood Commission, Islamabad**



PROJECT BRIEF

FLOOD PROTECTION SECTOR PROJECT-III (FPSP-III) UPDATED

prepared on the basis of

UPDATED 4th NATIONAL FLOOD PROTECTION PLAN (UPDATED NFPP-IV)

July 2024

6-Attaturk Avenue, G-5/1, Islamabad

**Government of Pakistan
Ministry of Water Resources
Office of the Chief Engineering Advisor &
Chairman Federal Flood Commission**

**BRIEF ON FLOOD PROTECTION SECTOR PROJECT-III (FPSP-III)
BASED ON NATIONAL FLOOD PROTECTION PLAN-IV**

I. Background

- In the aftermath of 2010 devastating floods, causing a total cumulative damage to the tune of **USD 10.056 billion**, fourth (4th) National Flood Protection Plan (NFPP-IV), for 10 year time frame, was formulated at a total investment cost of **Rs 332.246 billion**. The Plan was approved by CCI in its 4th meeting on **May 02, 2017**.
- With the implementation of NFPP-IV, the then following benefits were envisaged:
 - Saving of about **779,250 hectares** of land from erosion;
 - Reclamation of **154,176 hectares** of land; &
 - Protection of around **2,479,555 hectares** of land from inundation
- For the total Plan cost of **Rs 332.246 billion**, an Umbrella PC-I was prepared and processed for CDWP's approval in **April 2019**. Pre-CDWP meeting advised to **curtail its cost** owing to tight financial position, by only keeping the top priority interventions.
- Accordingly, rationalized Umbrella PC-I (FPSP-III) costing **Rs 95.980 billion** was processed through Ministry of Water Resources (MoWR) for CDWP's approval. CDWP approved/recommended the Umbrella PC-I in its meeting held on **October 12, 2020** for further consideration/ approval by ECNEC subject to exploring the financing expeditiously by EAD.
- Despite efforts by Economic Affairs Division (EAD), Government of Pakistan, till 30th June 2022, no financing was available from foreign donors i.e. ADB, World Bank, JICA etc.

II. Need for Formulation of Updated FPSP-III

- In view of devastating 2022-rains/ floods experienced by the country, the then Prime Minister of Pakistan, in a meeting held on **29th August 2022**, directed PD&SI Division that **"Flood Protection Plan 2017 to be updated and protection measures against flash floods and hill torrents to be included in the Plan"**.
- In compliance to above, CDWP re-considered the already processed Umbrella PC-I of FPSP-III in its meeting held on **14th September 2022** and decided to also update it by including fresh proposals based on lessons learnt from 2022-Floods, specifically in the context of flash floods, hill torrents and drainage system.
- Given the preceding, M/s Deltares of Netherlands undertook updating NFPP-IV through ADB financing and in consultation with all concerned federal and provincial stakeholders mainly the Federal Flood Commission (FFC).

- For the above, FFC extended all possible support to ADB for NFPP-IV updation and organized many stakeholders' meetings.
- **FPSP-III (updated)** is part/ Phase-I of the **updated NFPP-IV**.

III. Scope of Sub-Projects proposed under FPSP-III

- **Structural Interventions**, proposed under FPSP-III, include construction of flood embankments/ dikes, spurs, retaining walls, flood diversion/dispersal structures, small/ medium dams for conservation of flood water, strengthening/remodeling of flood embankments/dikes & improvement of drainage network etc. These interventions will be implemented mainly through Irrigation Departments of the four Provinces, Federal Line Departments (G-B, AJ&K and Merged Areas).
- **Non-Structural Interventions** mainly comprise of Improvement works of Flood Forecasting & Early Warning System, Establishment of Regional FF&W Centres (by **PMD**), Installation of Flood Telemetry Network & Watershed Management Interventions by **WAPDA** along main, secondary & tertiary rivers and Construction of Ecosystem-based interventions by **M/o CC&EC** through Recharge Pakistan Project.
- Abstract of cost and details related to structural and non-structural measures proposed under the updated FPSP-III is attached as **Annex-I**.

IV. Socio-Economic Benefits related to FPSP-III

- The implementation of FPSP-III is expected to accrue following benefits: -
 - a. Saving of about **15.761 million population** from future floods;
 - b. Protection of **8.050 million Acres of agriculture land** from inundation
 - c. Protection of **2.2 million houses**;
 - d. Protection of **76 schools**;
 - e. Protection of **331 Km Metalled Road**;
 - f. Protection of **64 villages**;
 - g. Protection of **223 Tube Wells**; and
 - h. Protection of **3,825 Farm Families**

V. Approval Status & Project Duration

- Pre-CDWP meeting was held on **March 16, 2023** to review the umbrella PC-I of FPSP-III (updated), wherein the project was recommended for consideration of CDWP/ ECNEC subject to clarification of some observations of PD&SI Division.
- Replies to Pre-CDWP observations were submitted to PD&SI Division on **April 12, 2023**. Thereafter, CDWP considered the project in its meeting held on **May 23, 2023** and approved/ recommended the project for ECNEC's consideration.
- Consequently, updated Umbrella PC-I costing **Rs 194.625 billion** stands approved by the ECNEC in its meeting held on **June 27, 2023**.
- Subsequently, MoWR issued Administrative Approval on **July 25, 2023**.

VI. Financing Arrangements & Potential Donor Agencies

- ECNEC approved the project with following financing plan: -
 - GOP Equity = 20% Federal Components + 10% Provincial Components
 - Provinces = 10% Provincial Components
 - Donor Financing = 80%
- PD&SI Division kept Rs. 10 billion (Rs. 1 billion GoP as local share & Rs. 9 billion as external financing) under PSDP 2023-24 for implementation of FPSP-III updated. Subsequently, MoWR reduced external share to Rs. 1 billion by re appropriating FPSP-III allocation to foreign aided projects of WAPDA.
- Provinces were requested to ensure matching Provincial funds under their respective ADPs of FY 2023-24. So far, PID, Balochistan has reported an allocation of Rs. 232.408 million under ADP 2023-24 for their FPSP-III sub-Projects. Likewise, Government of Punjab has approved an ADP allocation of Rs. 445.63 million under C.F.Y 2023-24 for their FPSP-III sub-projects subject to concurrence from Election Commission of Pakistan.
- EAD was requested on **August 18, 2023** to secure external financing from each agency/ donors (As per ECNEC decision).
- For implementation of structural measures of FPSP-III, **pipeline financing** indicated by **IsDB** is worth **USD 240 million** while by **AIIB** worth **USD 120 million**. Besides, **Chinese Grant** of **USD 100 million** is also under consideration with EAD to partially support implementation of few FPSP-III sub-projects.
- Besides, financing for FPSP-III is also being explored by EAD under the proposed ADB funded Climate Disaster Resilience Enhancement Program (CDREP).
- In line with above, EAD in close coordination with PD&SI Division and Ministry of Finance is making efforts in order to finalize **Loan Agreements** and **Grant Funding** required for implementation of FPSP-III updated.

VII. Coordination mechanism with Provinces and other Stakeholders

- Project Steering Committee (PSC) under Deputy Chairman Planning Commission has been notified (**August 29, 2023**).
- ADB & NDRMF have been requested to fund establishment of **Project Coordination & Management Unit** in line with approval of ECNEC.
- Capacity Building of under-staffed and under-privileged FFC is direly needed for implementation of updated FPSP-III/ NFPP-IV.
- PC-I for establishment of **Project Coordination & Management Unit** has been prepared by FFC and submitted to MoWR on March 28, 2024 for its approval by CDWP.
- Besides, a Provisional **Project Coordination & Management Unit (PCMU)**, based on existing strength of FFC, stands notified and established in FFC.
- Matter regarding early processing of Individual PC-Is of FPSP-III Updated is being pursued with the executing agencies.

VIII. Timelines

- The project will be implemented in the next five (05) years period.
- **Annual Work Plan (2023-24)** for updated FPSP-III was finalized based on Stakeholders Meeting held on **September 05, 2023** and stands submitted to MoWR. In included 38 priority sub-projects.

IX. Current Status

- In line with the ECNEC's approval, PC-I for establishment of **Project Coordination & Management Unit** has been prepared by FFC and submitted to MoWR for its approval by the CDWP.
- So far, two Meetings of FFC's **Securitizing Committee on FPSP-III sub-Projects** have been held respectively on **September 18, 2023** and **December 18, 2023**.
- PC-Is/PC-IIs of **twelve (12) Sub-Projects of FPSP-III project** were considered in the above meetings. The Committee recommended following Five (05) FPSP-III sub-projects and their amended PC-Is stand submitted to MoWR for approval by CDWP/ECNEC:

Sr. No.	Name of Sub-Projects	Estimated Cost in PKR
1.	National Master Plan for Flood Telemetry Network (Phase-I) (Appendix-VIII, WAPDA sub-projects, Sr. No. 2, Page # 80 of FPSP-III PC-I)	Rs. 15,496.00 Million
2.	PC-I for Strengthening and O&M of Glacier Monitoring Research Centre. (Appendix-VIII, WAPDA sub-projects, Sr. No. 3, Page # 80 of FPSP-III PC-I)	Rs. 350.00 Million
3.	PC-I for Strengthening and O&M of SWHP Network. (Appendix-VIII, WAPDA sub-projects, Sr. No. 4, Page # 80 of FPSP-III PC-I)	Rs. 380.31 Million
4.	PC-I for Strengthening and O&M of High Frequency (HF) Radio Network & Flood Information Centre (FIC). (Appendix-VIII, WAPDA sub-projects, Sr. No. 5, Page # 80 of FPSP-III PC-I)	Rs. 884.46 Million
5.	Restoration/ Rehabilitation of Malir Weirs-I, II, III & Thado Dam. (Appendix-II, Sindh sub-projects, Sr. No. 3 Page # 67 of FPSP-III PC-I)	Rs. 13,950.451

- Following seven (07) Sub-projects were deferred with the directions to re-submit amended PC-Is after complete compliance of observations of FFC's Scrutinising Committee:

Sr. No.	Name of Sub-Projects	Estimated Cost in PKR
1.	PC-I of Expansion of Meteorological Network by Installation of Automatic Weather Stations in Pakistan under FPSP-III; and	Rs. 5,025.392 Million
2.	Establishment of Regional Flood Forecasting and Early Warning System of PMD under FPSP-III	
3.	Construction of T-Spur and stone apron at Mile 135/5 along S.M Bund (Bhanoth) in Saeedabad, District Matiari, Hala Bund Sub Division. (Appendix-II, Sindh sub-projects, Sr. No. 1 Page # 66 of FPSP-III PC-I)	Rs. 874.082 Million
4.	Rehabilitation of Qadirpur Shank & Construction of Stone Studs and T-Head, District Ghotki. (Appendix-II, Sindh sub-projects, Sr. No. 25 Page # 68 of FPSP-III PC-I)	Rs. 3,404.763 Million
5.	Hydrological Assessment of Hill Torrent Potential and Strategies for Efficient Utilization to Mitigate Flooding in Southern Punjab, Upper Sindh and Northern Balochistan Regions. (PC-II) (Appendix-X, PCRWR sub-projects, Sr. No. 1 Page # 82 of FPSP-III PC-I)	Rs. 63.160 Million
6.	Improving Climate Resilience in Gilgit Baltistan through Headwater Management, Geochemical Assessment and Risks Characterization of Rivers, Springs & Lakes. (PC-II) (Appendix-X, PCRWR sub-projects, Sr. No. 2 Page # 82 of FPSP-III PC-I)	Rs. 118.383 Million
7.	Integrated Water Resources Development and Management through Rainwater Harvesting, Bio-Saline Agriculture and Aquaculture in the Thar Desert. (PC-II) (Appendix-X, PCRWR sub-projects, Sr. No. 3 Page # 82/FPSP-III PC-I)	Rs. 110.590 Million

Issues/ Way Forward

- EAD to expedite the process for securing matching external funding required to start implementation of FPSP-III on ground. As per the approval of ECNEC, the financing modality of FPSP-III is 80:20 (80% from external donors & 20% by GoP) and without any loan/ grant agreement/formalities from the external donors, implementation of FPSP-III could not be materialized.
- Allocation requested under PSDP 2024-25 may be allocated for FPSP-III.
- PD&SI Division to accord early approval of PC-I prepared for Establishment of PCMU of FPSP-III.

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FLOOD PROTECTION SECTOR PROJECT-III (FPSP-III)-UPDATED**ABSTRACT OF COST**

Sr. No.	Description	No. of Sub-Projects	Estimated Cost (Rs Million)
A	Structural Interventions		
1.	Punjab	12	29,708.250
2.	Sindh	40	50,570.590
3.	Khyber Pakhtunkhwa (KP)	31	14,157.200
4.	Balochistan	29	44,289.410
5.	Merged Areas, Khyber Pakhtunkhwa	25	1,206.801
6.	Gilgit-Baltistan	10	8,197.507
7.	AJ&K	4	11,052.59
Sub-Total (A)		151	159,182.35
B	Non-Structural Interventions		
8.	WAPDA	05	15,318.743
9.	PMD	02	5,025.390
10.	Recharge Pakistan Project (MoCC & EC)	01	6,000.000
11.	LiDAR Survey of Floodplains of Indus River & its main tributaries	01	779.900
12.	Hill Torrent Management Studies updation + Institutional Reforms	04	457.590
13.	Federal Flood Commission (Project Coordination & Management Unit, Supervisory Consultants, Urban Flood Management/RWH Works, Studies	6	7,861.030
Sub-Total (B)		19	35,442.650
Grand Total (A+B)		170	194,625.00

SUMMARY OF INTERVENTIONS
FLOOD PROTECTION SECTOR PROJECT-III (FPSP-III)-UPDATED

Sr. No.	Description	No. of Sub-Projects	Estimated Cost (Rs Million)	No. of Structures to be added	Assets to be protected/ Expected Benefits
A	Structural Interventions				
a.	Punjab	12	29,708.250	34 No. Flood embankments & 17 No. Spurs/Studs, Flood Carrying Channels for Vidore & Mithawan Hill Torrents Remodeling of Nutkani Flood Carrying Channel Bela removal upstream Qadirabad Barrage at River Chenab	Protection of 160,000 people 5,000 houses, 12 BHU, 20 No. Irrigation Channels, 30 No. schools, 10 No. roads and 31,000 acres of lands
b.	Sindh	40	50,570.590	81 River Training works, 79 No. Gabion structure, 51 No. Flood embankments and 66 No. FDR works Flood Carrying Channel from MNV Head Regulator (RD 224 – 346) along FP Bund	Protection of 2,507,800 people, 65,500 households, and 685,000 acres of agricultural lands
c.	Khyber Pakhtunkhwa	31	14,157.200	56 No. flood protection/ river training works gabion wall and embankments etc.	24,699 acres of agricultural lands, Village abadies & other properties along Rivers Swat, Panjkora, Kabul and their tributaries and hill torrents like Tochi Rivers etc.
d.	Merged Area of Khyber Pakhtunkhwa	25	1,206.801		
e.	Balochistan	29	44,289.410	80 No. River Training Works, 9 No. Dispersal structures, 9 Small Dams (154,863 Acre-feet), 1 No. Distribution Structure, 39 No. flood embankments and 33 No. FDR Works of 2022	Approx. 22,850 people, 3,811 farm families, 5,762 houses, 12,910 acres crop lands, 1,500 livestock and 223 No. Tube Well

Sr. No.	Description	No. of Sub-Projects	Estimated Cost (Rs Million)	No. of Structures to be added	Assets to be protected/ Expected Benefits
f.	Gilgit-Baltistan	10	8,197.507	Channelization of nullahs, Construction of Gabion Flood Protection wall and Stud/Spur, & Dispersal Structure in 10 Districts i.e. Gilgit, Diamer, Ghizar, Hunza, Nagar, Astore, Skardu, Shigar, Ghanche & Kharmong.	Around 1,200,000 population, 93,466 acre agricultural lands and 4,500 houses
g.	AJ&K	4	11,052.59	26 No. small dams and construction of flood protection wall on the vulnerable locations	200 acres agriculture land, Conservation of 55,345 Acre feet of flood water for irrigation (about 19,224 acres) and drinking purposes (0.521 MGD), Population of 520,150 , 1,539 Tons Fish annually, Hydropower 566,800 KW
	Sub-Total (A)	151	159,182.35		

Sr. No.	Description	No. of Sub-Projects	Estimated Cost (Rs Million)	Details of Important Interventions and Expected Benefits
B	Non-Structural Interventions			
h.	WAPDA	05	15,318.743	<ul style="list-style-type: none"> • Installation of 457 Telemetry Stations on country wide basis as Phase-I of National Master Plan for Flood Telemetry, • Formulation of National Watershed Management Plan covering Swat Basin, Indus Basin & Upper Indus Basin, Hazara Area, Haro & Soan River, Gomal, Zhob, Kohat and various hill torrents, Nari Basin Hub Basin, Nai Gaj Basin and Gilgit-Baltistan. • Besides sub-projects for improved data sets for making more accurate flood forecasts and conducting climate studies, timely flood early warnings etc.
i.	PMD	02	5,025.390	<ul style="list-style-type: none"> • Improved weather forecast, riverine flood and flash flood forecast, Institutional weather early warning capabilities strengthening and increased satisfaction of end-users, besides others. • Six (06) New Regional Flood Forecasting & Early Warning Centers at Karachi, Peshawar, Quetta, Konadas (G-B), Muzaffarabad and Multan. Besides Upgradation of FFD, Lahore & National FF&EW Centre at Islamabad. • 252 No. Automatic Weather Stations on countrywide basis
j.	Recharge Pakistan Project (MoWR + MoCC)	01	6,000.000	<ul style="list-style-type: none"> • This long-term project envisions that by 2050, ecosystem-based adaptation contributes towards better climate resilience, water and food security and sustainable livelihood. • More than 10 million people will directly benefit from the project, while 20 million people across 50 vulnerable districts of Pakistan will be the indirect beneficiaries. • The project will be implemented in selected sites, spanning over a stretch of 1,300 km of Indus River, across Khyber Pakhtunkhwa, Punjab, Sindh and Balochistan.

Sr. No.	Description	No. of Sub-Projects	Estimated Cost (Rs Million)	Details of Important Interventions and Expected Benefits
k.	LiDAR Survey of floodplain areas of Indus River and its tributaries (Army's Survey Group)	01	779.900	<p>Selected River Reaches</p> <p>Capture High Resolution images alongwith accurate terrain information/ DEM</p> <p>River Indus include Section I (Kalabagh- Chashma), Section II (Chashma-Taunsa), Section III (Taunsa- Guddu), Section IV (Guddu- Sukkur) and Section V (Sukkur- Kotri);</p> <ul style="list-style-type: none"> • River Chenab (Marala- Trimmu); • River Jhelum (Rasul- Trimmu); & • River Kabul (Warsak- River Indus)
l.	Hill Torrent Management Studies updation (PCRWR)+ Institutional Reforms of attached Departments of MoWR	04	457.590	<ul style="list-style-type: none"> • Minimize environmental degradation of catchment areas • Green interventions in Gilgit-Baltistan by providing <ul style="list-style-type: none"> → 20 No. Solar-Powered Lifting Pumps, → 20 water storage ponds, → drip irrigation to irrigate 100 hectares barren lands, → 20 orchards sites and afforestation of trees, grasses and hedges • Besides in Thar Desert, <ul style="list-style-type: none"> → 500 Water Tanks, → 10 No. Rainwater Harvesting Katcha Ponds, → 2 No. Retention Dams/ Check Dams, → Rehabilitation of 10 No. existing local ponds → Rehabilitation of 8 No. Dug Wells and → Promotion of saline agriculture in 50 acres of lands in Thar.
m.	Federal Flood Commission	Lump sum	7,861.030	<ul style="list-style-type: none"> → Project Coordination & Management Unit including office renovation (FFC's office building) → Project Supervisory Consultants, → Important Technical Studies → Urban Flood Management Works, → Rainwater Harvesting & Urban flood management studies, etc.
Sub-Total (B)		13	35,442.650	
Grand Total (A+B)		164	194,625.00	