



**Government of West Bengal
Irrigation & Waterways Department
Jalasampad Bhaban, 3rd Floor, Western Block
Bidhannagar, Salt Lake City, Kolkata 700091**

Memo No. 579 – I
I/4M-10/2017

Dated, 26th December 2017

From: D SenGupta
Joint Secretary to the
Government of West Bengal

To: The Additional Chief Secretary
Paschimanchal Unnayan Affairs Department
Government of West Bengal
Poura Bhaban, 5th Floor, FD-415A
Bidhannagar, Kolkata 700106

Sub: Preparation of Comprehensive Integrated Plan for Paschimanchal region.

Sir,

Pursuant to your No.85/SPUA/17 dated 7th December 2017, addressed to the Additional Chief Secretary of this Department, I am directed to submit herewith the primary plan documents including narratives and filled up tables.

Yours faithfully,


D SenGupta
Joint Secretary to the
Government of West Bengal

Encl. as stated

Memo No.579/1(4) – I

Dated, 26th December 2017

Copy with copy of enclosure forwarded for information to the:

- 1 Chief Engineer (North)
Irrigation & Waterways Directorate
- 2 Chief Engineer (West)
Irrigation & Waterways Directorate
- 3 Chief Engineer (South West)
Irrigation & Waterways Directorate
- ✓ 4 Sri S Saha, Deputy Director
Advance Planning, Project Evaluation & Monitoring Cell
Irrigation & Waterways Directorate

He is requested to upload in the Departmental website.

Encl. as stated


D SenGupta
Joint Secretary to the
Government of West Bengal

**Primary Plan Document of the Irrigation & Waterways Department
for preparation of an Integrated Comprehensive Plan for
Paschimanchal Region**

1.0 Introduction

Irrigation & Waterways Department (IWD), responsible for sustainable development and regulation of water resources through major, medium and occasionally minor surface irrigation projects and also for management of floods and waterlogging in the State, has a strong presence in Paschimanchal region in the sphere of development activities under agricultural and allied water resources sector. With a view to support the Paschimanchal Unnayan Affairs Department (PUAD) in strategic decision making by way of developing a comprehensive view of resources and commitments and to plan the allocation of resources accordingly, as per sectoral priorities through effective coordination among various stakeholding line Departments operating in the said region, IWD has prepared the Primary Plan Document (PPD). Critical gap existing in the irrigation and flood management infrastructure of the IWD in Paschimanchal region has been identified in the PPD and assessment of gap funding required has also been made, following the step by step procedure stated in the D.O. letter No.85/SPUA/17 dated 7th December 2017 of the Additional Chief Secretary, PUAD.

2.0 Narrative on the stages of the planning process

(i) "AS-IS" condition

- ▶ Existing infrastructure / domain of activities of the IWD in the 74 identified PUP Blocks in 7 districts includes the following:
 - 6 Major Irrigation Projects, i.e. Mayurakshi Reservoir Project, Hinglow Irrigation Project, Barrage & Irrigation System of Damodar Valley Project, Kangsabati Reservoir Project and Midnapore Canals Project, and 57 Medium / Minor Irrigation Schemes, covering some or other of the 74 Blocks, either fully or partially, having a total target command area of more or less 4,77,801 ha.
 - Vulnerable embankments and eroding riverbanks for a total length of 74.5 km and 34.2 km respectively.
 - Acutely silted up drainage channels for a total length of 36.9 km.
- ▶ Most of the irrigation projects were commissioned decades back and there has been considerable loss of irrigation potential, mainly due to degraded canal system, seepage loss in filling zones of the canals and damaged / defunct regulating structures. IWD is taking up the necessary improvement works on regular basis, since last couple of years out of its own budgetary provision, but that is not sufficient. In view of the fact that the Paschimanchal Districts are relatively water stressed compared to other areas, due to receiving lesser

amount of rainfall and availability of adequate groundwater is an issue of concern in many areas, implementing schemes relating to stabilization of irrigation potential of the completed projects in a systematic way and with holistic approach, is a priority agenda to the IWD. In fact, IWD has already taken up a major project of this kind for revamping and modernization of the irrigation network of the DVC Canal System in the districts of Bankura, Paschim & Purba Bardhaman, Hooghly & Howrah under externally funded “West Bengal Major Irrigation & Flood Management Project” (WBMIFMP) which is now at preparation stage.

- ▶ Although river erosion, flooding and drainage congestion are not generally very major issues in Paschimanchal region, problems of damage and sufferings in these regard, have recently been reported from some areas. Vulnerable spots on riverbanks and embankments and critically silted up drainage channels have already been identified and necessary improvement works are also being taken up depending on the budgetary availability.

(ii) **“TO-BE” condition**

- ▶ It is anticipated that due to the effects of climate change already indicating wide temporal & spatial variation of rainfall and growing population, demand of water for agriculture and various other uses in next five years would increase considerably, and IWD would be required to optimize the irrigation potential by rehabilitating and upgrading the existing irrigation projects. A concerted effort in this regard can be emerge as viewed as an important coping-up strategic tool in near future, considering the difficulties of taking up new major and medium irrigation projects, mainly arising out of problems associated with large scale land acquisition. Accordingly, IWD would like to fill up the presently assessed gap due to loss of irrigation potential, to the tune of around 90,000 ha by adopting various structural and non-structural activities.
- ▶ Similarly, flooding and erosion may become major issues of concern in next five years, due to somewhat erratic behaviour of the monsoon rain. There has been occurrence of heavily concentrated rainfall over a shorter period of time in a particular area, causing floods. Accordingly, IWD would like to revamp the flood management infrastructure in these areas by increasing the carrying capacity of the silted up drainage channels having a total length of 36.9 km and improving the weak and vulnerable stretches of flood embankments measuring around 34.2 km, based on present day assessment. River erosion, caused by a number of hydro-geological factors, is a dynamic phenomenon and if such erosion is of propagating type, necessary bank protection works for arresting the erosion are to be taken to avoid loss of land and other assets. Unfortunately, no long-term planning can be formulated for erosion management, due to its unpredictable nature. Accordingly, based on the present assessment, the target for next five years has been set, envisaging riverbank protection works for a total length of 74.5 km.

(iii) **Migration from the “AS-IS” to the “TO-BE” status**

- Set of activities proposed to be taken up by the IWD to migrate from the “As-Is” to the “To-Be” status, have been shown below yearwise and districtwise.

Activity – 1 Stabilization of irrigation potential and restoration of lost irrigation potential, by taking up rehabilitation and improvement of major, medium and minor irrigation projects.

District	Name of the projects	Yearwise target of, restoration of potential (ha)					
		Year-1	Year-2	Year-3	Year-4	Year-5	Total
Bankura	Kangsabati Reservoir Project & 11 Minor Irrigation Schemes	62	2805	8050	8313	8121	27351
Birbhum	Mayurakshi Reservoir Project & Hinglow Reservoir Project	4905	11874	841	294	0	17914
Paschim Bardhaman	Nachan Minor Irrigation Scheme	20	20	0	0	0	40
Paschim Medinipur	Kangsabati Reservoir Project & Midnapore Canal Project	1355	3386	6445	10752	5692	27630
Purulia	32 Medium / Minor Irrigation Schemes	258	1914	1914	1914	0	6000
Jhargram	Kangsabati Reservoir Project & 13 Minor Irrigation Schemes	93	1963	3449	2848	2626	10979
Total		6693	21962	20699	24121	16439	89914

Note: 1. Improvement of Barrage & Irrigation System of Damodar Valley Project excluded, as implementation schedule would depend on the sequence of activities, yet to be finalized in consultation with the funding agency, i.e. World Bank & Asian Infrastructure Investment Bank.

2. 2017-18 is the Year – 1.

Activity – 2 Anti-erosion works for protecting riverbanks

District	Name of the major rivers causing erosion	Yearwise target length of bank protection (km)					
		Year-1	Year-2	Year-3	Year-4	Year-5	Total
Bankura	Dwarakeswar, Gandheswari, Silabati, Kangsabati, Damodar	0.4	4.4	16.5	15.4	0.0	36.7
Birbhum	Mayurakshi, Kuye, Ajoy	0.0	1.8	2.5	0.7	0.0	5.0
Paschim Bardhaman	Damodar, Ajoy	0.0	2.4	2.4	0.0	0.0	4.8
Paschim Medinipur	Kangsabati, Silabati, Subarnarekha	0.0	2.5	3.7	2.0	0.0	8.2
Purulia	—	0.0	0.0	0.0	0.0	0.0	0.0
Jhargram	Kangsabati, Subarnarekha	2.0	3.5	7.2	7.1	0.0	19.8
Total		2.4	14.6	32.3	25.2	0.0	74.5

Activity – 3 Raising, strengthening and improvement of flood embankments

District	Name of the rivers	Yearwise target of length of embankment improvement (km)					
		Year-1	Year-2	Year-3	Year-4	Year-5	Total
Bankura	Dwarakeswar, Gandheswari, Silabati, Kangsabati, Damodar	0.0	0.0	0.0	0.0	0.0	0.0
Birbhum	Mayurakshi, Kuye, Ajoy	4.0	8.0	3.9	0.0	0.0	15.9
Paschim Bardhaman	Damodar, Ajoy	0.0	3.5	0.0	0.0	0.0	3.5
Paschim Medinipur	Kangsabati, Silabati, Subarnarekha	1.3	7.4	6.1	0.0	0.0	14.8
Purulia	—	0.0	0.0	0.0	0.0	0.0	0.0
Jhargram	Kangsabati, Subarnarekha	0.0	0.0	0.0	0.0	0.0	0.0
Total		5.3	18.9	10.0	0.0	0.0	34.2

Activity – 4 Desiltation of drainage channels

District	Name of the channels	Yearwise target length of desiltation (km)					
		Year-1	Year-2	Year-3	Year-4	Year-5	Total
Bankura	Sali, Maliarajore	0.0	5.0	9.5	10.0	0.0	24.5
Birbhum	— — —	0.0	0.0	0.0	0.0	0.0	0.0
Paschim Bardhaman	Tamla Nalla, Kunur	0.0	0.5	3.9	3.9	4.1	12.4
Paschim Medinipur	— — —	0.0	0.0	0.0	0.0	0.0	0.0
Purulia	— — —	0.0	0.0	0.0	0.0	0.0	0.0
Jhargram	— — —	0.0	0.0	0.0	0.0	0.0	0.0
Total		0.0	5.5	13.4	13.9	4.1	36.9

Note: 2 PUP Blocks in Purba Bardhaman have not been considered as those are under the command area of Barrage & Irrigation System of Damodar Valley Project, being implemented under externally funding and there is no major issue relating to flood management in these two Blocks.

(iv) Resources and budgetary support required for implementation of the proposed set of activities

- Set of activities stated in Para-2(iii) hereinbefore, could be implemented by the IWD using the existing office establishments, located at all the seven districts. Total workforce for execution of works in Paschimanchal region comprises three Chief Engineers, six Superintending Engineers, fourteen Executive Engineers, with a large pool of Assistant and Junior Engineers, all having fully equipped permanent offices at District / Sub-division / Block levels.

- Districtwise and yearwise requirement of total budgetary support for implementation of the activities is shown below:

District	Yearwise requirement of fund (Crore of ₹)					
	Year-1	Year-2	Year-3	Year-4	Year-5	Total
Bankura	2.15	40.37	233.20	213.19	164.09	653.00
Birbhum	8.85	40.50	32.77	3.04	0.00	85.16
Paschim Bardhaman	0.32	11.87	15.08	1.80	2.10	31.17
Paschim Medinipur	12.38	60.34	133.44	185.14	140.59	531.89
Purulia	6.30	30.50	39.85	39.86	0.00	116.51
Jhargram	4.44	19.17	64.50	101.15	89.23	278.49
Total	34.44	202.75	518.84	544.18	396.01	1696.22

(v) **Identification of critical gaps and additional intervention required**

- Critical gaps in the existing infrastructure have already been identified in Para 2(ii) hereinbefore. However, summary list is shown below:

District	Critical gaps in infrastructure in regard to			
	Restoration of lost irrigation potential (in ha)	Anti-erosion works for river bank protection (in km)	Embankment improvement (in km)	Desiltation of drainage channels (in km)
Bankura	27351	36.7	0.0	24.5
Birbhum	17914	5.0	15.9	0.0
Paschim Bardhaman	40	4.8	3.5	12.4
Paschim Medinipur	27630	8.2	14.8	0.0
Purulia	6000	0.0	0.0	0.0
Jhargram	10979	19.8	0.0	0.0
Total	89914	74.5	34.2	36.9

- There would be no fresh acquisition of land involved in implementing the development projects. No activity would be taken up in forest area. Hence, support of other line Departments may not be required as such.
- The only constraint is mobilization of the required financial resources commensurate with the proposed work plan having a total financial involvement of ₹ 1696.22 crore. IWD is responsible for irrigation development, flood management and other infrastructural development in the entire State comprising twenty one districts. Normal apportioned budgetary provision available for the Paschimanchal region from Core State Plan and RIDF during next five year, even after considering 15% annual growth, stands at 42% (approx.) of the total

requirement of fund in the above said period, i.e. ₹ 713.35 crore. Accordingly, it is requested that the PUAD may arrange to provide the shortfall (52% of total fund), amounting to R 982.87 crore. Yearwise tentative requirement of additional support of the PUAD has been shown below, to formulate the holistic roadmap.

Additional requirement of fund from the PUAD in					
2017-18	2018-19	2019-20	2020-21	2021-22	Total
0.00	62.62	316.24	346.70	257.21	982.87

- On receipt of indication regarding the extent of support that may be provided by the PUAD, further planning for prioritization of works would be taken up by the IWD.
- Implementation of the projects would, inter-alia, provide the much needed irrigation water at practically free of cost to the required duration and extent, particularly in the tail end of the command; minimize flood and erosion loss by way of protecting crops, land and other assets and would resultantly boost up agrarian economy in the Paschimanchal region.

3.0 Tables “A” to “D” for capturing “AS-IS”, “TO-BE”, **Critical Gaps** and **Convergence / Synergy Plan** have been filled up districtwise in the following part.

**Inputs of the Irrigation & Waterways Department for preparation of Comprehensive Integrated Planning for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)**

District: Bankura

Table – A : Estimation of “AS-IS” conditions

Sl. No.	Name of schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target Nos. / Unit volume etc. as on the current of 2017-18	Status of implementation so far	Major reasons for deviation from full achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Kangsabati Reservoir Project	Stabilization of irrigation potential & restoration of lost irrigation potential	Surface irrigation by gravity, using canal water	Target Kharif area under irrigation = 2,30,000 ha	Actual Kharif area under irrigation (primary assessment) = 2,05,000 ha	Degraded canal system and controlling structures
2.	11 Medium / Minor Irrigation Schemes	– do –	– do –	Target Kharif area under irrigation = 5,259 ha	Actual Kharif area under irrigation (primary assessment) = 2,908 ha	– do –
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbank for prevention of loss of land and properties	36.7 km	–	1. Eroding areas were under observation. 2. Suitable funding source could not be located.
4.	Desiltation of various drainage channels	Desiltation	Removal of silt for better drainage	24.5 km	–	Suitable funding source could not be located.

Note: Modernization of Barrage & Improvement System of the Damodar Valley Project, decided to be taken up under external assistance has been excluded from the present scope, as the feasibility study for that project is presently under preparation and assessment of critical gaps is yet to be made.

Table – B : Estimation of “TO-BE” conditions

Sl. No.	Description of future schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target No. / Unit / Volume etc.					
				Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Rejuvenation & improvement of Kangsabati Reservoir Project	Stabilization of irrigation potential (IP)	Improvement of structure and degraded canals and construction of additional dam spill-way (field activities)	62 ha	1942 ha	6755 ha	8120 ha	8121 ha	25000 ha
2.	Rejuvenation & improvement 11 Medium / Minor Irrigation Schemes	– do –	Improvement of canals and structures (field activities)	0 ha	863 ha	1295 ha	193 ha	0 ha	2351 ha
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbanks by structural measures (field activities)	0.4 km	4.4 km	16.5 km	15.4 km	0.0 km	36.7 km
4.	Desiltation of various drainage channels	Desiltation	Earthwork in excavation for removal of silt by mechanical means (field activities)	0.0 km	5.0 km	9.5 km	10.0 km	0.0 km	24.5 km

Note: Year -1 is 2017-18.

Table – C : Determination of “Critical Gaps”

Sl. No.	Name of existing schemes / programmes	Major reasons for gap / deviation	Nos. and nature	How to fill up the gaps	Critical gaps					
					Total budgetary support required to fill the gaps / bridge the deviations (Crore of ₹)					
					Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Kangsabati Reservoir Project	As already explained in Col.7 of Table-A	Loss of 25,000 ha of irrigation potential	By improving canals, structures and construction of additional dam and spillway	0.65	18.47	177.70	164.09	164.09	525.00
2.	11 Medium / Minor Irrigation Schemes	– do –	Loss of 2,351 ha of irrigation potential	By improving canals and structures	0.00	12.60	28.00	5.20	0.00	45.80
3.	Bank protection works on different rivers	– do –	36.7 km length of eroding river banks	By undertaking structural protection works	1.50	7.30	22.70	38.50	0.00	70.00
4.	Desiltation of various drainage channels	– do –	24.5 km length of silted up drainage channels	By earthwork in excavation using mechanical means for removal and disposal of silt wherever necessary.	0.00	2.00	4.80	5.40	0.00	12.20
Total					2.15	40.37	233.20	213.19	164.09	653.00

Table – D : Convergence / Synergy Plan

Sl. No.	Name of existing and future schemes / programmes	Critical gaps (to be filled up within next 5 years)	Which of the Line Department's support is needed	Suggested extent of support sought by the Line Department from the PUAD, in addition to its normal budgetary provisions
(1)	(2)	(3)	(4)	(5)
1.	Rejuvenation & improvement of Kangsabati Reservoir Project	Loss of 25,000 ha of irrigation potential	Irrigation & Waterways Department	65% of the (total cost of ₹ 525.00 crore <u>less</u> ₹ 3.25 crore), i.e. ₹ 339.14 crore.
2.	Rejuvenation & improvement 11 Medium / Minor Irrigation Schemes	Loss of 2,351 ha of irrigation potential	— do —	50% of the total cost of ₹ 45.80 crore i.e. ₹ 22.90 crore.
3.	Bank protection works on different rivers	36.7 km length of eroding riverbanks	— do —	60% of the (total cost of ₹ 70.00 crore <u>less</u> ₹ 1.98 crore), i.e. ₹ 40.81 crore.
4.	Desilting of various drainage channels	24.5 km length of silted up drainage channels	— do —	60% of the total cost of ₹ 12.20 crore i.e. ₹ 7.32 crore.

Note: Additional budgetary support sought from PUAD, on year to year basis, more or less as per phasing shown in the summary statement.

**Inputs of the Irrigation & Waterways Department for preparation of Comprehensive Integrated Planning for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)**

District: Birbhum

Table – A : Estimation of “AS-IS” conditions

Sl. No.	Name of schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target Nos. / Unit volume etc. as on the current of 2017-18	Status of implementation so far	Major reasons for deviation from full achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Mayurakshi Reservoir Project	Stabilization of irrigation potential & restoration of lost irrigation potential	Surface irrigation by gravity, using canal water	Target Kharif area under irrigation = 70,552 ha	Actual Kharif area under irrigation = 55,552 ha	Degraded canal system and controlling structures
2.	Hinglow Irrigation Project	– do –	– do –	Target Kharif area under irrigation = 6,152 ha	Actual Kharif area under irrigation = 3,238 ha	– do –
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbank for prevention of loss of land and properties	5.00 km	–	1. Eroding areas were under observation. 2. Suitable funding source could not be located.
4.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works	15.90 km	–	Work could not be taken up earlier, as it was not that critical, prior to monsoon of 2017.

Table – B : Estimation of “TO-BE” conditions

Sl. No.	Description of future schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target No. / Unit / Volume etc.						
				Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
1.	Rejuvenation & improvement of Mayurakshi Reservoir Project	Stabilization of irrigation potential (IP)	Improvement of structure and degraded canals (field activities)	4500 ha	10500 ha	0 ha	0 ha	0 ha	15000 ha	
2.	Rejuvenation & improvement of Hinglow Irrigation Project	– do –	Improvement of canals and structures (field activities)	405 ha	1374 ha	841 ha	294 ha	0 ha	2914 ha	
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbanks by structural measures (field activities)	0.0 km	1.8 km	2.5 km	0.7 km	0.0 km	5.0 km	
4.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works (field activities)	4.0 km	8.0 km	3.9 km	0.0 km	0.0 km	15.9 km	

Note: Year -1 is 2017-18.

Table – C : Determination of “Critical Gaps”

Sl. No.	Name of existing schemes / programmes	Major reasons for gap / deviation	Nos. and nature	How to fill up the gaps	Critical gaps					
					Total budgetary support required to fill the gaps / bridge the deviations (Crore of ₹)					
					Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Mayurakshi Reservoir Project	As already explained in Col.7 of Table-A	Loss of 15,000 ha of irrigation potential	By improving canals and structures	4.00	16.00	0.00	0.00	0.00	20.00
2.	Hinglow Irrigation Project	– do –	Loss of 2,914 ha of irrigation potential	– do –	0.69	10.24	18.50	1.00	0.00	30.43
3.	Bank protection works on different rivers	– do –	5.0 km length of eroding river banks	By undertaking structural protection works	0.00	3.15	9.39	2.04	0.00	14.58
4.	Flood embankments at different locations	– do –	15.9 km length of weak flood embankments	By raising and strengthening of embankments and ancillary works	4.16	11.11	4.88	0.00	0.00	20.15
Total					8.85	40.50	32.77	3.04	0.00	85.16

Table – D : Convergence / Synergy Plan

Sl. No.	Name of existing and future schemes / programmes	Critical gaps (to be filled up within next 5 years)	Which of the Line Department's support is needed	Suggested extent of support sought by the Line Department from the PUAD, in addition to its normal budgetary provisions
(1)	(2)	(3)	(4)	(5)
1.	Rejuvenation & improvement of Mayurakshi Reservoir Project	Loss of 15,000 ha of irrigation potential	Irrigation & Waterways Department	NIL (fully considered in Irrigation & Waterways Department Budget)
2.	Rejuvenation & improvement of Hinglow Irrigation Project	Loss of 2,914 ha of irrigation potential	— do —	50% of the total cost of ₹ 30.43 crore <u>less</u> ₹ 3.43 crore), i.e. ₹ 13.50 crore
3.	Bank protection works on different rivers	5.0 km length of eroding river banks	— do —	60% of the total cost of ₹ 14.58 crore, i.e. ₹ 8.75 crore
4.	Improvement of flood embankments at different locations	15.9 km length of weak flood embankments	— do —	60% of the total cost of ₹ 20.15 crore <u>less</u> ₹ 10.39 crore), i.e. ₹ 5.86 crore

Note: Additional budgetary support sought from PUAD, on year to year basis, more or less as per phasing shown in the summary statement.

**Inputs of the Irrigation & Waterways Department for preparation of Comprehensive Integrated Planning for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)**

District: Birbhum

Table – A : Estimation of “As is” conditions

Sl. No.	Name of schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target Nos. / Unit volume etc. as on the current of 2017-18	Status of implementation so far	Major reasons for deviation from full achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Mayurakshi Reservoir Project	Stabilization of irrigation potential & restoration of lost irrigation potential	Surface irrigation by gravity, using canal water	Target Kharif area under irrigation = 70,552 ha	Actual Kharif area under irrigation = 55,552 ha	Degraded canal system and controlling structures
2.	Hinglow Irrigation Project	– do –	– do –	Target Kharif area under irrigation = 6,152 ha	Actual Kharif area under Irrigation = 3,238 ha	– do –
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbank for prevention of loss of land and properties	5.00 km	–	1. Eroding areas were under observation. 2. Suitable funding source could not be located.
4.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works	15.90 km	–	Work could not be taken up earlier, as it was not that critical, prior to monsoon of 2017.

Table – B : Estimation of “To be” conditions

Sl. No.	Description of future schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target No. / Unit / Volume etc.						
				Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Restoration of Irrigation Potential (IP)										
1.	Rejuvenation & improvement of Mayurakshi Reservoir Project	Stabilization of irrigation potential (IP)	Improvement of structure and degraded canals (field activities)	4500 ha	10500 ha	0 ha	0 ha	0 ha	15000 ha	
2.	Rejuvenation & improvement of Hinglow Irrigation Project	– do –	Improvement of canals and structures (field activities)	405 ha	1374 ha	841 ha	294 ha	0 ha	2914 ha	
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbanks by structural measures (field activities)	0.0 km	1.8 km	2.5 km	0.7 km	0.0 km	5.0 km	
4.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works (field activities)	4.0 km	8.0 km	3.9 km	0.0 km	0.0 km	15.9 km	

Note: Year -1 is 2017-18.

District: Birbhum

Table – C : Determination of “Critical Gaps”

Sl. No.	Name of existing schemes / programmes	Major reasons for gap / deviation	Nos. and nature	How to fill up the gaps	Critical gaps					
					Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Mayurakshi Reservoir Project	As already explained in Col.7 of Table-A	Loss of 15,000 ha of irrigation potential	By improving canals and structures	4.00	16.00	0.00	0.00	0.00	20.00
2.	Hinglow Irrigation Project	– do –	Loss of 2,914 ha of irrigation potential	– do –	0.69	10.24	18.50	1.00	0.00	30.43
3.	Bank protection works on different rivers	– do –	5.0 km length of eroding river banks	By undertaking structural protection works	0.00	3.15	9.39	2.04	0.00	14.58
4.	Flood embankments at different locations	– do –	15.9 km length of weak flood embankments	By raising and strengthening of embankments and ancillary works	4.16	11.11	4.88	0.00	0.00	20.15
				Total	8.85	40.50	32.77	3.04	0.00	85.16

Table – D : Convergence / Synergy Plan

Sl. No.	Name of existing and future schemes / programmes	Critical gaps (to be filled up within next 5 years)	Which of the Line Department's support is needed	Suggested extent of support sought by the Line Department from the PUAD, in addition to its normal budgetary provisions
(1)	(2)	(3)	(4)	(5)
1.	Rejuvenation & improvement of Mayurakshi Reservoir Project	Loss of 15,000 ha of irrigation potential	Irrigation & Waterways Department	NIL (fully considered in Irrigation & Waterways Department Budget)
2.	Rejuvenation & improvement of Hinglow Irrigation Project	Loss of 2,914 ha of irrigation potential	– do –	50% of the (total cost of ₹ 30.43 crore <u>less</u> ₹ 3.43 crore), i.e. ₹ 13.50 crore
3.	Bank protection works on different rivers	5.0 km length of eroding river banks	– do –	60% of the total cost of ₹ 14.58 crore, i.e. ₹ 8.75 crore
4.	Improvement of flood embankments at different locations	15.9 km length of weak flood embankments	– do –	60% of the (total cost of ₹ 20.15 crore <u>less</u> ₹ 10.39 crore), i.e. ₹ 5.86 crore

Note: Additional budgetary support sought from PUAD, on year to year basis, more or less as per phasing shown in the summary statement.

**Inputs of the Irrigation & Waterways Department for preparation of Comprehensive Integrated Planning for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)**

District: Paschim Bardhaman

Table – A : Estimation of “AS-IS” conditions

Sl. No.	Name of schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target Nos. / Unit volume etc. as on the current of 2017-18	Status of implementation so far	Major reasons for deviation from full achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Nachan Minor Irrigation Scheme	Stabilization of irrigation potential & restoration of lost irrigation potential	Surface irrigation by gravity, using canal water	Target Kharif area under irrigation = 930 ha	Actual Kharif area under irrigation = 890 ha	Degraded canal system and controlling structures
2.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbank for prevention of loss of land and properties	4.80 km	–	1. Eroding areas were under observation. 2. Suitable funding source could not be located.
3.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works	3.50 km	–	Work could not be taken up earlier, as it was not that critical, prior to monsoon of 2017.
4.	Desiltation of various drainage channels	Desiltation	Removal of silt for better drainage	12.40 km	–	Problem of siltation reported recently. Adequate budgetary provision could not be made.

District: Paschim Bardhaman

Table – B : Estimation of “TO-BE” conditions

Sl. No.	Description of future schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target No. / Unit / Volume etc.					
				Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Nachan Minor Irrigation Scheme	Stabilization of irrigation potential (IP)	Improvement of structure and degraded canals (field activities)	Restoration of Irrigation Potential (IP)					
				20 ha	20 ha	0 ha	0 ha	0 ha	40 ha
2.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbanks by structural measures (field activities)	0.0 km	2.4 km	2.4 km	0.0 km	0.0 km	4.8 km
3.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works (field activities)	0.0 km	3.5 km	0.0 km	0.0 km	0.0 km	3.5 km
4.	Desiltation of various drainage channels	Desiltation	Earthwork in excavation for removal of silt by mechanical means (field activities)	0.0 km	0.5 km	3.9 km	3.9 km	4.1 km	12.4 km

Note: Year -1 is 2017-18.

Table – C : Determination of “Critical Gaps”

Sl. No.	Name of existing schemes / programmes	Major reasons for gap / deviation	Nos. and nature	How to fill up the gaps	Critical gaps						
					Total budgetary support required to fill the gaps / bridge the deviations (Crore of ₹)						
					Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
1.	Nachan Minor Irrigation Scheme	As already explained in Col.7 of Table-A	Loss of 40 ha of irrigation potential	By improving canals and structures	0.32	0.74	0.00	0.00	0.00	1.06	
2.	Bank protection works on different rivers	– do –	4.8 km length of eroding river banks	By undertaking structural protection works	0.00	3.47	8.08	0.00	0.00	11.55	
3.	Flood embankments at different locations	– do –	3.5 km length of weak flood embankments	By raising & strengthening of embankments and ancillary works	0.00	4.00	5.50	0.00	0.00	9.50	
4.	Desiltation of various drainage channels	– do –	12.4 km length of silted up drainage channels	By earthwork in excavation using mechanical means for removal and disposal of silt, wherever required	0.00	3.66	1.50	1.80	2.10	9.06	
Total					0.32	11.87	15.08	1.80	2.10	31.17	

District: Paschim Bardhaman

Table – D : Convergence / Synergy Plan

Sl. No.	Name of existing and future schemes / programmes	Critical gaps (to be filled up within next 5 years)	Which of the Line Department's support is needed	Suggested extent of support sought by the Line Department from the PUAD, in addition to its normal budgetary provisions
(1)	(2)	(3)	(4)	(5)
1.	Nachan Minor Irrigation Scheme	Loss of 40 ha of irrigation potential	Irrigation & Waterways Department	NIL (fully considered in Irrigation & Waterways Department Budget)
2.	Bank protection works on different rivers	4.8 km length of eroding river banks	– do –	60% of the total cost of ₹ 11.55 crore, i.e. ₹ 6.93 crore
3.	Improvement of flood embankments at different locations	3.5 km length of weak flood embankments	– do –	60% of the total cost of ₹ 9.50 crore, i.e. ₹ 5.70 crore
4.	Desiltation of various drainage channels	12.4 km length of silted up drainage channels	– do –	60% of the total cost of ₹ 9.06 crore, i.e. ₹ 5.44 crore

Note: Additional budgetary support sought from PUAD, on year to year basis, more or less as per phasing shown in the summary statement.

**Inputs of the Irrigation & Waterways Department for preparation of Comprehensive Integrated Planning for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)**

District: Paschim Medinipur

Table – A : Estimation of “AS-IS” conditions

Sl. No.	Name of schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target Nos. / Unit volume etc. as on the current of 2017-18	Status of implementation so far	Major reasons for deviation from full achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Kangsabati Reservoir Project	Stabilization of irrigation potential & restoration of lost irrigation potential	Surface irrigation by gravity, using canal water	Target Kharif area under irrigation = 52,220 ha	Actual Kharif area under irrigation = 37,220 ha	Degraded canal system and controlling structures
2.	Midnapore Canals Project	-- do --	-- do --	Target Kharif area under irrigation = 26,910 ha	Actual Kharif area under Irrigation = 14,280 ha	-- do --
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbank for prevention of loss of land and properties	8.20 km	--	1. Eroding areas were under observation. 2. Suitable funding source could not be located.
4.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works	14.80 km	--	Work could not be taken up earlier, as it was not that critical, prior to monsoon of 2017.

Table – B : Estimation of “TO-BE” conditions

Sl. No.	Description of future schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target No. / Unit / Volume etc.					
				Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Rejuvenation & improvement of Kangsabati Reservoir Project	Stabilization of irrigation potential (IP)	Improvement of structure and degraded canals (field activities)	Restoration of Irrigation Potential (IP)					
				96 ha	449 ha	3071 ha	5692 ha	5692 ha	15000 ha
2.	Rejuvenation & improvement of Midnapore Canal Project	– do –	Improvement of canals and structures (field activities)	1259 ha	2937 ha	3374 ha	5060 ha	0 ha	12630 ha
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbanks by structural measures (field activities)	0.0 km	2.5 km	3.7 km	2.0 km	0.0 km	8.2 km
4.	Flood embankments at different locations	Improvement of flood embankments	Earthwork for flood embankments and ancillary works (field activities)	1.3 km	7.4 km	6.1 km	0.0 km	0.0 km	14.8 km

Note: Year -1 is 2017-18.

Table – C : Determination of “Critical Gaps”

Sl. No.	Name of existing schemes / programmes	Major reasons for gap / deviation	Nos. and nature	How to fill up the gaps	Critical gaps					
					Total budgetary support required to fill the gaps / bridge the deviations (Crore of ₹)					
					Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Kangsabati Reservoir Project	As already explained in Col.7 of Table-A	Loss of 15,000 ha of irrigation potential	By improving canals and structures	0.57	4.86	45.25	93.73	140.59	285.00
2.	Midnapore Canal Project	-- do --	Loss of 12,630 ha of irrigation potential	-- do --	11.44	45.76	75.15	82.36	0.00	214.71
3.	Bank protection works on different rivers	-- do --	8.2 km length of eroding river banks	By undertaking structural protection works	0.00	2.23	6.10	9.05	0.00	17.38
4.	Flood embankments at different locations	-- do --	14.8 km length of weak flood embankments	By raising and strengthening of embankments and ancillary works	0.37	7.49	6.94	0.00	0.00	14.80
Total					12.38	60.34	133.44	185.14	140.59	531.89

District: Paschim Medinipur

Table – D : Convergence / Synergy Plan

Sl. No.	Name of existing and future schemes / programmes	Critical gaps (to be filled up within next 5 years)	Which of the Line Department's support is needed	Suggested extent of support sought by the Line Department from the PUAD, in addition to its normal budgetary provisions
(1)	(2)	(3)	(4)	(5)
1.	Rejuvenation & improvement of Kangsabati Reservoir Project	Loss of 15,000 ha of irrigation potential	Irrigation & Waterways Department	65% of the (total cost of ₹ 285.00 crore <u>less</u> ₹ 2.83 crore), i.e. ₹ 183.41 crore
2.	Rejuvenation & improvement of Midnapore Canals Project	Loss of 12,630 ha of irrigation potential	— do —	65% of the (total cost of ₹ 214.71 crore <u>less</u> ₹ 57.20 crore), i.e. ₹ 102.38 crore
3.	Bank protection works on different rivers	8.2 km length of eroding river banks	— do —	60% of the total cost of ₹ 17.38 crore, i.e. ₹ 10.43 crore
4.	Improvement of flood embankments at different locations	14.8 km length of weak flood embankments	— do —	60% of the (total cost of ₹ 14.80 crore <u>less</u> ₹ 0.93 crore), i.e. ₹ 8.32 crore

Note: Additional budgetary support sought from PUAD, on year to year basis, more or less as per phasing shown in the summary statement.

Inputs of the Irrigation & Waterways Department for preparation of Comprehensive Integrated Planning for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)

District: Purulia

Table – A : Estimation of “AS-IS” conditions

Sl. No.	Name of schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target Nos. / Unit volume etc. as on the current of 2017-18	Status of implementation so far	Major reasons for deviation from full achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	32 Medium / Minor Irrigation Schemes	Stabilization of irrigation potential & restoration of lost irrigation potential	Surface irrigation by gravity, using canal water	Target Kharif area under irrigation = 34,000 ha	Actual Kharif area under irrigation = 28,000 ha	Degraded canal system and controlling structures

District: Purulia

Table – B : Estimation of “TO-BE” conditions

Sl. No.	Description of future schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target No. / Unit / Volume etc.					
				Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Rejuvenation & improvement of Medium / Minor Irrigation Schemes	Stabilization of irrigation potential (IP)	Improvement of structure and degraded canals (field activities)	Restoration of Irrigation Potential (IP)					
				258 ha	1914 ha	1914 ha	1914 ha	0 ha	6000 ha

Note: Year -1 is 2017-18.

Table – C : Determination of “Critical Gaps”

Sl. No.	Name of existing schemes / programmes	Major reasons for gap / deviation	Nos. and nature	How to fill up the gaps	Critical gaps					
					Total budgetary support required to fill the gaps / bridge the deviations (Crore of ₹)					
					Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	32 Medium / Minor Irrigation Schemes	As already explained in Col.7 of Table-A	Loss of 6,000 ha of irrigation potential	By improving canals and structures	6.30	30.50	39.85	39.86	0.00	116.51

District: Purulia

Table – D : Convergence / Synergy Plan

Sl. No.	Name of existing and future schemes / programmes	Critical gaps (to be filled up within next 5 years)	Which of the Line Department's support is needed	Suggested extent of support sought by the Line Department from the PUAD, in addition to its normal budgetary provisions
(1)	(2)	(3)	(4)	(5)
1.	Rejuvenation & improvement of Medium / Minor Irrigation Schemes	Loss of 6,000 ha of irrigation potential	Irrigation & Waterways Department	60% of the (total cost of ₹ 116.51 crore less ₹ 31.49 crore), i.e. ₹ 51.01 crore

Note: Additional budgetary support sought from PUAD, on year to year basis, more or less as per phasing shown in the summary statement.

**Inputs of the Irrigation & Waterways Department for preparation of Comprehensive Integrated Planning for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)**

District: Jhargram

Table – A : Estimation of “AS-IS” conditions

Sl. No.	Name of schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target Nos. / Unit volume etc. as on the current of 2017-18	Status of implementation so far	Major reasons for deviation from full achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Kangsabati Reservoir Project	Stabilization of irrigation potential & restoration of lost irrigation potential	Surface irrigation by gravity, using canal water	Target Kharif area under irrigation = 45,170 ha	Actual Kharif area under irrigation = 35,170 ha	Degraded canal system and controlling structures
2.	13 Minor Irrigation Schemes	– do –	– do –	Target Kharif area under irrigation = 5,276 ha	Actual Kharif area under Irrigation = 4,297 ha	– do –
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbank for prevention of loss of land and properties	19.80 km	–	1. Eroding areas were under observation. 2. Suitable funding source could not be located.

Table – B : Estimation of “TO-BE” conditions

Sl. No.	Description of future schemes / programmes	Name of major activity in each scheme / programme	Nature of major activity	Target No. / Unit / Volume etc.					
				Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Rejuvenation & improvement of Kangsabati Reservoir Project	Stabilization of irrigation potential (IP)	Improvement of structure and degraded canals (field activities)	93 ha	1780 ha	2875 ha	2626 ha	2626 ha	10000 ha
2.	Rejuvenation & improvement of 13 Minor Irrigation Schemes	– do –	Improvement of canals and structures (field activities)	0 ha	183 ha	574 ha	222 ha	0 ha	979 ha
3.	Bank protection works on different rivers	Anti-erosion works on riverbank	Protection of riverbanks by structural measures (field activities)	2.0 km	3.5 km	7.2 km	7.1 km	0.0 km	19.8 km
Restoration of Irrigation Potential (IP)									

Note: Year -1 is 2017-18.

Table – C : Determination of “Critical Gaps”

Sl. No.	Name of existing schemes / programmes	Major reasons for gap / deviation	Nos. and nature	How to fill up the gaps	Critical gaps					
					Total budgetary support required to fill the gaps / bridge the deviations (Crore of ₹)					
					Year – 1	Year – 2	Year – 3	Year – 4	Year – 5	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Kangsabati Reservoir Project	As already explained in Col.7 of Table-A	Loss of 10,000 ha of irrigation potential	By improving canals and structures	0.53	7.06	33.69	59.49	89.23	190.00
2.	13 Minor Irrigation Schemes	– do –	Loss of 979 ha of irrigation potential	– do –	0.00	4.35	17.93	16.61	0.00	38.89
3.	Bank protection works on different rivers	– do –	19.8 km length of eroding river banks	By undertaking structural protection works	3.91	7.76	12.88	25.05	0.00	49.60
				Total	4.44	19.17	64.50	101.15	89.23	278.49

Table – D : Convergence / Synergy Plan

Sl. No.	Name of existing and future schemes / programmes	Critical gaps (to be filled up within next 5 years)	Which of the Line Department's support is needed	Suggested extent of support sought by the Line Department from the PUAD, in addition to its normal budgetary provisions
(1)	(2)	(3)	(4)	(5)
1.	Rejuvenation & improvement of Kangsabati Reservoir Project	Loss of 10,000 ha of irrigation potential	Irrigation & Waterways Department	65% of the (total cost of ₹ 190.00 crore <u>less</u> ₹ 2.63 crore), i.e. ₹ 121.79 crore
2.	Rejuvenation & improvement of 13 Minor Irrigation Schemes	Loss of 979 ha of irrigation potential	-- do --	65% of the total cost of ₹ 38.89 crore, i.e. ₹ 25.28 crore
3.	Bank protection works on different rivers	19.8 km length of eroding river banks	-- do --	60% of the (total cost of ₹ 49.60 crore <u>less</u> ₹ 9.77 crore), i.e. ₹ 23.90 crore

Note: Additional budgetary support sought from PUAD, on year to year basis, more or less as per phasing shown in the summary statement.

**Summary inputs of the Irrigation & Waterways Department for preparation of Comprehensive Plan for the
74 Blocks in 7 districts under the jurisdiction of Paschimanchal Unnayan Affairs Department (PUAD)**

(All figures in Crore of ₹)

District	Identification of critical infrastructure gaps pertaining to I&WD	Total requirement of fund for filling up the gaps during five year (2017-18 to 2021-22)	Suggested apportionment of fund		Tentative phasing of funds solicited from the budgetary provisions of PUAD in					Remarks
			I&WD	PUAD	2017-18	2018-19	2019-20	2020-21	2021-22	
Bankura	● Loss of Irrigation Potential (IP) in case of Kangsabati Reservoir Project and 11 Medium / Minor irrigation schemes, to the tune of 27,351 ha.	570.80	208.76	362.04	0.00	16.62	129.50	109.26	106.66	Improvement of B&I system of DV Project considered under external funding excluded here.
	● Eroding riverbank for a total length of 36.7 km.	70.00	29.19	40.81	0.00	4.09	13.62	23.10	0.00	
	● Silted up drainage channels for a total length of 24.5 km.	12.20	4.88	7.32	0.00	1.20	2.88	3.24	0.00	
Sub-Total : Bankura			242.83	410.17	0.00	21.91	146.00	135.60	106.66	
Birbhum	● Loss of Irrigation Potential (IP) in case of Mayurakshi Reservoir Project and Hinglow Irrigation Project to the tune of 17,914 ha.	50.43	36.93	13.50	0.00	4.09	8.91	0.50	0.00	
	● Eroding riverbank for a total length of 5.0 km.	14.58	5.83	8.75	0.00	1.89	5.64	1.22	0.00	
	● Weak flood embankments for a total length of 15.9 km.	20.15	14.29	5.86	0.00	2.93	2.93	0.00	0.00	
Sub-Total : Birbhum			57.05	28.11	0.00	8.91	17.48	1.72	0.00	

(All figures in Crore of ₹)

District	Identification of critical infrastructure gaps pertaining to I&WD	Total requirement of fund for filling up the gaps during five year (2017-18 to 2021-22)	Suggested apportionment of fund		Tentative phasing of funds solicited from the budgetary provisions of PUAD in					Remarks
			I&WD	PUAD	2017-18	2018-19	2019-20	2020-21	2021-22	
Paschim Bardhaman	- Loss of Irrigation Potential (IP) in case of Nachan Minor Irrigation Scheme to the tune of 40 ha. - Eroding riverbank for a total length of 4.8 km. - Weak flood embankments for a total length of 3.5 km.	1.06	1.06	0.00	0.00	0.00	0.00	0.00	0.00	B&I system of DV Project already considered under external funding excluded here.
		11.55	4.62	6.93	0.00	2.08	4.85	0.00	0.00	
		9.50	3.80	5.70	0.00	2.40	3.30	0.00	0.00	
		9.06	3.62	5.44	0.00	2.20	0.90	1.08	1.26	
Sub-Total : Paschim Bardhaman		31.17	13.10	18.07	0.00	6.68	9.05	1.08	1.26	
Paschim Medinipur	- Loss of Irrigation Potential (IP) in case of Kangsabati Reservoir Project and Midnapore Canals Project to the tune of 27,630 ha. - Eroding riverbank for a total length of 8.2 km. - Weak flood embankments for a total length of 14.8 km.	499.71	213.92	285.79	0.00	1.69	78.26	114.45	91.39	
		17.38	6.95	10.43	0.00	1.34	3.66	5.43	0.00	
		14.80	6.48	8.32	0.00	4.16	4.16	0.00	0.00	
Sub-Total : Paschim Medinipur		531.89	227.35	304.54	0.00	7.19	86.08	119.88	91.39	

(All figures in Crore of ₹)

District	Identification of critical infrastructure gaps pertaining to I&WD	Total requirement of fund for filling up the gaps during five year (2017-18 to 2021-22)	Suggested apportionment of fund		Tentative phasing of funds solicited from the budgetary provisions of PUAD in					Remarks
			I&WD	PUAD	2017-18	2018-19	2019-20	2020-21	2021-22	
Purulia	Loss of Irrigation Potential (IP) in case of 32 Medium / Minor Irrigation Schemes to the tune of 6000 ha.	116.51	65.50	51.01	0.00	10.74	16.35	23.92	0.00	
Sub-Total : Purulia		116.51	65.50	51.01	0.00	10.74	16.35	23.92	0.00	
Jhargram	- Loss of Irrigation Potential (IP) in case of Kangsabati Reservoir Project and 13 Minor Irrigation Schemes to the tune of 10,979 ha. - Eroding riverbank for a total length of 19.8 km.	49.60	25.70	23.90	0.00	1.14	7.73	15.03	0.00	
Sub-Total : Jhargram		278.49	107.52	170.97	0.00	7.19	41.28	64.50	58.00	
Grand Total		1696.22	713.35	982.87	0.00	62.62	316.24	346.70	257.31	