Government of India
Central Water Commission
Project Appraisal Organization

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Dated: 10/10/22

Minutes of Meeting

A copy of the Summary Record of discussions of the 150th Meeting of the Advisory Committee of DoWR, RD&GR on Irrigation, Flood Control & Multipurpose Projects held under the Chairmanship of Secretary, Department of Water Resources, River Development & Ganga Rejuvenation on 19.09.2022 is enclosed herewith for information and further necessary action, please.

It is requested that comments, if any, on the enclosed Summary Record of Discussion, may kindly be forwarded to this office within 15 days.

Encl: As above.

Ypaithankar
(Yogesh Paithankar)
Member Secretary of the Advisory Committee &
Chief Engineer (PAO)

To,

Members of Committee:

1. Chairman, CWC, Sewa Bhawan, R. K. Puram, New Delhi.
2. Secretary (Expenditure), Ministry of Finance, 1st Floor, North Block, New Delhi.
3. Secretary, Department of Power, Room No. 205, S.S. Bhawan, II Floor, New Delhi.
4. Secretary, Ministry of Environment & Forests & CC, 4th Floor, Prithvi Block, Indira Paryavaran, Jor Bagh, New Delhi.
5. Secretary, Department of Agriculture, Cooperation & Farmers Welfare, R. No. 126, Krishi Bhawan, New Delhi.
6. Secretary, Ministry of Tribal Affairs, Room No. 738, A-Wing, Shastri Bhawan, New Delhi.
7. Director General, ICAR, Room No-108, Krishi Bhawan, New Delhi.
8. Chairman, CEA, Sewa Bhawan, R. K. Puram, New Delhi.
9. Chairman, Central Ground Water Board, Jam Nâgar House, New Delhi.
10. Adviser (Power), NITI Aayog, Room No. 248, Yojana Bhawan, New Delhi.
11. Adviser (WR&LR), NITI Aayog, Room No. 230, Yojana Bhawan, New Delhi.
12. Joint Secretary & Financial Adviser, DoWR, RD & GR, Room No-401, Shram Shakti Bhawan, New Delhi.

Special Invitees:

1. Additional Secretary, DoWR, RD & GR,New Delhi.
2. Member (D&R), CWC, New Delhi.
3. Member (RM), CWC, New Delhi.
4. Member (WP&P), CWC, New Delhi.
5. Chairman, GFCC, Patna, Bihar
6. Secretary, Department of Jal Shakti, Govt. of Himachal Pradesh, H.P Secretariat, Shimla
7. Special Chief Secretary, WRD, Govt. of Andhra Pradesh, A.P Secretariat, Velagapudi, Amaravati (Andhra Pradesh).
8. Additional Chief Secretary (Irrigation Deptt.), Government of Assam
9. Secretary, Irrigation Department, Government of Assam, Chandmari, Guwahati
10. Secretary, Department of Water Resources, Govt. of Arunachal Pradesh, Secretariat Complex, Itanagar
11. Secretary, Irrigation & Power Department, Government of Uttarakhand, Sachivalaya, Subhash Road, Dehradun
12. Principal Secretary, Water Resources Department, Government of Bihar, Patna
13. Secretary (WR), Irrigation Department, Government of Jharkhand, Sachivalaya, Ranchi
14. Joint Secretary (RD&PP), DoWR, RD&GR, New Delhi.
15. Joint Secretary (IC&GW), DoWR, RD & GR, New Delhi.
16. Chief Advisor (Cost), Department of Expenditure, Lok Nayak Bhawan, New Delhi.
17. Commissioner (SPR), DoWR, RD & GR, New Delhi.
18. Commissioner (FM), DoWR, RD & GR, New Delhi.
19. Commissioner (B&B), DoWR, RD & GR, New Delhi
20. Chief Engineer (IMO), CWC, New Delhi.
21. Chief Engineer (PPO), CWC, New Delhi.
22. Chief Engineer, Designs (N&W), CWC, New Delhi.
23. Chief Engineer (FMO), CWC, New Delhi.
24. Chief Engineer (IBO), CWC, Chandigarh.
25. Chief Engineer (KGBO), CWC, Hyderabad
26. Chief Engineer (BBO), CWC, Guwahati
27. Chief Engineer (BOBO), CWC, Shillong
28. Chief Engineer (LGBO), CWC, Patna

Copy for kind information to:

1. Sr. PPS to Secretary, DoWR, RD & GR, Room No. 407, Shram Shakti Bhawan, New Delhi.

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Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation
Central Water Commission
Project Appraisal Organization
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ADVISORY COMMITTEE FOR CONSIDERATION OF TECHNO-ECONOMIC VIABILITY OF MAJOR& MEDIUM IRRIGATION, FLOOD CONTROL AND MULTIPURPOSE PROJECT PROPOSALS

150th MEETING HELD ON 19th SEPTEMBER, 2022

SUMMARY RECORD OF DISCUSSIONS

The 150th meeting of the Advisory Committee of Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD&GR), Ministry of Jal Shakti (MoJS), for consideration of techno-economic viability of major & medium irrigation, flood control and multipurpose project proposals (Advisory Committee), was held under the chairmanship of Shri Pankaj Kumar, Secretary to the Government of India, DoWR, RD&GR, MoJS on Monday, 19th September, 2022. The list of participants is annxed.

At the outset, the Chairman welcomed the participants and thereafter, he requested Member-Secretary to take up the agenda items.

Brief records of the decisions taken in the meeting are given below:

I. Confirmation of the Minutes of the 149th Meeting of the Advisory Committee :

The 149th meeting of the Advisory Committee was held on 07.03.2022 through video conferencing. Member Secretary informed that the Summary Record of Discussions of 149th Meeting was circulated vide letter no T-28030/1/2022-CE-PAO dated 16.03.2022 and no comments have been received so far. Thereafter, the committee confirmed the Minutes of 149th meeting of the Advisory Committee.

II. Project Proposal Considered by the Advisory Committee :

1. ***North Koel Reservoir Project, Major Irrigation (8th RCE), Jharkhand & Bihar (Estimated Cost Rs. 3,199.85 Cr at Dec. 2021 PL, BC Ratio. 1.146)***

North Koel Reservoir Project is an inter-State major irrigation project spread over the areas of State of Bihar and Jharkhand. The project components include Mandal Dam (67.86 m high and 343 m long) on river North Koel at village Kutkuand, Mohammadganj Barrage (819.6 m long) at about 96 km downstream of dam site in Latehar and Palamu districts of Jharkhand, respectively, along with the Right Main Canal (110.44 km) and Left Main Canal (11.89 km) systems from Mohammadganj Barrage to cater to CCA to the tune of 1,25,500 ha (Annual Irrigation – 1,14,021 ha) in drought prone areas of Palamu & Garhwa districts of Jharkhand and Aurangabad & Gaya districts of Bihar. The project started in 1972 and the work stalled in 1993 due to strict enforcement of new Forest Conservation Act (1980). Till that time works of Mohammadganj Barrage were completed and works in Dam, RMC and LMC were partially completed. MoEF & CC objected to installation of gates in Mandal Dam with apprehension that water accumulated in the dam would threaten the Betla National Park and submergence of forest land of buffer area of Palamu Tiger Reserve. Therefore, ponding level of Mandal Dam has been restricted to 341.00 m (reduction of FRL by 26.28 m) for saving the core area of Palamu Tiger Reserve as per the decision of the meeting held on 11.08.2016 at PMO and 6th Revised Cost Estimate (RCE) of the project was approved by Advisory Committee of DoWR, RD & GR for an estimated cost of Rs. 2,391.36 crore at 2016-17 Price Level (PL), with expenditure till 31.03.2016 of Rs. 769.09 crore and balance work of Rs. 1,622.27 crore. Subsequently, Union Cabinet on 16.08.2017 approved the proposal to complete the balance works of the project at an estimated expenditure of Rs. 1,622.27 crore to be incurred during the three financial years from the start of the project. Union Cabinet also approved the execution of the balance works of the project on turnkey basis by M/s WAPCOS Ltd., a CPSU under MoWR, RD & GR as Project Management Consultant (PMC).

In the meeting, a detailed presentation was made by PMC informing that subsequent to the approval of Union Cabinet, 7th RCE of the project for an estimated cost of Rs. 3,042.16 crore at March, 2019 PL, with expenditure till 31.03.2016 of Rs. 769.09 crore and balance work of Rs. 2,273.07 crore, was approved by the Advisory Committee of DoWR, RD & GR in its 142nd meeting held on 08.07.2019. It was also informed that besides price escalation, the increase in cost estimate was mainly due to enhanced scope of work (complete lining of LMC& RMC, remodeling of all en-route structures and addition of Gaya distribution system) beyond the provisions of 6th RCE. However, the approval of Union Cabinet after 7th RCE could not be sought for want of consent of Bihar for proposed works (complete lining of RMC in Bihar portion).

It was further informed that the consent of Bihar for the proposed works was received vide letter dated 10.02.2022. Thereafter, in the 8th RCE, cost of all items approved in 7th RCE has been updated at December, 2021 PL along with the cost of some additional provisions (600 m bund work at barrage, 17 new structures in LMC, 33 new structures in RMC, 300 m drainage

along LMC, restoration of 15 pump outlets at RMC, Jharkhand, shifting of electric poles from RMC and modification of foot/cart bridge into single lane road bridge) based on the actual requirement and joint inspection by State Govt and WAPCOS officials during 3-5 March, 2022 have been considered.

The 8th RCE has been examined in CWC. Further, Revised Cost Committee (RCC) constituted for this project under the chairmanship of JS&FA, DoWR, RD & GR vide OM No. Z16012/92/2016-FM/1837-1846 dated 15.07.2022 also examined the estimate. The RCC recommended the 8th RCE for the amount of Rs. 3,199.85 crore at December, 2021 PL, with expenditure till 31.03.2016 of Rs. 769.09 crore and balance works of Rs. 2,430.76 crore, to be completed by 2024-25. The variation of estimated cost in 8th RCE as compared to the estimated cost of 6th RCE is to the tune of Rs. 808.49 crore at December, 2021 PL. The Benefit –Cost ratio of the project has been worked out as 1.146 (being in drought prone area BCR of 1 or more is acceptable) by CWC.

Additional Secretary (WR) opined that the time schedule for completion appears to be optimistic. Therefore, she suggested for working out a reasonable timeframe in consultation with CWC for completion of the project. She mentioned that for completion of pending works of dam, security must be ensured by Govt. of Jharkhand and Govt. of Bihar must ensure timely land acquisition for Gaya distributary as it is crucial for completion of the project. Representative of Govt. of Jharkhand submitted that after the disbursement of one time package of Rs. 117.58 crore, there will be no security issues. Representative of Govt of Bihar submitted that there will be no issue in land acquisition in Gaya portion and the work will be completed in time. Additional Secretary (WR) suggested that Govt of Jharkhand may disburse the one time package in phases to avoid any further issues like shifting etc. at later stage.

After detailed deliberations, North Koel Reservoir Project has been accepted by the Advisory Committee of DoWR, RD &GR subject to the following consideration:

(i) As Government of Bihar has consented to the proposed changes subsequent to the Cabinet Approval, there should be no further impediment to progress of the work as per the proposed time schedule by the State Governments & WAPCOS.
(ii) Requisite security for execution of balance work of Dam shall be provided by Government of Jharkhand and works related to timely shifting of requisite families/persons will be ensured.
(iii) There will not be any further change in the scope of work since the omission in the previous estimates have already been accounted for in the joint inspection carried out over 03 to 05 March, 2022 and these have been factored in the 8th RCE.

(iv) The activity of Land Acquisition (LA) is critical for timely completion of the project. As on date, 294.71 ha and 16.62 ha of land are yet to be acquired by Govt of Bihar and Jharkhand, respectively. The State Governments should ensure that there is no further delay in this project for want to LA.

(v) Concurrence of State Finance Department of Bihar and Jharkhand for their part of the share.

(vi) Project Authority / concerned State Governments need to ensure the proper design & drawing of individual components in respect of the structural, hydraulic and mechanical performance and safety.

2. ***Improvement to Swarnamukhi Anicut under Andhra Pradesh Irrigation & Livelihood Improvement Project, Phase –II (APILIP-II), Andhra Pradesh (Estimated Cost Rs. 53.635 Cr at 2020-21 PL, BC Ratio. 1.671)***

Swarnamukhi anicut system was constructed across Swarnamukhi river (intra-State river) near Srikalahasti Town in the year 1954. The anicut was envisaged for diverting water through Chembedu Canal System to feed 46 M.I. tanks in Chittor & SPSR Nellore district. With passage of time, due to formation of sand heaps in the upstream and deteriorated falling shutters arrangement in anicut, ayacut of the system has substantially been reduced from 4,127.80 Ha to only 2,514 Ha. The present proposal includes improvement to Swarnamukhi anicut by replacing the existing R. R. Masonry body wall with falling shutters arrangement with RCC Ogee weir, desilting in u/s of anicut, modernization of Chembedu main canal & its distributaries and repair of scouring and head sluices to revive the lost ayacut (proposed annual irrigation – 4,211 ha with irrigation intensify of 102.10%) through increase of storage capacity on the u/s of anicut from 8.049 M.Cft to 28.550 M. Cft. The estimated cost of the proposal is to the tune of Rs. 53.63 crore at 2020-21 PL with benefit cost ratio of 1.671 as vetted by CWC.

A detailed presentation in this regard was made by the project authority informing that APILIP-II was earlier accepted by Advisory Committee of DoWR, RD &GR in its 135th meeting held on 12.03.2018 for modernization of total 465 (1 major, 19 medium and 445 minor) irrigation sub-project & implementation of Livelihood Improvement Programs spreads over all the 13 districts of Andhra Pradesh with total estimated cost of Rs. 2,000 crore at 2016 PL. APILIP-II is being implemented through Japan International Cooperation Agency (JICA).The expenditure of the present proposal is proposed to be met from the balance amount (Rs. 60 crore) available under APILIP-II.

Additional Secretary (WR) queried whether the sediment proposed to be removed from u/s of Swarnamukhi anicut would be useful for other purposes like filling or farming etc. Project

Authority submitted that they would consult with the mining department of Andhra Pradesh for the same.

After deliberation, the Advisory Committee accepted the project subject to the following conditions.

(i) Govt of Andhra Pradesh will ensure fund for its implementation from the balance fund available under APILIP-II.

(ii) Project Authority will ensure all clearances as per the requirement of JICA/Govt of India in respect of environment & forest and/ or any other statutory clearance as necessary.

(iii) Advisory Committee will not be liable for its future liabilities arising out of the delay in implementation of the project or on any matter related with the project.

(iv) As the proposal envisages siltation and sediment management, Govt. of Andhra Pradesh may refer draft policy on sediment management of Ministry of Jal Shakti for the needful.

3. ***Rukni Irrigation Project, Major Irrigation Assam (Estimated Cost Rs. 764.12 crore at March, 2020 PL, BC Ratio. 1.42)***

Rukni Irrigation Project has been envisaged for providing assured irrigation facility besides providing drinking water supply & promotion of other associated benefits as pisciculture, animal husbandry, communication etc., in the backward region of Cachar & Silchar districts of Assam. The project components include a Barrage (102 m long) located in upstream of Kulicherra village of Cachar district of Assam and across the river Rukni, two (2) canal systems on either bank of the barrage (right bank canal of 21.428 km& left bank canal of 48.725 km) along with branch canals and water distributaries. River Rukni originates in Mizoram and joins river Sonai at the downstream of the project. River Sonai is a left bank tributary of the Barak River in Barak Basin. The entire catchment of the river is rain-fed and Serlui B hydroelectric project in Mizoram is located in the upstream of the proposed project. The project has been planned for CCA to the tune of 17,566 ha (annual irrigation: 24,417 ha) with an estimated cost of Rs. 764.12 crore at March, 2020 PL. The Benefit Cost ratio for this project has been worked out as 1.42.

A detailed presentation was made by the project authority informing that there is no irrigation project in the Cachar & Silchar districts of Assam and the project is very much important for the region. The DPR of this project has been prepared by CWC. The irrigation success rate for this project has been worked out as 76.19%. The project involves forest land to the tune of 414 ha. The statutory clearances of forest & environment along with the State Finance Concurrence are awaited. There will be no effect on the Serlui B hydroelectric project located on the upstream of the project. It has also been informed that Government of Assam has taken up the matter with Govt of Mizoram for NOC and a joint visit has taken place already. For international clearance Govt of Assam has already submitted the case to DoWR, RD & GR.

Additional Secretary (WR) mentioned that NOC from Govt of Mizoram is awaited. Commissioner (FM) mentioned that the effect of this project on Serlui B hydroelectric project, Mizoram may be studied. Additional Chief Secretary (WR), Assam submitted that Serlui B hydroelectric project is located in the hilly reaches about 40 km upstream of the proposed barrage in the plain region of Assam, therefore no adverse effect is expected. The same was endorsed by Member (WP&P), CWC& Member (RM), CWC. Additional Chief Secretary (WR) further added that no issue has been raised by the representative of Govt of Mizoram in recent joint visit and the NOC is expected soon from Govt. of Mizoram. Therefore, the approval of this project may be given. Moreover, the statutory clearances can be expedited after approval of Advisory Committee.

Additional Secretory (WR) pointed out that the benefit cost ratio for this project is below 1.5 although it is fitting the criteria for NE States. On reply, Additional Chief Secretary (WR), Assam submitted that the estimated cost of this project is on higher side because of land component and they are exploring the possibility of reduction of the forest land involved in this project and have taken up a study with IIT, Guwahati in this regard keeping project benefits and parameters unchanged. The outcome of the study may reduce the cost thereby increase the BC ratio.

After deliberations, the Advisory Committee accepted the project subject to the following conditions.

(i) Project Authority shall obtain all the statutory clearances (including Environment, Forest, Wildlife, Tribal Affairs and R&R etc.) from the competent authority.
(ii) Minimum environment flow in the downstream of the river may be ensured as per the prevailing law/as per the terms and conditions stipulated by MoEF&CC.
(iii) NOC from Govt of Mizoram and International Clearance from DoWR, RD & GR.
(iv) State Finance Concurrence by the project Authority.
(v) Adhering to all the observation/conditions communicated by specialized Directorates of CWC/CSMRS /CGWB in respect of different aspects of the project.
(vi) As submitted by State Government during the meeting the cost be optimized to the extent possible.
(vii) Acceptance of project proposal by Advisory Committee of DoWR, RD&GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD & GR such as AIBP, PMKSY, RRR, and FMP etc or funding from any external multilateral agency.

4. ***Sonai Irrigation Project, Major Irrigation Assam (Estimated Cost Rs. 740.93 Cr at March, 2020 PL, BC Ratio. 1.04)***

Sonai Irrigation Project has been envisaged for providing assured irrigation facility besides providing drinking water supply & promotion of other associated benefits as pisciculture, animal husbandry, communication etc., in the backward region of Cachar district of Assam. The project components include a Barrage (170m long) located in near Kashithal village of Cachar district of Assam and across the river Sonai, two (2) canal systems on either bank of the barrage (right bank canal of 27.32 km & left bank canal of 18.85 km) along with branch canals and water distributaries. River Sonai originates in Mizoram and is a left bank tributary of the Barak river in Barak Basin. The entire catchment of the river is rain-fed and Turial hydroelectric project in Mizoram is located in the upstream of the proposed project. The project has been planned for CCA to the tune of 10,850 ha (annual irrigation – 17,362 ha) with an estimated cost of Rs. 740.93 crore at March, 2020 PL. The Benefit Cost ratio for this project has been worked out as 1.04.

A detailed presentation was made by the project authority informing that there is no irrigation project in the Cachar district of Assam and the project is very important for the region. The DPR of this project has been prepared by CWC. The irrigation success rate for this project has been worked out as 100%. The project involves forest land to the tune of 614.5 ha. The statutory clearances of forest & environment along with the State Finance Concurrence are awaited. There will be no effect on the Turial hydroelectric project located on the upstream of the project. It has also been informed that Government of Assam has taken up the matter with Govt of Mizoram for NOC and a joint visit has taken place already. For international clearance Govt of Assam has already submitted the case to DoWR, RD & GR.

Additional Secretary (WR) mentioned that the NOC from Govt of Mizoram is awaited. Commissioner (FM) mentioned that the effect of this project on Turial hydroelectric project, Mizoram may be studied. Additional Chief Secretary (WR), Assam submitted that Turial hydroelectric project is located in the hilly reaches about 50 km upstream of the proposed barrage in the plain region of Assam, therefore no adverse effect is expected. The same was endorsed by Member (WP&P), CWC & Member (RM), CWC. Additional Chief Secretary (WR) further added that no issue has been raised by the representative of Govt of Mizoram in recent joint visit and the NOC is expected soon from Govt. of Mizoram. Therefore, the approval of this project may be given. Moreover, the statutory clearances can be expedited after approval of Advisory Committee.

Additional Secretory (WR) pointed out that the benefit cost ratio for this project is marginally above 1.0 although it is fitting the criteria for NE States. On reply, Additional Chief Secretary (WR), Assam submitted that the estimated cost of this project is on higher side because of land component and they are exploring the possibility of reduction of the forest land involved in this project and have taken up a study with IIT, Guwahati in this regard keeping project benefits

and parameters unchanged. The outcome of the study may reduce the cost thereby increase the BC ratio.

After deliberations, the Advisory Committee accepted the project subject to the following conditions.

(i) Project Authority shall obtain all the statutory clearances (including Environment, Forest, Wildlife, Tribal Affairs and R&R etc.) from the competent authority.
(ii) Minimum environment flow in the downstream of the river may be ensured as per the prevailing law/as per the terms and conditions stipulated by MoEF& CC.
(iii) NOC from Govt of Mizoram and International Clearance from DoWR, RD & GR.
(iv) State Finance Concurrence by the project Authority.
(v) Adhering to all the observation/conditions communicated by specialized Directorates of CWC/CSMRS /CGWB in respect of different aspects of the project.
(vi) As submitted by State Government during the meeting the cost be optimized to the extent possible.
(vii) Acceptance of project proposal by Advisory Committee of DoWR, RD&GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD & GR such as AIBP, PMKSY, RRR, and FMP etc or funding from any external multilateral agency.

5. ***Phina Singh Multipurpose Project, Himachal Pradesh (Estimated Cost Rs. 643.68 Cr at March, 2022 PL, BC Ratio. 1.87)***

Phina Singh Multipurpose Project envisages construction of storage concrete dam across Chakki Khad, a small tributary of the river Beas (Satluj Basin). The dam is interlinked with Kalam Nallah, a tributary of river Beas, through a link cannel of 1.21 km length by constructing a diversion weir across Kalam Nallah. The project has been planned to cater to irrigation in CCA of 4,025 ha (annual irrigation – 8,443 ha) in the Kangra district of Himachal Pradesh besides hydropower generation of 1.88 MW. The estimated cost of this project is to the tune of Rs. 643.68 crore at March, 2022 PL and benefit cost ratio is 1.87.

A detailed presentation was made by the project authority informing that Phina Singh Medium Irrigation Project, Himachal Pradesh with an estimated cost of Rs. 204.51 crore (PL 2011 & BC ratio 1.86) was accepted by the Advisory Committee of DoWR, RD & GR in its 109th Meeting held on 14.03.2011. Subsequently, investment clearance was accorded by Planning Commission in July, 2011 and so far expenditure of Rs. 274.47 crore has been incurred till 31.03.2022 with State resources and 52% physical progress have been achieved. The possibility of

hydropower generation has been explored at a later stage and an additional component of 1.88 MW hydropower generations (vetted with CEA) has been introduced as a new component in the project and a new DPR of Phina Singh Multipurpose Project was submitted in CWC with unchanged irrigation component w.r.t. Phina Singh Medium Irrigation Project. The cost (Rs. 643.68 crore) of the project has increased by Rs. 439.17 crore at March, 2022 PL w.r.t earlier approved cost (Rs. 204.51 crore), mainly due to design of dam, inadequate provisions in the earlier DPR, HRT and power component. Further, it was informed that the design consultancy of the dam is being provided by CWC. The irrigation success rate for this project proposal has been worked out as 90.48%. All the statutory clearances in respect of earlier approved medium were obtained.

Secretory (WR) enquired why the benefit cost ratio of the earlier approved project and the present project is almost same even after a time gap of about 10 years. On reply, Project Authority submitted that there is a radical change in cropping pattern in the state of Himachal Pradesh and the State is shifting towards the vegetable crops from the cereal crops. The BC ratio for this project has been worked out based on the cropping pattern approved by the State Agricultural Department. Project Authority further submitted that with the already constructed infrastructures, irrigation is already being provided to the possible extent.

After deliberations, the Advisory Committee accepted the project subject to the following conditions.

(i) Project Authority shall obtain all statutory clearance/NOC as applicable.
(ii) Necessary State finance concurrence.
(iii) State shall also ensure adequate funds as per year-wise plan proposed.
(iv) Adhering to all the observations/conditions communicated by CWC / CEA.
(v) Acceptance of project proposal by Advisory Committee of DoWR, RD&GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD & GR such as AIBP, PMKSY, RRR, and FMP etc., or funding from any external multilateral agency.

6. ***Integrated Water Resources Management of Buridehing Basin, Flood Control, Assam (Estimated Cost Rs. 733.0473 Cr at 2021-122 PL, BC Ratio. 1.74)***

Buridehing River, major tributaries of river Brahmaputra, originates in the hilly region of Arunachal Pradesh causes problem of flood inundation, bank erosion and drainage congestion etc in the plain reaches (about 200 km) in Assam. The construction of existing dyke system (about 219.24 km) on both bank of river Buridehing was done in sixties and raising and strengthening was done in nineties. Subsequently, no major raising & strengthening work was executed due to

lack of fund. The present proposal has been envisaged to reduce the vulnerability against the flooding and river bank erosion of the Buridehing Basin. The project components include earth work in embankment for length of 183.48 km, repairing / reconstruction of 39 RCC sluice gates, anti-erosion works with geo-bags in apron for a width of 16.5 m & thickness of 0.60 m, bank pitching with cubical CC Blocks of size 0.3m x 0.3m x 0.3m for length of 29.805 km and PSC porcupines for multilayered screens (6 screens at u/s and 6 at d/s of 51 anti-erosion reaches). The project is planned to benefit area of about 65,000 ha and about 6 lakh population in the Dibrugarh and Tinsukia districts of Assam.

A detailed presentation on the scheme was made by the project authority informing that a Preliminary Project Report (PPR) has been prepared for seeking financial assistance from World Bank under AIRBMP (Assam Integrated River Basin Management Programme) for a holistic approach to mitigate flood and erosion problem of different basin of Assam through structural and non-structural measures such as flood forecasting activities. Under this programme structural measures of two basin namely Beki and Buridehing will be included in Phase-I. River Buridehing has meandering characteristics from foot hills to the outfall. The concave bends are chronically affected by erosion. Therefore, permanent anti-erosion measures to the existing embankment in the affected reaches have become imperative. The measures will be extremely helpful since the strips of land in the Bhridehing valley is highly valuable due to density of population, oil fields, tea estates, fertile agricultural land and a vast potential for pisciculture and horticulture, existence of Govt. and public institutions.

After detailed deliberations, the Advisory Committee accepted the scheme. The acceptance of the proposal by Advisory Committee of DoWR, RD& GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD& GR such as FMP etc.

7. ***Integrated Flood and Erosion Management of Manas and Beki River in the District of Baksa and Barpeta in Brahmaputra Valley, Flood Control, Assam (Estimated Cost Rs. 400.22 Cr at 2021-122 PL, BC Ratio. 1.27)***

The river Manas is a trans-boundary river in the Himalayan foot hills between southern Bhutan and India. The original course of Manas river is silted up and almost 80% of the flood discharge now flows through the river Beki which becomes like the main river flowing from Bhutan. The high flood in Beki often inundates the Manas National Park though there is a flood embankment of about 25 km from Mothanguri to Safakamar. This portion is affected by heavy erosion of Beki. The present proposal has been envisaged to protect the land erosion in river Beki through raising and strengthening of the existing embankments along with bank revetment with launching apron. The project components include protection work with A-Type geo-bag two layer

in revetment and apron with geo-bag type A in wire netting box covering a reach of length 43,178 m, raising and strengthening of existing embankment of length 11,271 m and 160 PSC porcupine bar/screen. The project is planned to benefit area of about 80,000 ha and about 3 lakh population in the Barpeta and Baksa districts of Assam.

A detailed presentation on the scheme was made by the project authority informing that a Preliminary Project Report (PPR) has been prepared for seeking financial assistance from World Bank under AIRBMP (Assam Integrated River Basin Management Programme) for a holistic approach to mitigate flood and erosion problem of different basin of Assam through structural and non-structural measures such as flood forecasting activities. Under this programme structural measures of two basin namely Beki and Buridehing will be included in Phase-I. It was also informed that due to heavy discharge with silt load, the flood waters hit the both bank and create bank erosion problem in Beki river. The river flowing in meandering nature with multiple channels are also the cause of severe bank erosion resulting in heavy damages every year to public and private properties. Therefore, urgent need is there to provide suitable flood/erosion protection measures in vulnerable places of the river reach to check the further damage.

After detailed deliberations, the Advisory Committee accepted the scheme. The acceptance of the proposal by Advisory Committee of DoWR, RD& GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD& GR such as FMP etc.

8. ***Flood Protection work near General Ground at upstream side of Decorai Irrigation Project at Seijosa in Pakke Kesang District, Flood Control, Arunachal Pradesh (Estimated Cost Rs. 82.16 Cr at January, 2022 PL, BC Ratio. 1.15)***

The project has been envisaged to reduce the vulnerability against the flooding and river bank erosion of Pakke river (Kameng Basin) through construction of earthen embankment with concrete block revetment and launching apron on left bank for a total length of 4.050 km, pro-siltation measures with 140 bed bars across the embankment on left bank, 7 RCC culvert across embankment over seasonal nalla for countryside drainage, gabion guide wall at vicinity of Sukha Nala, RWD Nala and VKV Nalla for a length of 340 m. The project is planned to benefit area of about 550 ha and 12,474 populations in the Seijosa Town of Pakke Kesang district of Arunachal Pradesh.

A detailed presentation on the scheme was made by the project authority informing that the lateral diversion of river flow course towards left bank side is causing inundation and damage of urban homestead land, agriculture land and other adjoining areas of Seijosa town and thus suitable flood/erosion protection measures in vulnerable places of the river reach to check the

further damage have been provisioned. The Decorai Barrage is situated at the downstream of the proposed project area.

Commissioner (FM) suggested that the embankments of the proposal may be designed considering the afflux bunds of the existing Decorai Barrage so that there is no adverse effect. Project Authority replied that detailed design of the structures will be made keeping this into consideration.

After detailed deliberations, the Advisory Committee accepted the scheme with the suggestion to maintain the project during the life of the structure with utmost concern. The acceptance of the proposal by Advisory Committee of DoWR, RD& GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD& GR such as FMP etc.

9. ***Providing Flood Protection Works and Channelization of Suketi Khad along with other Tributaries under Beas Catchment area in district Mandi, Flood Control, Himachal Pradesh (Estimated Cost Rs. 485.23 Cr at February, 2021 PL, BC Ratio. 1.13)***

Suketi Khad is a tributary of river Beas in the Balh Valley of District Mandi. The devastating floods during rainy season & Cloud burst in Suketi Khad and its tributaries cause major losses to private houses, public properties and fertile agricultural lands every year. Major damages due to flood occurred in the years 2014 and 2018. The present proposal has been envisaged to provide suitable flood protection works/anti erosion measures in the vulnerable reaches of Suketi Khad. The works involved includes embankment with slope pitching & launching apron (17.5 km), Gabion wall with launching apron (19.8 km), bank protection works / revetments with launching apron (14.7 km), check structures and RCC box culverts. The project is planned to benefit area of about 881 ha and about 41,493 population in the Mandi district of Himachal Pradesh.

A detailed presentation was made by the project authority informing that bank stabilization through embankments, protection revetments, gabion walls, cross structures on vulnerable reaches, on both the banks and RCC box culverts has been incorporated in the present proposal as per the suggestion of the mathematical modeling study done by CWPRS, Pune. It was also informed that the forest clearance for the project has been obtained, and no land acquisition is proposed in the scheme. Further, the scheme has been duly recommended by the State Technical Advisory Committee.

After detailed deliberations, the Advisory Committee accepted the scheme. The acceptance of the proposal by Advisory Committee of DoWR, RD& GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD& GR such as FMP etc.

10. ***Providing Flood Protection Measures for Swan River & its tributaries joining Beas Basin in Tehsil Amb, District Una, Flood Control, Himachal Pradesh (Estimated Cost Rs. 339.25 Cr at April, 2021 PL, BC Ratio. 1.09)***

River Swan originates from Shivalik hills, flows in north-east direction & joins the river Beas downstream of Pong Dam. Flood/Erosion protection works on river Swan joining river Sutlej have already successfully completed under Phase-I to Phase-IV. In the instant proposal river Swan joining river Beas has been considered in the Una district. The present proposal has been envisaged to provide suitable flood protection works/anti erosion measures in the vulnerable reaches of river Swan. The works involved includes embankment with slope pitching & launching apron (41.95 km), Gabion wall with launching apron (18.95 km), check structures and RCC box culverts. The project is planned to benefit area of about 510.18 ha and about 14,744 population in the Una district of Himachal Pradesh.

A detailed presentation was made by the project authority informing that bank stabilization through embankments, protection revetments, gabion walls, cross structures on vulnerable reaches, on both the banks and RCC box culverts has been incorporated in the present proposal as per the suggestion of the mathematical modeling study done by CWPRS, Pune. It was also informed that the forest clearance for the project has been obtained, and no land acquisition is proposed in the scheme. Further, the scheme has been duly recommended by the State Technical Advisory Committee.

After detailed deliberations, the Advisory Committee accepted the scheme. The acceptance of the proposal by Advisory Committee of DoWR, RD& GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD& GR such as FMP etc.

11. ***Providing Flood Protection / Anti Erosion measures for Different Khads under Jaswan Pragpur Constituency, Distt. Kangra, Flood Control, Himachal Pradesh (Estimated Cost Rs. 504.07 Cr at April, 2021 PL, BC Ratio. 1.04)***

The Jaswan Pragpur constituency is situated on the left bank of river Beas, upstream of Maharana Pratap Sagar Dam (Pong Dam) in District Kangra, in Himachal Pradesh. The Constituency has number of rain fed/ non-perennial Khads/stream and their tributaries. Out of

these Khads, there are 14 major Khads which join river Beas. These Khads have catchment area which is subjected to very heavy rainfall and subsequent landslides. The flow in the Khads breaches the banks, erode the adjacent areas and change their courses. The present proposal has been envisaged to provide suitable flood protection works/anti erosion measures in the vulnerable reaches of various khads joining the river Beas. The works involved includes embankment with slope pitching & launching apron (63.66 km), Gabion wall with launching apron (36.35 km), Bank Protection works / Revetments with launching apron (14.5 km), check structures and RCC box culverts. The project is planned to benefit area of about 811.03 ha and about 23,715 population in the Kangra district of Himachal Pradesh.

A detailed presentation was made by the project authorities informing that bank stabilization through embankments, protection revetments, gabion walls, cross structures on vulnerable reaches, on both the banks and RCC box culverts has been incorporated in the present proposal as per the suggestion of the mathematical modeling study done by CWPRS, Pune. It was also informed that the forest clearance for the project has been obtained, and no land acquisition is proposed in the scheme. Further, the scheme has been duly recommended by the State Technical Advisory Committee.

Secretary DoWR advised that khad wise protection works may be prioritized on the basis of extent of affected areas, property and population. This prioritization may be accordingly included in the investment clearance proposal.

After detailed deliberations, the Advisory Committee accepted the scheme. The acceptance of the proposal by Advisory Committee of DoWR, RD& GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD& GR such as FMP etc.

12. ***Providing Flood Protection Works to Seer Khad from village Talwara to Balghat in Tehsil Ghumarwin/Jhandutta, District Bilaspur, Flood Control, Himachal Pradesh (Estimated Cost Rs. 195.49 Cr at April, 2021 PL, BC Ratio. 1.06)***

Seer Khad is a major tributary of river Sutlej, originates at Awah Devi which is 10 km from Sarkaghat in Mandi district. After draining Kot-Ki-Dhar and a greater portion of Ghumarwin Tehsil, it joins river Sutlej at village Serimatla which is about 15 km downwards from Bilaspur town. Seer Khad is also known as "River of Sorrow" in Sarkaghat, Jahu & Ghumarwin area as it creates havoc during monsoon almost every year. The devastating floods & cloud burst waters in Seer Khad cause major losses to private houses, public property and fertile agricultural lands every year. The present proposal has been envisaged to provide suitable flood protection works/anti erosion measures in the vulnerable reaches of Seer khad. The works involved includes

embankment with slope pitching & launching apron (10.75 km), Gabion wall with launching apron (11.25 km), check structures and RCC box culverts. The project is planned to benefit area of about 179.35 ha and about 14,647 population in the Bilaspur district of Himachal Pradesh.

A detailed presentation was made by the project authorities informing that bank stabilization through embankments, protection revetments, gabion walls, cross structures on vulnerable reaches, on both the banks and RCC box culverts has been incorporated in the present proposal as per the suggestion of the mathematical modeling study done by CWPRS, Pune. It was also informed that the forest clearance for the project has been obtained, and no land acquisition is proposed in the scheme. Further, the scheme has been duly recommended by the State Technical Advisory Committee.

After detailed deliberations, the Advisory Committee accepted the scheme. The acceptance of the proposal by Advisory Committee of DoWR, RD& GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR, RD& GR such as FMP etc.

13. ***Project for construction of flood protection work for Thathyur and Bhawan from Aglad river in TehriGarhwal, Flood Control, Uttarakhand (Estimated Cost Rs. 30.22 Cr at 2021 PL, BC Ratio. 2.62)***

River Aglad is a large tributary of the Yamuna river. Due to devastating floods/cloud burst, specifically after 2011, Aglad river got diverted from its main course and severe erosion took place on both banks along with landslides. The project envisaged construction of flood protection works along Aglad and its tributaries to protect residential and agricultural land in between Bhawan and Thathyur. The project components include construction of rubble masonry walls along with apron of cement concrete blocks at different location of right and left bank of Aglad river, Belgargad nalla, Kafulta nala, Paligad river and Dyuli Gad river. The project is planned to benefit area of about 29.70 ha and about 3,750 people in the Tehri Garhwal district of Uttarakhand.

A detailed presentation was made by the project authorities mentioning that the scheme has been duly recommended by the State Technical Advisory Committee, and also by GFCC. No land acquisition is involved and forest clearance has been obtained from the competent authority. The project is essential as it will protect the valuable agricultural land and private properties.

After detailed discussion, the Advisory Committee accepted the proposal. However, the acceptance of the proposal by the Advisory Committee of DoWR,RD&GR does not guarantee any eligibility towards release of fund under any existing scheme of DoWR,RD&GR.

Representative of Chief Advisor (Cost) mentioned that for estimation of the project cost the guidelines of CWC are being followed. However, it may be appropriate that there is a standardized per unit cost of different works available as reference so that the total estimate for a project may be verified for any wide variation due to various reasons. Committee members opined that given the wide variation in the nature of the water resources project there will be a wide variation in the rates of the works throughout the country. It was decided that possibility of standardization of rates for major items/works may be explored by CWC.

The meeting ended with vote of thanks to the Chair.

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ANNEXURE

Government of India
ADVISORY COMMITTEE FOR CONSIDERATION OF TECHNO-ECONOMIC VIABILITY OF MAJOR & MEDIUM IRRIGATION, FLOOD CONTROL AND MULTIPURPOSE PROJECT PROPOSALS
150th MEETING HELD ON, SEPTEMBER 19th, 2022

List of Participants

Shri Pankaj Kumar, Secretary, DoWR, RD & GR — In Chair

Members of the Advisory Committee or their representative / nominees:
S/Shri

1.	Dr. R. K. Gupta, Chairman, Central Water Commission	Member
2.	Dr. Saurabh Upadhyay, Scientist-C (Representing Secretary MoEF & CC)	Member
3.	S.K. Mohiddin, Scientist-D (representing Chairman, CGWB)	Member
4.	Smt. Richa Misra , JS&FA, DoWR, RD & GR	Member
5.	Adlul Islam, Pr. Scientist , ICAR (Representing DG, ICAR)	Member
6.	Shri P.K. Shukla, Chief Engineer, CEA(Representing Secretary, Department of Power & Chairman, CEA)	Member
7.	Shri R. A. S. Patel, Deputy Commissioner (Representing Secretary, Department of Agriculture & Farmers Welfare)	Member
8.	Shri Amit Singh Negi, Joint Secretary, (Representing Deptt. of Expenditure)	Member
9.	Shri Yogesh Paithankar, Chief Engineer, Project Appraisal Organization, CWC	Member Secretary

Special Invitees:

Deptt of Water Resources, RD & GR
S/Shri

1. Smt. Debashree Mukherjee, Additional Secretary
2. A.S. Goel, Commissioner (SPR)
3. Atul Jain, Commissioner (FM)
4. Shri Anand Mohan , JS (PP & RD)
5. Rajeev Singhal, Senior Joint Commissioner (FM)

Deptt.of Expenditure, Ministry of Finance
S/Shri

1. V.K Jindal, Additional Chief Advisor (Cost)

Central Water Commission
S/Shri

1. K. Vohra, Member (WP&P), New Delhi
2. J. Chandrashekhar Iyer, Member (D & R), New Delhi
3. P.M Scott, Member (RM), New Delhi
4. B.P Pandey, Chief Engineer, IMO, New Delhi
5. D. Ranga Reddy, Chief Engineer, KGBO, Hyderabad
6. B.K Karjee, Chief Engineer, BBO, Guwahati
7. Kiran Pramanik, Director, PA(N) Dte , New Delhi
8. Piyush Kumar, Director, FM-I, Dte., New Delhi
9. A. S Banode, Director, CA (Irr.)-I Dte., New Delhi
10. R.D Meena, Director, FMP, Dte, New Delhi
11. S.K Singh, Deputy Director, M &A directorate, CWC, Ranchi
12. Mohd. Amanulla, Deputy Director, CA(Irigation-1) Dte., New Delhi
13. Mannu Ji Upadhyay, Deputy Director, CA (Irrigation-2) Dte. , New Delhi
14. M K Gupta, Deputy Director PA(N) Dte, New Delhi
15. Nitish Nitin, Assistant Director PA(N) Dte, New Delhi
16. Dharmendra Chauhan, Assistant Director, FMP Dte. , New Delhi
17. Lalit Meena, Assistant Director, FM-I, New Delhi

Ganga Flood Control Commission (GFCC), Patna
S/Shri

1. Sher Singh , Member (P)

Officers from State Government of Jharkhand
S/Shri

1. Er. Mukesh Kumar, Chief Engineer, WRD Jharkhand
2. Rajesh Kumar Chaudhary, SE, Design Planning & Monitoring , Palamu

Officers from State Government of Bihar
S/Shri

1. Shri Ishwar Chandra Thakur, Engineer-in-chief, Irrigation Creation, WRD, Bihar
2. Shri Charu Chandra Mishra, Executive Engineer, WRD, Bihar

Officers from State Government of Andhra Pradesh
S/Shri

1. Hari Narayan Reddy, Chief Engineer (TGP)
2. D. Madangopal, Executive Engineer, Irrigation Division, Srikalahatsi
3. C. Adinarayana naidu, Deputy Executive Engineer
4. G. Suresh, Assistant Executive Engineer, Irrigation Section, Srikalahasti
5. Krishna Rao, Liasoning Officer

Officers from State Government of Assam
S/Shri

1. Shri Syedain Abbasi, Addl Chief Secretary, Irrigation & WR, PHE
2. Arup Barthakur, Chief Engineer (QC) , WRD
3. Dhiraj Saikia, Chief Engineer, Irrigation
4. Deep Pegu, Director (Design), WRD

5. K M Gopal Sana Rajkumar, Superintending Engineer
6. Gopal Chetri, EE & Nodal officer, Central Sector Schemes, Irrigation, Assam
7. Dipak Bora, EE, Dibrugarh W.R Divsion
8. Syed Noor Rahman, OSD, Irrigation, BTC, Kokrajhar
9. Sourav Das, AE, Project Division

Officers from State Government of Arunachal Pradesh
S/Shri

1. Likar Angu, Chief Engineer (P &D), WRD.
2. Harish Kumar Chauhan, Liaison officer
3. Vishal Singh, Consultant

Officers from State Government of Himachal Pradesh
S/Shri

1. Sanjeev Kaul, Engineer-in-Chief, Jal Shakti Vibhag
2. Dr. Dharmender Gill, Engineer-in-Chief (Projects)
3. Sunil Kanotra, Chief Engineer, Dharamshala
4. Suresh Kr.Mahajan, Chief Engineer (PMU)
5. Rajeev Kumar, Superintending Engineer, Nurpur
6. Deepak Garg, Superintending Engineer, Dharamshala
7. Upender Vaidya, Superintending Engineer, Sunder Nagar
8. Sanjeev Vohra, Executive Engineer, PSMIP
9. Sandeep Chaudhary, Executive Engineer, Pragpur
10. Praveen Kumar Sharma, Executive Engineer, FP Div. Gagret
11. Arvind Kumar Verma, Executive Engineer, Ghumarwin
12. Praveen Gupta, Executive Engineer, Baggi

Officers from State Government of Uttarakhand
S/Shri

1. Umesh Narain Pandey, Additional Secretary, Irrigation
2. Shri Prem Singh Panwar, Chief Engineer (Irrigation)
3. R.K Gupta, Superintending Engineer, Irrigation Works, New Tehri
4. Kamal Singh, Executive Engineer, Irrigation , Narendranagar

Officers from WAPCOS Limited
S/Shri

1. Sanjay Sharma, Senior General Manager
2. Gagandeep Singh, Senior Engineer