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Government of India
Central Water Commission
Project Appraisal Organization

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7th Floor (S), Sewa Bhawan,
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Dated: 03.02.2022

Minutes of Meeting

A copy of the Summary Record of discussion of the 148th 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 17.01.2022 through video conferencing 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.

Enclo: As above.

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

To,
Members of Committee:

1. Chairman, CWC, SewaBhawan, 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, JorBagh, New Delhi.
5. Secretary, Department of Agriculture, Cooperation & Farmers Welfare, R. No. 126, KrishiBhawan, New Delhi.
6. Secretary, Ministry of Tribal Affairs, Room No. 738, A-Wing, ShastriBhawan, New Delhi.
7. Director General, ICAR, Room No-108, KrishiBhawan, New Delhi.
8. Chairman, CEA, SewaBhawan, R. K. Puram, New Delhi.
9. Chairman, Central Ground Water Board, Jam Nagar House, New Delhi.
10. Adviser (Power), NITI Aayog, Room No. 248, YojanaBhawan, New Delhi.
11. Adviser (WR&LR), NITI Aayog, Room No. 230, YojanaBhawan, 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.
2. Member (D&R), CWC, New Delhi.
3. Member (RM), CWC, New Delhi.
4. Member (WP&P), CWC, New Delhi.
5. Principal Secretary, WR, Govt. of Madhya Pradesh, Bhopal
6. Principal Secretary, WR, Govt. of Himachal Pradesh, Shimla
7. Commissioner, WRD, Govt. of Manipur, Imphal- with the request to abide by the direction of Election Commission of India conveyed vide letter No. 437/6/CG/LA-Multi/ECI/LET/FUNCT/MCC/2022 dated 28.01.22 that *"Acceptance of Loktak project by Advisory committee is subject to the condition that no publicity about the sanctioned project shall be made in poll going State and no political leader may claim the sanction of project as an achievement in any form in any public forum"*
8. Secretary, Irrigation & Flood Control Department, Govt of Jammu & Kashmir, Civil Secretariat, Jammu -180001
9. Managing Director, Jammu & Kashmir State Power Development corporation, Govt of Jammu and Kashmir, Ashok Nagar, Satwari, Jammu-180004
10. Director General, NWDA, Saket, New Delhi
11. Joint Secretary (RD&PP), DoWR, RD&GR.
12. Joint Secretary (IC&GW), DoWR, RD&GR.
13. Chief Advisor (Cost), Department of Expenditure, Lok Nayak Bhawan, New Delhi.
14. Commissioner (SPR), DoWR, RD & GR, New Delhi.
15. Commissioner (FM), DoWR, RD & GR, New Delhi.
16. Commissioner (Indus), DoWR, RD & GR, New Delhi.
17. Engineer-in Chief (Projects), Govt of Himachal Pradesh, Mandi.
18. Engineer-in Chief (WRD), Govt of Manipur, Imphal.
19. Engineer-in Chief (WRD), Govt of Madhya Pradesh, Bhopal
20. Chief Engineer (B&OBO), CWC, Shillong.
21. Chief Engineer, IBO, CWC, Chandigarh.
22. Chief Engineer, NBO, CWC, Bhopal.
23. Chief Engineer (FMO), CWC, New Delhi.
24. Chief Engineer (IMO), CWC, New Delhi.
25. Chief Engineer (PPO), CWC, New Delhi.
26. Chief Engineer, Rabi & Tawi, Irrigation complex, Canal Road, Jammu.

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
Deptt. 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

148th MEETING HELD ON JANUARY 17TH 2022 THROUGH VC

SUMMARY RECORD OF DISCUSSION

The 148th 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, 17th January, 2022 through video conferencing. The list of participants is **annexed** herewith.

At the outset, the Chairman welcomed the participants and noted that projects from poll bound State of Manipur had been included in the agenda. After discussion, it was decided that the clearance in respect of Loktak Lift Irrigation project, Manipur, if approved by the Committeewould be conveyed after consulting Election Commission of India. The Chairman requested Member-Secretary to take up the agenda items.

A brief record of the decisions taken in the meeting are given below.

I. Confirmation of the Minutes of the 147th Meeting of the Advisory Committee :

The 147th meeting of the Advisory Committee was held on 24.12.2020 through video conferencing. The Summary Record of Discussion was circulated vide letter no. No. T-28074/4/2020-CE-PAO dated 30/12/2020. Observations of Chief Advisor Cost was received vide letter dated 04.01.2021 regarding:

a. Review of the existing methodology of Benefit-Cost Ratio (BCR) considering present value and needs.
b. The yield and price of farm produce provided by the Agriculture Department of State and considered for working out BCR are, in general, significantly higher. It was suggested

that in some of the completed projects, yield and price of farm produce may be got verified to see the authenticity of the projections by the States.

Member-Secretary highlighted that the methodology adopted for calculation of BCR is as per the guidelines of Central Water Commission (CWC). Further, the yield and farm produce considered for BCR is as per the information certified by the concerned State Agriculture Department as explained during the 147th meeting. A Working Group has been constituted under the chairmanship of Member (WP&P), CWC for "Reviewing the calculation of Benefit – Cost ratio and Procedure for Revised Cost Estimation for Major and Medium Irrigation, Flood Control and Multipurpose Projects".The above aspects are also being considered in the above group.

Thereafter, the Committee confirmed the minutes of 147th meeting of the Advisory Committee.

II. **Follow up Discussions of the 147th Meeting :**

The Member-Secretary informed that in the 147th meeting it was decided that:

i. A mechanism needs to be devised whereby the appraising agencies do not merely go by the certificates from the State Agriculture agencies, but also examine if the yield, and unit price of the yield, is within acceptable norms.
ii. An evaluation process needs to be in place under DoWR, RD &GR, whereby the assumptions on proposed benefits adopted at the DPR stage, are compared against the actual realizations after the project is completed.

On point No (i), it was noted that a Working Group under the chairmanship of Member (WP&P), CWC for "Reviewing the calculation of Benefit – Cost ratio and Procedure for Revised Cost Estimation for Major and Medium Irrigation, Flood Control and Multipurpose Projects" has been constituted. The issue of crop yield and its unit price is under discussion of the Working Group.

On point No (ii) it was informed that, CWC under the R&D scheme of DoWR, RD & GR conducts performance evaluation studies for completed projects. Many studies have already been done.

III. **Project Proposals considered by the Advisory Committee :**

1. **Bina Complex Irrigation and Multi-Purpose project (A component of Ken-Betwa Link Project, Phase-II), Madhya Pradesh**

(Estimated Cost: Rs. 3,353.62 crore at 2017-18 price level), BC Ratio: 1.502, CCA: 96,000 Ha, Power: 25 MW)

A detailed presentation was made by NWDA whereby it was informed that the project is a component of Ken Betwa Link Project (KBLP) Phase-II. Bina Complex Multipurpose Project consists of four storage dams viz. Madia and Chakarpur on Bina River, Semra Ghat Diversion Dam on Dhasan River and Dehra Dam on Dehra Nalla, a water conductor/ feeder from Semra Ghat Diversion Dam to Dehra Nalla and canal off-take from Chakarpur Dam.

The project is designed to irrigate 96,000 ha land annually, including 6,000 ha land to be irrigated by local farmers by direct lift from reservoir. The entire project is based on pressurized irrigation system. Provision of 19.2 MCM, 25 MCM & 6 MCM of water has been kept for drinking purpose, industrial use and environmental releases respectively. 25 MW of hydro power is proposed to be generated through this project by 2 power houses proposed at Madia Dam with installed capacity of 21 MW (2x10.5 MW each) and at Dehra Dam with installed capacity of 4 MW.

The estimated cost of the project is Rs. 3,353.62 crore @2017-18 price level. BCR of the project is 1.502. The project is proposed to be completed by 2027-28. Statutory clearances such as environment and forest clearance from MoEF&CC has been obtained for the earlier proposal which included Dhasan diversion dam of 80.5 MCM live storage capacity. However, in the current proposal Dhasan Dam has been omitted and provision for Semraghat Diversion Dam of 6 MCM live storage capacity has been kept in upstream of the earlier proposed Dhasan diversion dam.

Action for obtaining the clearance in respect of R&R of tribal population is under process.

Representatives from Department of Expenditure pointed out possible repetition of audit and account charges, being mentioned separately as well as included in establishment charges. It was however, clarified that the same are as per the guidelines for appraisal of irrigation projects. Further, the Commissioner (SPR) mentioned that these are estimates, while the actual cost for works, as well as the establishment and audit/ accounts charges, are to be booked as per actuals.

Department of Expenditure representatives also submitted that the yield considered for the project for post irrigation period is much higher than average yield data of the State, as available in the reports of Ministry of Agriculture & Farmers Welfare. He suggested that Ministry of Agriculture & Farmers Welfare may look into the yield and price of farm produce, before the same is considered by the Committee. Representative of Ministry of Agriculture & Farmers Welfare submitted that the data received from

various State Govt are compiled in the crop division of the Ministry. Therefore, the certificate of the State Agricultural Department should be considered. It was clarified by the Project Authorities that the yield from irrigated crops has been certified by State Agriculture Department.

Member-Secretary informed that such observations were made in the previous TAC meeting also and it was decided that a mechanism needs to be devised whereby the appraising agencies do not merely go by the certificates from the State Agriculture agencies, but also examine if the yield, and unit price of the yield, is within acceptable norms. Member-Secretary reiterated that a Working Group under the chairmanship of Member (WP&P), CWC for "Reviewing the calculation of Benefit – Cost ratio and Procedure for Revised Cost Estimation for Major and Medium Irrigation, Flood Control and Multipurpose Projects" has been constituted. The issue of crop yield and its unit price is under discussion of the Working Group.

After deliberation, the Advisory Committee accepted the project proposal for estimated cost of Rs 3,353.62 crore (2017-18) subject to the following:

1. NoC or revised environmental clearances from MoEF&CC with respect to new provision of Semraghat Dam in place of Dhasan Dam shall be obtained.
2. New R&R plan with respect to new provision of Semraghat Dam in place of Dhasan Dam shall be prepared as may be required.
3. Clearance from MoTA for the project shall be obtained.
4. Any other mandatory clearance, if required.

2. **Lower Orr Dam Project under Ken Betwa Link Project (Phase-II), Madhya Pradesh**

(Estimated Cost: Rs. 2,657.04 crore at 2017-18 price level, BC Ratio: 1.54, CCA: 90,000 Ha, Power: 19 MW (solar))

A detailed presentation was made by the Chief Engineer (North), National Water Development Authority (NWDA). The project is proposed across Orr river near Didauni village at the border of Shivpuri and Ashok Nagar district of Madhya Pradesh (MP). Lower Orr Dam Project as part of KBLP (Phase-II) has been planned as a multipurpose project with irrigation as a major benefit whereas power, drinking water supply and flood moderation are other incidental benefits. It envisages construction of 45 m high composite dam, in which concrete portion is 487 m long and earthen dam is 1,731 m long with a maximum height of 36 m, across river Orr.

The project will provide annual irrigation to 90,000 ha in Shivpuri and Datia districts of MP. There is a provision of micro irrigation for better irrigation efficiency. Provision of

5.49 MCM of water for drinking water supply and 44.90 MCM for environmental releases have also been kept. Further provision of 19 MW (solar power) has been kept in the proposal.

The cost of the project has been finalized at 2017-18 price level for Rs 2,657.04 crore. Accordingly, corresponding to final cost estimate of Rs. 2,657.04 crore at 2017-18 price level, BCR for the project has been finalized as 1.54. The project is scheduled for completion by March 2026.

Statutory clearances such as environment clearances, forest clearance stage-I and forest clearance stage-II have been accorded by MoEF&CC. Clearance of rehabilitation and resettlement plan near Didauni village in Khaniyadhana /Chanderi Tehsil of Shivpuri / Ashok Nagar, Madhya Pradesh has also been accorded by MoTA.

After detailed discussions, the Advisory Committee accepted the project proposal for estimated cost of Rs. 2,657.04 crore (2017-18) subjected to following conditions:

1. Statutory clearances (environment, forest, R&R etc), wherever required/pending shall be obtained by project authorities and conditions of such clearances shall be complied by them.
2. Compliance to observations of design wing of CWC.

3. Kotha Barrage Project under Ken Betwa Link Project (Phase-II), Madhya Pradesh

(Estimated Cost: Rs.709.47 crore at 2017-18 price level, BC Ratio: 1.63, CCA: 20,000 Ha, Power: 8 MW (solar))

A detailed presentation was made by the Chief Engineer (North), National Water Development Authority (NWDA). Kotha Barrage site is located on Betwa river near village Kotha in Kurwai tehsil, Vidisha district of MP. The total catchment area up to Kotha barrage site is 8,711 sq. km. The project encompasses construction of 576 m long barrage having 32 bays, 15m clear span each.

As per the availability of water in barrage, culturable command area (CCA) of 20,000 ha will be irrigated in Vidisha and Sagar districts of MP. The project will provide an annual irrigation of 25,500 ha by utilizing 109.64 MCM of water. There is a provision of 6.6 MCM for drinking water requirement and environmental releases. Further, 8 MW (solar power) has also been kept in the project proposal. There is provision of pressurized pipe micro irrigation system for better irrigation efficiency.

The cost of the project has been finalized at 2017-18 price level for Rs 709.47 crore. Accordingly, corresponding to final cost estimate of Rs. 709.47 crore at 2017-18 price level; the benefit cost ratio for the project has been finalized at 1.63. The project is scheduled for completion by March 2025.

After detailed discussions, the Advisory Committee accepted the project proposal for an estimated cost of Rs 709.47 crore (2017-18) subject to following conditions:

1. Statutory clearances, (environment, forest, R&R etc) wherever required/pending shall be obtained by project authorities and conditions of such clearances shall be complied by them.
2. Compliances to observations of design wing of CWC.

4. **Modified Ujh Multipurpose Project, Jammu & Kashmir (UT)**

(Estimated Cost: Rs. 11,907.77 crore at Dec, 2019 price level, BC Ratio: 0.79, CCA: 40,716 ha, Power: 89.5 MW)

A presentation on the modified project proposal was made by the Chief Engineer (IBO), CWC.

The Ujh multipurpose project was declared as a National Project in 2008. The Detailed Project Report (DPR) of Ujh Multipurpose Project, J&K was initially prepared by Indus Basin Organisation (IBO) of CWC in 2013. The DPR was considered in the 131st meeting of the Advisory Committee held on November, 16, 2016 wherein the project was agreed to 'in- principle'. Subsequently the DPR of the project was revised so as to address the concerns regarding submergence of land. The revised DPR of the project was accepted by the Advisory Committee in its 139th meeting held on 07.01.2019 for an estimated cost of Rs. 5,850 crore at July, 2017 price level. CCA to be irrigated under the project was proposed as 16,743 ha with irrigation intensity of 188.9 %. While according approval to the project, the committee directed that "for ensuring consumptive utilization of water beyond already envisaged through project, possibility of additional utilization should be explored at the earliest so that the water released to generate hydropower may not flow out of the country and such project should be implemented on priority".

Irrigation & Flood Control Dept., J&K framed a modified proposal of Ujhmultipurpose project for inclusion of additional CCA of 23,973 ha beyond scope of the Ujh MPP already approved in the 139th meeting of the Advisory Committee. Accordingly, a modified proposal of DPR of this project was accepted by the Advisory Committee in its 144th meeting held on 08.05.2020 for an estimated cost of Rs. 9,167 crore at Dec, 2019 price level.

EFC memo for funding of project at cost of Rs. 9,167 crore was sent to Ministry of Finance in Sept.2020. MoF in March 2021 requestedDoWR, RD & GR to examine the feasibility of redesigning the scheme to enhance its socio-economic benefit to BCR of at least 1. Accordingly, Member (WP&P), CWC took a number of interdisciplinary

meetings to enhance BCR and accordingly DPR of UJhmultipurpose project has been modified.

Indus Waters Treaty, 1960 was signed between India and Pakistan for sharing water of the Indus System of rivers. India got the full rights for utilization of water of the three eastern rivers namely Ravi, Beas and Sutlej as per the Treaty. River Ujh is a tributary of Ravi. The modified Ujh MPP has been envisaged to optimally utilise water of river Ujh. Further, water available at MakoraPattan, d/s of confluence of river Ujh with river Ravi, in post Ujh MPP scenario has also been assessed by CWC and being communicated to Govt. of Punjab. A diversion structure is being contemplated by Govt. of Punjab for diverting some of the water available at MakoraPattan for use in their Upper Bari Doab System (UBDC) system.

Proiect details

The modified Ujh MPP on river Ujh consists of 110 m high concrete dam with a dam toe power house (89.5 MW). The project includes a barrage at about 1.5 km downstream of the dam toe power house. Two main canals, Right Main Canal (RMC) and Left Main Canal (LMC) would be emanating from the barrage from each of the banks of the river to cater to the command area to the tune of 40,716 ha. The irrigation potential of the project works out as 91,073 ha with irrigation intensity of 223.7 percent.

The crop water requirement has been assessed as 577.31 MCM. In addition, drinking water and industrial water requirement has been assessed as 18.92 MCM and 20 MCM respectively. Evaporation losses have been tentatively assessed as 42 MCM. Thus, total consumptive water requirement works out to 658.23 MCM excluding the environmental flow to the tune of 172.87 MCM.

The estimated cost of the project is Rs.11,907.77 crore at price level Dec., 2019. The cost has been apportioned between water (irrigation and drinking water) and power component as Rs.11,576.85 crore (97.22%) and Rs. 330.91 crore (2.78%) respectively. BCR for the project works out to 0.79 corresponding to cost of water component (Rs. 11,576.85 crore). Govt of J&K has given concurrence vide letter dated 03.01.2022 for Rs. 11,908 crore.

The Committee noted that the cost of the water component (for B. C. Ratio = 1) works out as Rs. 9,000.45 crore. However, as per cost apportionment, the cost of water component is Rs. 11,576.85 crore. Similarly, by taking average tariff rate of Rs.3.5 per Kwh (furnished by Govt. of J&K), viable cost for power component works out as Rs. 273.70 crore. However, minimum cost of E&M of power house and other necessary items comes to Rs 330.91 crore.

Discussion

Advisor (Cost), Ministry of Finance made some observations regarding increase in cost in land acquisition and price-level of the cost estimate being same as approved in 144th TAC. Member (WP&P) informed that due to consideration of land acquisition in Phase-II and actual land acquisition rates as per 'The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013', the cost

of land acquisition has increased. Further, regarding price-level of Dec., 2019, the same price level is considered as not much difference is observed in the cost estimates at latest price level.

Joint Director, MoEF&CC requested for compliance to observations raised by EAC. Member (WP&P), CWC informed that approved hydrological series used for design of the project has been submitted to the project authority for submission to EAC. Further, a condition stating for site specific study may be carried out for accurate assessment of e-flow based on the ecological requirement of fish species in consultation with CIFRI as required by MoEF&CC has been incorporated in the TAC Note.

The Committee noted that the project has been planned as a storage project to store water which is flowing freely across the border. For the project to be economically viable, BCR needs to be more than 1, in the hilly States like J&K (UT). The proposal of this project does not fully satisfy economic viability as per the existing criteria.However, keeping in view the strategic importance of the project for utilization of Indian share of water of eastern river, namely Ravi, as per the Indus Water Treaty and regulation of waters flowing across the border, the committee accepted the project proposal amounting to Rs 11,907.77 crore (Dec 2019) subject to the following conditions:

1. Relaxation of BCR criteria of 1 as the project is of strategic importance and is located in J&K.
2. Statutory clearance (environment, forest, wildlife, R&R) for Phase-2 (extension of RMC) of the project shall be obtained.
3. Vetting of pre-construction designs and drawings of all components of the project by CWC.
4. Compliance by the project authority to the conditions of specialized directorates of CWC/CEA, put by them while accepting the DPR and obtaining clearance from other Central/State agencies.
5. Site specific study may be carried out for accurate assessment of e-flow based on the ecological requirement of fish species in consultation with CIFRI as required by MoEF&CC.
6. For optimizing canal and distribution system layout, benefits and land acquisition cost etc, detailed topographical survey may be undertaken by the project authority.
7. Micro irrigation shall be encouraged in the command as per feasibility.
8. The proposal for utilization of waters of river Tawi which would be saved after implementation of Ujh project may be finalized by UT of J&K urgently and its implementation should be taken up in such a manner so as to complete it by the time Ujh project is completed.

5. **RCE of ERM of Loktak Lift Irrigation Project, Phase-I, Manipur**

(Estimated Cost: Rs 81.59 crore at Dec, 2020 price level, BC Ratio: 4.20, CCA: 12,600 Ha)

Detailed presentation was made by the Commissioner (WR), Govt of Manipur, whereby it was informed that the Loktak Lift Irrigation Project (LLIP), located in Bishnupur

district of Manipur, was approved by erstwhile Planning Commission, Govt. of India in1972, for an estimated cost of Rs. 462 lakh. Subsequently, the project was revised.

The 1st phase of Extension, Renovation and Modernization (ERM) of LLIP proposal with an estimated cost of Rs. 25.56 crore@ 2011 PL was accepted by the Advisory Committee of MoWR, RD & GR in its 122nd Meeting held on 20.12.2013. Project authority stated that the ERM (phase-I) project could not be started due to non-availability of resources.

Project authorities further informed that presently, the system has mostly deteriorated and pumps have completed their service life, hence the Revised Cost Estimate (RCE) of the ERM (phase-I) of LLIP with an estimated cost of Rs. 81.59 crore @ 2020 PL (BCR 4.20) for revival of CCA to the tune of 12,600 ha (annual irrigation of 17,400 ha with 138% irrigation intensity) has been proposed considering the replacement of 7 pumps in Pump House No.1 which caters to the water supply in Imphal Main Canal (CCA 1,400 ha), Imphal Low Level Canal (CCA 7,600 ha) and Moirang Low Level Canal (CCA 3,600 ha). At present irrigation to the tune of 1,800 ha is being provided in the command of Imphal Low Level canal. The key components of the present ERM include replacement of pumps, de-siltation of canal, concrete lining of the main canal system, renovation/modernization of head regulators, cross regulators, outlets renovation/modernization/re-construction of escape culverts, RCC bridges, cross drainage System, etc. The project is planned to be completed by 2025.

The committee was further briefed that being an ERM project, there is no requirement for environmental or forest clearance, or R&R related clearances. Further, financial concurrence from Government of Manipur is already in place.

The Department of Expenditure representatives requested to explain how the changes in cropping pattern after ERM of project would be possible. Further, it was also requested to explain how will there be a huge increase in the CCA after the implementation of the project. Member (WP&P), CWC explained that the proposal include replacement of pumps in Pump House No. 1, restoration of existing command by way of desilting of canals and repair of structures. It appears that there has been no R&M work in the project. He therefore, requested project authorities to explain how are they going to ensure R&M after the completion of the scheme. Project authority representatives explained that due to insufficient funds the regular R&M works could not be carried out in the past. The matter will be taken care of in future. They further explained that there is no increase in CCA in this project. The project is serving 1,800 ha area as out of 7 pumps only 2 are working. Further, the canal system is unlined and there is heavy siltation due to land slides in some portions. The present proposal is part of the total LLIP. The proposed cropping pattern is as per the State Agriculture Department.

The committee accepted the proposal with the following condition:

(1) State will ensure adequate funds as per year-wise plan proposed.

(2) After completion of the project, State Government will ensure adequate O&M provision for proper up keep of the project.

(3) Acceptance of the proposal by the Advisory Committee of DoWR,RD&GR does not guarantee eligibility towards release of fund under any existing scheme of DoWR,RD&GR.

6. **Providing flood protection works and channelization of SuketiKhad along with other tributaries under Beas catchment area, Distt, Mandi, Himachal Pradesh**

(Estimated Cost: Rs 485.23 crore at February, 2021 price level, BC Ratio: 1.31, Area Benefitted: 881 Ha)

A detailed presentation was made by the project authorities informing that in view of the vulnerability of the region for flooding, a mathematical modeling study was done by CWPRS, Pune, whereby bank stabilization through protection embankment, revetments, gabion walls, cross structures on vulnerable reaches, RCC box culvert on both the banks, has been suggested. The present proposal is based on the above study. It was further presented that the area to be benefited is 881 hectares, while the cost has been estimated at Rs. 485.23 crore (February 2021 PL), with BCR working out as 1.31, which is acceptable considering the hilly State status of Himachal Pradesh.

It was also brought to the notice of the committee that the forest clearance for the project is in place, and no land acquisition is proposed in the scheme. Further, the scheme has been duly recommended by the State Technical Advisory Committee.

The Department of Expenditure representatives submitted the following:

- Regarding necessity of the project, it has been mentioned that major damages due to flood occurred in the years 2014 and 2018. However, in the abstract of annual flood damage report, for purpose of computation of annual benefits, 15 years period from year 2005 to 2019 has been considered for working of average annual losses due to bank erosion and annual losses due to breach/inundation. Whereas, losses occurred during the period of flood during flood years 2014 and 2018 should have been considered. In case flood occurred two times in ten years period, losses during two years flood period may be divided by frequency of flood period (say ten years in this case) to arrive at the annual loss. There is need to revisit formula for computation of BCR.
- Average annual losses due to bank erosion appears to have been considered twice i.e. once based on average of previous period from years 2005 to 2019 and once based on anticipated during economic life of the project. It may be re-checked.
- Amount of losses is almost same in each year during the 15 years period (i.e. including flood years 2014 and 2018) in respect of all types of losses (i.e land, cereals, commercial crops). Ideally, it should not be same. Reasonableness of data may be re-checked.
- For purpose of computation of average per annum loss due to crop, rate per quintal of by-product is in the range of 6% to 83% of rate of main crop. Rate of by-product seemingly should not be 83% of rates of main crop. Reasonability of rates of by-products considered may be ascertained.
- It is apprehended that if the realistic losses, price of farm produce and exclusion of farm produce of by-products are considered, BCR would decrease significantly.

It was further submitted that all the 4 flood control projects need attention in the aspect of calculation of BCR as the assumptions of yield rate and cost of the by-product appear to be on higher side. Such review could lead to reduction of BCR substantially thereby making the projects unviable. In view of the observations, Director (FM-1), CWC submitted that the computation of BCR is as per the guidelines. Representative of NITI Ayog submitted that there is a need to change the guidelines for flood schemes. Representative of Government of Himachal Pradesh submitted that the calculation of BCR has been done as per the previously accepted projects. Chairman of the Advisory Committee, in absence of reasonable justification for BCR calculation, directed CWC to review BCR calculation for all four flood control projects (**Sl No. 6, 7, 8 & 9 as per Meeting Agenda**) keeping in view the issues raised by the representative of DoE for consideration in the next meeting.

The meeting ended with vote of thanks to the Chair.

ANNEXURE

Government of India

ADVISORY COMMITTEE FOR CONSIDERATION OF TECHNO-ECONOMIC VAIBILITY OF MAJOR & MEDIUM IRRIGATION, FLOOD CONTROL AND MULTIPURPOSE PROJECT PROPOSALS

148thMEETING HELD ON, JANUARY 17th, 2022 THROUGH VIDEO CONFERENCING

List of Participants

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

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

1.	R. K. Sinha, Chairman, Central Water Commission	Member
2.	Dr. Y.P. Singh, Scientist-E (Representing Secretary MoEF&CC)	Member
3.	SaidulHaq. Scientist-D (representing Chairman, CGWB)	Member
4.	Avinash Mishra (Representing Advisor (WR&LR), NITI Aayog)	Member
5.	Manoj Sethi, JS&FA, DoWR, RD & GR	Member
6.	Adlul Islam, Pr. Scientist , ICAR (Representing DG, ICAR)	Member
7.	Balwan Kumar, Director, CEA(Representing Chairman, CEA)	Member
8.	R. A. S. Patel, Deputy Commissioner (Representing Secretary, Department of Agriculture & Farmers Welfare)	Member
9.	Amardeep Singh Chowdhary, Advisor (Cost), (Representing Deptt. of Expenditure)	Member
10.	Yogesh Paithankar, Chief Engineer, Project Appraisal Organization, CWC	Member Secretary

Special Invitees:

Deptt of Water Resources, RD & GR
S/Shri

1. A.S. Goel, Commissioner (SPR)
2. Atul Jain, Commissioner (FM)
3. P.K Saxena, Commissioner (Indus)
4. Amit Kumar Jha, SJC-SPR-II

Deptt.of Expenditure, Ministry of Finance
S/Shri

1. Amardeep Singh Chowdhary, Advisor (Cost)

National Water Development Authority (NWDA)
S/Shri

1. Bhopal Singh, Director General, NWDA, New Delhi
2. R.K. Jain, Chief Engineer(HQ), NWDA, New Delhi
3. Shiva Prakash, Chief Engineer (North), NWDA, Lucknow.
4. D.K. Sharma, Director (Technical), NWDA, New Delhi.
5. S.C. Awasthi, Superintending Engineer (N), NWDA, New Delhi.
6. B.L. Sharma, Superintending Engineer, Investigation Circle, NWDA, Gwalior
7. Raghvendra Kumar Gupta, Executive Engineer, Investigation Division, NWDA, Jhansi
8. S.K. Gawande, Executive Engineer, Investigation Division, NWDA, Bhopal

Central Water Commission
S/Shri

1. K. Vohra, Member (WP&P),
2. R.K. Pachauri, Chief Engineer, PPO
3. Ravindra Singh, Chief Engineer, FMO
4. N.M Krishanunni, Chief Engineer, IMO
5. Padma Dorje Gyamba,Chief Engineer, POMIO
6. P.M Scott, Chief Engineer, BBBO Shillong,
7. Shiv Nandan Kumar,Chief Engineer, IBO Chandigarh,
8. Aditya Sharma, Chief Engineer, NBO, Bhopal,
9. Kiran Pramanik, Director, PA(N),
10. Rajiv Kumar, Director PA(C)
11. Piyush Kumar, Director, FMP, Dte.
12. A. S Banode, Director. CA (Irr.)-I
13. Rajesh Kumar, Director, ISM-2 Dte.
14. Nikhil Jeph, Deputy Director, National Project Dte.
15. M.L Gaur, Deputy Director, National Project Dte.
16. Ankit Sahay, Deputy Director, CA(HWF) Dte.
17. M. Amanullah, Deputy Director, CA(Irr.-I) Dte.
18. Amitabh Meena, Deputy Director, PA(Central) Dte.
19. Neelam Narolia, Deputy Director, NBO, Bhopal
20. Mohd. Amanulla, Deputy Director, CA(Irigation-1) Dte.
21. Rishi Kumar, Executive Engineer, (Chenab Division), Jammu.
22. M K Gupta, Deputy Director PA(N) Dte
23. Nitish Nitin, Assistant Director PA(N) Dte
24. Dharmendra Chauhan, Assistant Director, FMP Dte.
25. Lalit Meena, Assistant Director, FM-I
26. Sidhhant Azad, Assistant Director, NP dte.
27. Ramendra Vikram Singh, Assistant Director, NP dte.

Officers from State Government of Madhya Pradesh
S/Shri

1. S N Mishra, ACS, WRD
2. M S Dawar, Engg-in Chief, WRD
3. G P Soni, Chief Engineer, BODHI, WRD
4. C L Garg, Chief Engineer WRD, Shivpuri
5. Shirish Mishra, Chief Engineer WRD
6. O P S Kushwaha, Consultant, WRD

Officers from State Government of Jammu & Kashmir
S/Shri

1. M. Raju, Commissioner/Secretary Jal Shakti Department J & K
2. Raja Yakub Farooq, MD JKPDC J& K
3. Manjit Kotwal, ED JKPDC
4 Hamesh Manchanda, CE RTIC
5 Ajay Gupta, SE RTIC

Officers from State Government of Manipur
S/Shri

1. Takhellambam Ranjit Singh, Commissioner (WR)
2. GurumayumRobindro Sharma, Engineer-in-Chief
3. Rohit Ahanthem, Superintending Engineer
4. Tolerence Saka, Executive Engineer
5. Pradeep Maisnam, Assistant Engineer
6. Rajkumari Nikita , Assistant Surveyor of Works

Officers from State Government of Himachal Pradesh
S/Shri

1. Sushil Justa E in C Project Himachal
2. Suresh Mahajan Chief Engineer PMU
3. Anil Verma , Executive Engineer
4. Parveen, Executive Engineer
5. Sandeep Chaudhry, Executive Engineer
6. Harsh Sharma, Executive Engineer