

Minutes of the combined meeting of the (i) Sub-Committee for Comprehensive Evaluation of various studies / reports available on issues of ILR(6th meeting) and (ii) Sub-Committee for System Studies for identification of most appropriate alternative plan (7th meeting) held on 29.09.2015 at New Delhi.

A combined meeting of the (i) the Sub-Committee for comprehensive evaluation of various studies / reports available on issues of ILR(6th meeting) and (ii) Sub-Committee for system studies for identification of most appropriate alternative plan (7th meeting) held on 29.09.2015 at New Delhi under the Chairmanship of Shri B.N. Navalawala, Chief Advisor, MoWR, RD & GR. The list of participants who attended the meeting is at **Annex-I**.

Shri B.N. Navalawala, Chairman, Sub-Committee for Comprehensive Evaluation (Sub-Committee-I) extended a warm welcome to the participants of the meeting. In his opening remarks he expressed his concern on the progress of works by the Sub-Committees and mentioned that the modus operandi should be interactive and the members should exchange views / ideas with each other to decide on the various issues so that the Committee can work faster to complete the assigned task within the stipulated time.

Item No. 7.1: Confirmation of the Minutes of the combined meeting of the “Sub-Committees for Comprehensive Evaluation of Various Studies/Reports Available on the Issue of ILR” (5th Meeting) and “Sub-Committee for System Studies for identification of most appropriate alternative plan” (6th Meeting) held on 21.08.2015 in New Delhi.

The minutes of the combined meeting of the “Sub-Committees for Comprehensive Evaluation of Various Studies/Reports Available on the Issue of ILR” (5th Meeting) and “Sub-Committee for System Studies for identification of most appropriate alternative plan” (6th Meeting) held on 21.08.2015 had been circulated to all the members vide letter dated 09th September, 2015. As no comments on the minutes were received from any of the members of the Sub-Committees, the minutes of the combined meeting of Sub-Committees, as circulated, were confirmed.

However, some members observed that the minutes as drawn were not reflecting the views expressed as well as the logic or the details of the decisions reached. After discussions, it was decided that in future, minutes will be drawn to reflect the logic and details of the decisions reached

Item No.7.2: Follow up actions on decisions taken during the 6th meeting of the Sub-Committee.

(I) Director (Tech), NWDA informed that the replies of comments of Govt. of Odisha on water balance studies of Mahanadi basin upto Manibhadra dam had been sent to Govt. of Odisha alongwith data requirement for necessary action.

Engineer-in-Chief (Planning) Water Resources Department, Government of Odisha presented the views of Odisha Government on Water balance study of Mahanadi basin upto Manibhadra dam site in the context of Mahanadi – Godavari link. A comparison of surface water balance of Mahanadi basin upto Manibhadra dam site based on 75% dependable yield obtained in the revised water balance study (T.S. No. 175, April, 2013) and using upto date surface water requirement of Odisha was presented. Committee noted the wide variation in: (a) irrigation requirement (b) industrial requirement and (c) environment & ecology requirements. The salient details of the study are as under :

- (i) Odisha Government considered the average delta of 0.82 m and 83% paddy crop in suggested cropping pattern while calculating the irrigation requirement.
- (ii) Industrial requirement projected up to 2050 AD has been worked out by Govt. of Odisha by considering 50% extra over the known requirement up to 2013.
- (iii) Environment flow has been kept as 20% of average monsoon and 30% of average non monsoon flow for which no basis has been indicated by Govt. of Odisha. If these figures are not ad hoc, and have a scientific basis, based on the requirements of the endemic aquatic flora and fauna, this may be supplied.

After detailed deliberations by the Sub-Committee it was decided that :

- (i) Irrigation requirement as per the details that may be provided by State Government (draft IVth Spiral studies) could be taken. The basic data needed for making a correct estimate of irrigation demand namely additional area proposed to be irrigated, cropping pattern for the same, extent of irrigation by ground water and extent of irrigation by existing sources of surface water will be provided by the Odisha Government.
- (ii) Industrial requirement may be considered as per the Odisha Govt. statistics and details will be supplied by them.
- (iii) Pending final decision by the competent authority environment flows for the Mahanadi – Godavari link study may be tentatively estimated as follows:

- a) Prepare a series of natural flows, after correcting observed flows for anthropogenic changes
- b) Find the year with the annual dependability of 75%, and its intra-annual distribution
- c) In the Eastern India, the non-monsoon may be taken as Nov to May. For this period, the environmental flows may be considered as 20% of the natural flows. Similarly, June to October may be considered as the monsoon period and for this, the environmental flows may be taken as 15% of the natural flows.

(II) System simulation studies of Mahanadi – Godavari link

Shri S.K. Jain, Scientist ‘G’ NIH, Roorkee mentioned that the data related to water requirement should be provided to NIH at the earliest to complete the system simulation studies within stipulated time period. Sub-Committee decided that all the relevant data including G&D data, rainfall data, water utilization etc. may be considered upto the year 2012 and NWDA should supply data to NIH after obtaining the same from CWC, IMD, Government of Odisha and Government of Chhattisgrh. NWDA will provide to NIH long term (1900 onwards) measured flow data at all related upstream sites and utilization by major projects to compute virgin flows at Manibhadra. It was decided that the data as available may be used and where ever data is not available, suitable assumption may be made. These assumptions will be clearly brought out, and may be reviewed by the Committee. Regeneration may be considered @30% of the irrigation water supplied. For the study, data for the period 1958-2012 may be used. The studies shall be completed within three months time after the data is provided to NIH. It was also decided that along with surface water, consumptive use from ground water may also be taken into consideration.

For Mahanadi, there is a possibility that the flow series is not stationary. Therefore, it was indicated that the trend analysis of the long period **natural** flows will have to precede other studies. If a step or a change in the averages is seen, the flows may have to be corrected to the more reliable period. If a trend is seen, the possible reasons will have to be discussed. A careful projection of the trend may have to be done, in accordance with the likely persistence of the causes, to obtain the likely future flows going into the simulation. NIH will study the trend of Mahanadi discharge at Manibhadra and give a presentation in the next meeting.

(III) It was informed that water balance studies of Godavari basin were being updated by NWDA and would be completed by November, 2015.

(IV) As per decision taken in the 6th meetings of Sub-Committee a preliminary study on shifting the Mahanadi-Godavari link alignment to western side to connect the link canal

from Barmul dam on Mahanadi river to proposed Inchampalli dam on Godavari river instead of existing Dowlaiswarm barrage has been carried out by NWDA. A presentation in this regard was made during the meeting. Committee noted that the Mahanadi (Barmul) – Godavari (Inchampalli) link proposal involves a continuous tunnel of about 518 km. The tunnels will pass through the ridge between Mahanadi basin and Godavari basin whose elevations vary from 528 m to 1280 m. The link conveyance system involves a lift of about 95 m (including slopes). The annual power requirement for lifting the water is about 3620 MU of energy. No suitable locations for lifting arrangements are available due to existence of forest and hillocks. As the water will be transferred through the tunnel no enroute command area is envisaged. Prima-facie, the above proposal of Mahanadi (Barmul) – Godavari (Inchampalli) link canal is not considered feasible due to very poor B.C. ratio of about 0.1 and huge cost involved in tunneling .

It was decided that the preliminary study may be circulated to all the members of the Sub-Committee through e-mail.

(V) It was informed that the study of possibility of more water utilization in Telangana State through Inchampalli – Nagarjunasagar link would be taken up after receiving the data / information from Telangana State.

Item No. 7.3 Engaging Consultants for carryout the work of the Sub-Committees

It was informed that total 7 consultants (6 at senior level and 1 at junior level) had been selected for the works of Special Committee for ILR, its Sub-Committees and Task Force for ILR. Out of which 5 consultants (4 at senior level and 1 at junior level) have joined their assignments. The selection of 5 consultants (4 at middle level and 1 at junior level) was deferred due to non-availability of suitable candidates. The further action for selection of 5 consultants is being taken by NWDA.

Regarding allocation of work amongst these consultants, it was informed that the work of System studies of Mahanadi – Godavari – Krishna – Pennar – Cauvery – Vaigai – Gundar link; review of affidavits filled by various States before Hon'ble Supreme Court during pendency of writ petition on Networking of Rivers; Review of Water balance studies of Godavari basin; and work of Sub-Committees i.e. preparation of agenda and taking notes for preparation of minutes of various meetings of Special Committee for ILR, various Sub-Committees and Task Force for ILR are assigned to the selected consultants. The Committee members were of the view that the work of preparation of the draft report of the Sub-Committee should be initiated and one consultant should be deputed for this purpose. It was decided to prepare a format for preparation of Report and discuss during next meeting of the Sub-Committee.

Representative of Ministry of Agriculture mentioned that cropping pattern should be based on local crops grown and also the local climatic conditions. Representative of

MoTA mentioned that they were concerned with the displacement of Tribal Community and social impact due to Interlinking of Rivers.

Item No. 7.4: Expansion of Sub-Committee-inclusion of the representatives from other Departments / Ministries

The NWDA has taken-up the matter of inclusion of representatives from various Ministries in the Sub-Committee-I with the Ministry of Water Resources, RD & GR. The details of nomination from MoA, CEA, CWC, NITI Ayog and MoTA have been received and the similar details for nomination from MoF and MoEF & CC are still awaited even after regular persuasion.

Item No.7.5: Any other item with the permission of the Chair

Business in the Next Meeting: In the next meeting, inter alia, the following are expected to be presented:

- a. Mahanadi Simulation-Hydrologic inputs required at least for the main river, along with the analysis of stationarity or trends, by NIH and NWDA
- b. NWDA will present their findings, or interim findings, about the Water Balance of Mahanadi basin
- c. Outlines of the draft final reports of the two sub-committees may be presented by the NWDA. This can be in the form of chapter, section and subsection headings, and small explanatory narratives for each subheading, about what material is expected in these draft reports.

Chairman of the Sub-Committee thanked the participants for fruitful discussions. He suggested that one of the Consultants recently appointed in NWDA should be assigned the work of preparation of agenda, taking the notes of proceedings of the meeting and making the draft minutes of the meeting of the Sub-Committees, and take follow up action on the various decision of the Sub-Committees. The draft minutes may be first circulated to all the members for their observations. The members shall provide their observations within 3-4 days. Considering the observations of the members, the minutes may be modified and submitted to the Chairman for approval. The assigned consultant should immediately start working on preparation of draft report of the Sub-Committee.

Meeting ended with a vote of thanks to the Chair.

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Participants of the combined meeting of the Sub-Committee for (i) Comprehensive Evaluation of various studies / reports available on issue of ILR and (ii) System studies for identification of most appropriate alternative plan held on 29.09.2015 at New Delhi.

I. Sub-committee for Comprehensive Evaluation of various studies / reports available on issues of ILR

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|----|--|-----------|
| 1. | Shri B.N. Navalawala
Chief Advisor, MoWR, RD & GR | Chairman |
| 2. | Shri A.D. Mohile
Former Chairman, CWC | Member |
| 3. | Shri A.C. Tyagi
Secretary General, ICID | Member |
| 4. | Shri S.N. Huddar
Former Secretary (WRD),
Government of Maharashtra | Member |
| 5. | Shri A.D. Bhardwaj
Former DG, NWDA & Former Member, CWC | Member |
| 6. | Shri K.P. Gupta
Superintending Engineer, NWDA | Secretary |

II. Sub-committee for System Studies for identification of most appropriate alternative plan

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| 7. | Prof. Kamta Prasad
Chairman, IRMED, Delhi | Member |
| 8. | Shri Sriram Vadire
Advisor, MoWR, RD & GR | Member |
| 9. | Shri M. Ilangovan
Retd. Chief Engineer, CWC | Member |
| 10. | Dr. Sharad K. Jain
Scientist G, NIH, Roorkee | Member |

11. Shri N.C. Jain
Director (Tech), NWDA

Secretary

Special Invitees

12. Shri R.K. Jain
Chief Engineer (BPMO), CWC

13. Shri Vinay Kumar
Chief Engineer(HSO), CWC

14. Shri Navin Kumar,
Chief Engineer (IMO), CWC

15. Shri Tankadhar Sahu
Engineer-in-Chief
Water Resources Department
Govt. of Odisha, Bhubaneswar

16. Shri Niranjan Panda
Superintending Engineer
Inter State Water Dispute Cell
Water Resources Department,
Govt. of Odisha, New Delhi.

17. Shri Bhajan Lal
Assistant Commissioner (NRM-II)
Ministry of Agriculture, New Delhi

18. Shri Lalasanglur
Economic Adviser
Ministry of Tribal Affairs,
New Delhi

19. Shri Avinash Mishra
Joint Advisor (WR)
NITI Aayog, New Delhi

20. Shri Bibhudatta Panda
Executive Engineer
Intra State Water Dispute Cell,
Water Resources Department,
Govt. of Odisha, New Delhi

Special Invitees, NWDA

21. Shri S. Masood Husain
Director General, NWDA
22. Shri R.K. Jain,
Chief Engineer(HQ), NWDA
23. Shri H.N. Dixit,
Chief Engineer(North), NWDA
24. Shri O.P.S. Kushwah,
Superintending Engineer, NWDA
25. Shri B.L. Sharma,
Superintending Engineer, NWDA
26. Shri M.K. Sinha
Retd. Chief Engineer, CWC,
Senior Level Consultant, NWDA
27. Shri M.S. Agrawal,
Retd. Chairman, Godavari River Management Board,
Senior Level Consultant, NWDA