



राष्ट्रीय जल विकास अभिकरण  
जल शक्ति मंत्रालय, भारत सरकार  
(जल संसाधन, नदी विकास और गंगा संरक्षण विभाग)  
**National Water Development Agency**  
**Ministry of Jal Shakti, Government of India**  
(Department of Water Resources, River Development and Ganga Rejuvenation)



No. SCILR/400/2(ii)/ 2021/1896-1912

Date: 19.04.2021

**Sub: Minutes of the 17<sup>th</sup> Meeting of the "Sub-Committee on System Studies for identification of most appropriate alternative plan", held on 08.04.2021, through Video Conferencing - reg.**

Sir,

The 17<sup>th</sup> Meeting of the "Sub-Committee on System Studies for identification of most appropriate alternative plan" was held on 08.04.2021 at 11.00 hrs. through Video Conferencing, under the chairmanship of Prof. P.B.S.Sarma. A copy of the minutes of the meeting, duly approved by the Chairman, are enclosed for kind information.

Yours faithfully,

Encl.: As above.

  
(Muzaffar Ahmad)  
Director (Technical) &  
Member- Secretary

To

**All the members/ Special Invitees of the Group.**

1. **Prof. P.B.S. Sarma (Retd.)**, CED, IIT Delhi, B2-501, Sunny Valley, Plot No. 27, Dwarka, New Delhi-78. E-mail: pbssarma@yahoo.com, Phone 011-47522501 (R), 09873222125 (M).
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Contd..2/-

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5. **Dr. Sharad K. Jain**, Director (rtd), NIH, Roorkee, E Mail: s\_k\_jain@yahoo.com, 09897018550 (M).
6. **Shri M. K. Sinha**, Assessor, Krishna Water Disputes Tribunal, & (Retd.) Chief Engineer, CWC, Trikot-I, Bhikaji Cama Place, New Delhi - 110066 E-mail: mksinhacwc@gmail.com, mksinhacwc@yahoo.co.in. Phone: 9971686789(M).

**Special Invitees:**

7. **Chief Engineer (South)**, NWDA, Hyderabad, E-mail: cesnwda@rediffmail.com, ceshyd-nwda@nic.in.
8. **Chief Engineer (North)**, NWDA, Lucknow. Email: cenwdalko@rediffmail.com.
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11. **The Director, National Institute of Hydrology (NIH)**, Roorkee - 247667. E-mail : dir.nihr@gov.in, director.nihr@gov.in. **Kind Attn.: Dr.M.K.Goel.**
12. **The Chairman cum Managing Director, WAPCOS Ltd.**, Gurgaon - 122016, Haryana. E-mail : mail@wapcos.co.in. **Kind Attn.: Ms P.Sumana.**
13. **Prof. Pradip Kumar Jain**, Director, National Institute of Technology, Ashok Rajpath, Patna, Bihar - 800005. E-mail : director@nitp.ac.in, pkjain.ece@iitbhu.ac.in. **Kind Attn : Dr. Ramakar Jha**

14. **The Head of Department**, Department of Civil Engineering, Indian Institute of Technology, Guwahati. E- Mail : hodcivil@iitg.ac.in. Prof. **Kind Attn : Prof. Subashisa Dutta**

15. **Prof. N.V.Ramana Rao**, Director, National Institute of Technology, Warangal, Telangana - 506004. Mob. :08702462001, E- mail : director@nitw.ac.in. **Kind Attn : Prof. N.V.Umamahesh**

**Copy for kind information to:**

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**Minutes of the 17<sup>th</sup> meeting of the Sub-Committee on “System Studies for identification of Most Appropriate Alternative Plan” held on 08.04.2021 at 11.00 hrs through Video Conferencing.**

The 17th meeting of the Sub-Committee on “System Studies for identification of Most Appropriate Alternative Plan” was held on 08.04.2021 through video conferencing under the Chairmanship of Prof. P.B.S. Sarma (Retd.). The list of the participants is given at **Annex – I**.

The Prof Sarma, the Chairman of the Sub-committee welcomed all the members of the Sub-committee and other invitees. In his opening remarks, he expressed satisfaction over the progress being made in the system studies work being carried out by NIH, Roorkee for Mahanadi – Godavari link and initiative taken for taking up system studies of four more links viz; Manas–Sankosh–Tista–Ganga link, Farakka–Sunderbans link, Ganga- Damodar-Subernarekha link and Subernarekha-Mahanadi link. Thereafter, he requested Member Secretary of the Sub-committee to take up the agenda items for discussion.

**Item 17.1: Confirmation of the Minutes of 16th Meeting of the Sub-Committee on System Studies for identification of most appropriate alternative Plan held on 17.12.2020**

The Member-Secretary informed that the minutes of the 16th Meeting of the Sub-Committee held on 17.12.2020, were circulated to all the members. No comments on the minutes were received from any of the members. So minutes may be confirmed as circulated.

**Item No. 17.2: Follow up action of the previous meeting.**

a.) **Reconciliation in the parameters of System Studies of Mahanadi-Godavari link being carried out by NIH, Roorkee – The Member-Secretary**

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apprised all the members about the issue related to difference in length of link canal as measured by NIH through digitisation and as given by NWDA. He informed that in the meeting of NIH officials with NWDA held on 29.01.2021, the issue was discussed in details and it was decided that length and other parameters shall be assessed by NIH using relevant toposheets given by NWDA and other requisite information. As intimated by NIH, now the canal length and other parameters are broadly tallying with figures given in the Feasibility Report prepared by NWDA recently.

b.) **Proposal for taking up the system studies of other links:**As decided in the last meeting, the date for seeking EOIs was further extended and requests were also sent to NITs as suggested by the sub-Committee.

**Item No. 17.3: System studies of Mahanadi – Godavari link being carried by NIH, Roorkee**

The Member-Secretary informed that the observations of the sub-committee on the Inception Report were conveyed to NIH and it has revised the Inception Report suitably by incorporating the observations / suggestions of the Sub-committee and resubmitted the Inception report to NWDA on 18.08.2020. On perusal of the revised Inception Report, it is found that most of the observations/suggestions of sub-committee have been incorporated suitably. He further requested Dr.M.K.Goel, Scientist – G, NIH, Roorkee and his team to present the latest status of the study.

Dr. M.K.Goel made a presentation on the latest status of the study, citing the main objectives of the study and main analyses undertaken for the study. He informed that out of 20 command areas, layouts and digitisation of 19 command areas is complete except Rushikulya command area, which is yet to be analysed. The issue of difference in the length of MG canal is resolved and he informed that the final figure of length of MG canal as 845.89 km as measured from their studies and

which is almost same as length mentioned in Feasibility study of NWDA. Then, his team presented other aspects of the studies in detail.

Dr Vishal Singh presented the approach and progress on likely impact of climate change on precipitation and temperature. Dr Surjeet Singh presented the ground water model set up for the study area. Dr P. K. Mishra presented the progress on assessment of crop water requirement and land and water productivity using WA+ model. Dr. M. K. Goel briefed about the system model proposed to be used in the study. He pointed out that the use of MIKE HYDRO system model is more convenient as compared to WEAP21 system model. The outcome of all other model studies shall be linked to the system model.

Dr. R.N. Sankhua, CE (South), NWDA queried about IMD and CHIRPS data and usage of MIKE HYDRO model for the present study. Also, Sh.M.K.Sinha, Assessor, KWDT suggested to keep cropping pattern as a constant parameter to study the impact of other parameters.

Dr. M.K.Goel, apprised the Sub – Committee that the study is progressing well and the Draft Report of the study will be submitted very shortly and study shall be completed as per schedule, by June, 2021.

#### **Item No. 17.4: Proposal for taking up the system studies of other links**

The Member-Secretary informed that Expression of Interest from following five (5) reputed institutes for the proposed system studies for link projects viz., Manas – Sankosh – Tista – Ganga, Farakka – Sunderbans, Ganga – Damodar – Subarnarekha and Subarnarekha – Mahanadi have been received:

1. NIH, Roorkee
2. WAPCOS, Gurgaon
3. NIT, Patna
4. IIT, Guwahati
5. NIT, Warangal.

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As NIH is already doing the system studies for one link already and the members of the Sub-committee are already aware of the approach and methodology being used by NIH and its capacity to carry out such study, accordingly, remaining four agency/institutions were requested to make a brief presentation on their approach and methodology proposed to be used in the system studies of identified links before the Sub-committee.

First Dr. Ramakar Jha, from NIT, Patna made a brief presentation on their proposal. He apprised about input data, models used, available manpower and outcomes of his proposal. He informed that the time period required for the study is 24 months.

DG, NWDA pointed out that NIT, Patna would require engagement of more experts due to limited manpower available in NIT, Patna as presented in their proposal.

Prof. P.B.S.Sarma, the Chairman of the Sub- Committee asked Dr. Jha to submit a requisite manpower data along with manpower planning of each team member, required for the completion of the study as per schedule.

Thereafter, Ms. P.Sumana, Senior General Manager (Hydropower), WAPCOS(I) Ltd. made her presentation highlighting the Approach, methodology, models, softwares, list of experts available in WAPCOS for the study and experience on various projects. Mr. Amitabh Tripathi from WAPCOS also briefed about the study modules in reply to the queries raised by Dr. Sharad K. Jain

Prof. P.B.S.Sarma and Sh.Bhopal Singh opined that their proposal is not adhering to the desired scope of the work. WAPCOS may resubmit their proposal as per the scope of work specified in the system studies of identified links.

Prof. Subashisa Dutta, from IIT, Guwahati made presentation and emphasised that they are familiar with problems in the command areas related to MSTG Link and also due to proximity with the areas, they would prefer to take up study of MSTG

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Link. He briefed about the methodology, data requirements and available expertise in IIT, Guwahati for the work.

The Chairman pointed out that proposal does not cover the approach and methodology proposed to be used in the study. Accordingly, he requested to include the requisite details in the proposal and resubmit the same.

Dr. N.V.Umamahesh from NIT, Warangal made his presentation about manpower availability, objectives of the study, data requirement and their proposal of setting up of System Dynamic model. He told that the time period required by them to complete the study would be approximately 2 years.

After all the presentations, it was concluded that the proposals lacked specificity and these proposals should focus with clarity on approach and methodology to be adopted, domain experts available with them and their time allocation to the project and information about similar system studies being carried out by these institutes.

Dr. Sharad K. Jain suggested to have an evaluation system of technical proposal objectively so as to have transparency and clarity in the evaluation and their short listing for this specialised study.

The attributes and their weightage to be assigned for the evaluation of the technical proposal were deliberated during the meeting. The following attributes and their weightages were proposed:

- |  |                 |
|--|-----------------|
| 1. Approach and Methodology  | 30%             |
| 2. Experience in similar studies carried out by the institute/organisation | 20%             |
| (a) One similar study carried out  | ( 50 %)i.e 10%  |
| (b) Two or more similar studies carried out                                | (100 %)i.e. 20% |
| 3. Key Experts Proposed  | 40%             |
| (a) Team Leader  | (25)            |



- (b) System Model Expert (15)
- (c) Ground Water Modelling Expert (12)
- (d) Hydrologist (12)
- (e) Water Accounting and Irrigation Expert (12)
- (f) Climate Change Expert (12)
- (g) GIS Expert (12)

4. Manpower and Work planning 10%

The Chairman of the Sub-committee opined that members may suggest /convey the views, if any, on the attributes and their weightage as proposed above as soon as possible so that technical proposals may be sought from the institutes/organisations at an early date. DG, NWDA also suggested we may encourage organisation or institute to associate with other organisations/institutes to carry out the study looking at the requirements of experts in various domains, geographical spread of study area etc. Such consortiums with the required multiple specialists will be very useful for these studies. This approach may help not only in carrying the studies efficiently but also in creating expertise in the domain across the country.

The meeting ended with a vote of thanks to the chair.

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**Annex – I**

**List of participants of the 17<sup>th</sup> Meeting of the “Sub-Committee on System Studies for identification of most appropriate alternative plan” held on 08.04.2020 through Video Conferencing.**

<b>S.No.</b>	<b>Name of the Participant</b>	
1.	Prof. P.B.S.Sarma, (Retd.), CED, IIT Delhi, New Delhi	Chairman
2.	Dr. Sharad K. Jain, Former Director, NIH, Roorkee	Member
3.	Sh.M.K.Sinha, Assessor, Krishna Water Dispute Tribunal & Chief Engineer (Retd.), CWC New Delhi	Member
4.	Sh. D.K.Sharma, SE-II, NWDA	Member Secretary
<b>Special Invitees</b>		
1.	Sh. Bhopal Singh, DG, NWDA	
2.	Sh.R.K.Jain, CE(HQ), NWDA	
3.	Dr.R.N.Sankhua, CE(S), NWDA	
4.	Sh. R.K.Kharbanda, SE-I, NWDA	
5.	Sh.M.K.Goel, Scientist - 'G', WRS Division, NIH, Roorkee	
6.	Ms. P.Sumana, Senior General Manager(Hydro power), WAPCOS	
7.	Dr. Ramakar Jha, Department of Civil Engineering,NIT, Patna	
8.	Dr.N.V.Umamahesh, NIT, Warangal	

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9.	Prof. Subashisa Dutta, IIT, Guwahati	
<b>Other officers</b>		
10	Shri Amitabh Tripathi, WAPCOS	
11.	Dr. Pushpendra Kumar	
12.	Shri L. B. Roy	
13.	Shri Nitesh Patidar , Scientist - 'B', WRS Division NIH, Roorkee	
14.	Shri Prabhash Mishra, Scientist - 'C', WRS Division NIH, Roorkee	
15.	Shri Pushpendra Agarwal, Scientist - 'B', WRS Division NIH, Roorkee	
16.	Dr. Radha Krishan, RA, WRS Division, NIH, Roorkee	
17.	Shri Rajib Kumar Bhattachary	
18.	Shri Sunil Kumar Murmu	
19.	Shri Suresh A. Kartha	
20.	Shri Vishal Singh, Scientist - 'C', WRS Division NIH, Roorkee	
21.	Smt Roshni T	
22.	Shri Vivekanand Singh	
23.	Dr. Surjeet Singh, Scientist - 'F', WRS Division NIH, Roorkee	
24.	Shri A. R. Quaff	
25.	Sh.H.K.Pandey, Deputy Director, NWDA.	
26.	Sh.K.K.Rao, Deputy Director, NWDA.	