



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)



SCILR/400/2(ii)/2021/4673-4689

Date : 17.12.21

Sub.: Minutes of the 19th Meeting of the "Sub Committee on System Studies for identification of most appropriate alternative plan", held on 26.11.2021 at 11:15 hrs. through Video Conferencing – reg.

Sir,

The 19th Meeting of the "Sub Committee on System Studies for identification of most appropriate alternative plan" was held on 26.11.2021 at 11:15 hrs. through Video Conferencing under the chairmanship of Prof. P.B.S.Sarma. A copy of minutes of the meeting, duly approved by the Chairman are enclosed for kind information.

It is requested to send your comments, if any, at the earliest, by e-mail to: dirtech-nwda@nic.in.

Yours faithfully,

(D.K.Sharma)

Director (Technical) &
Member Secretary
dirtech-nwda@nic.in

Encl : As above

To

1. Prof. P.B.S.Sarma (Retd.), CED, IIT, Delhi & Chairman of the Sub- Committee, B2-501, Sunny Valley, Plot no. 27, Dwarka, New Delhi-110078. E-mail: pbssarma@yahoo.com, Phone : 011-47522501 (R), Mob.: 09873222125.
2. Prof. Sanjeev Kapoor, IIM, Lucknow, Prabandh nagar, IIM Road, Lucknow-226013. E-mail: sanjeev@iiml.ac.in, Mob.: 09415402466.
3. Dr. S.Mohan, Professor, EWRE 24, Department of Civil Engineering, IIT, Chennai-600036. E-mail: smohan@iitm.ac.in, Phone : 044-22574261 (O), 044-22579296 (R), Mob.: 09837600444.

Contd./-

4. Prof. Kamta Prasad, Chairman, IRMED, 2-B, Institutional Area, Karkardooma, Delhi-110092. E-mail: irmed7@gmail.com, Phone:011-22377199(O), 011-22374975 (R), Mob.: 09810288036.
5. Dr. Sharad K. Jain, Retired Director, NIH, Roorkee. E-mail: s_k_jain@yahoo.com, Mob.: 09897018550.
6. Sh. M.K.Sinha, Assessor, Krishna Water Disputes Tribunal and Retd. Chief Engineer, CWC, Bhikaji Cama Place, New Delhi-110066. E-mail: mksinhacwc@gmail.com, mksinhacwc@yahoo.co.in, Mob.: 09971686789.

Special Invitees:

7. Chief Engineer (North), NWDA, Lucknow. E-mail : cenwdalko@rediffmail.com.
8. Chief Engineer (South), NWDA, Hyderabad. E-mail : ceshyd-nwda@nic.in, cesnwda@rediffmail.com.
9. Superintending Engineer-N, NWDA, Palika Bhawan, New Delhi. E-mail: se3nwda@rediffmail.com, se3nwda@gmail.com. **It is requested to convey the discrepancies in the Draft Final Report to NIH, Roorkee and provide the duly corrected Draft Final Report (Hard copies) to the members of the Sub-Committee and to CWC and CGWB, at the earliest.**
10. Superintending Engineer-S, NWDA, Palika Bhawan, New Delhi. E-mail: se1nwda@rediffmail.com.
11. Director, National Institute of Hydrology (NIH), Roorkee-247667. E-mail: dir.nihr@gov.in. Kind Attn.: Dr. M.K.Goel, E-mail: goel.mk1@gmail.com. Mob.:09410393347
12. Director, National Institute of Technology (NIT), Ashok Rajpath, Patna, Bihar – 800005. E-mail: director@nitp.ac.in. Kind Attn.: Dr. Ramakar Jha, rjha43@gmail.com, Mob. : 08544401806.
13. The Head of Department, Department of Civil Engineering, IIT, Guwahati. E-mail : hodcivil@iitg.ac.in. Kind Attn.: Prof. Subashisa Dutta, E-mail: subashisa@iitg.ac.in. Phone : 0361- 2582415 (O), Mob.: 09435104598
14. Prof. N.V.Ramana Rao, Director, NIT, Warangal, Telangana-506004. E-mail : director@nitw.ac.in. Kind Attn.: Prof. N.V.UmaMahesh, E-mail : mahesh@nitw.ac.in, uvnanduri@gmail.com. Mob.: 09849730834.
15. Superintending Engineer, NWDA, IC, Bhubaneswar. **It is requested to provide Feasibility Reports (Soft /Hard copies) of the four link projects to the respective Institutes for their reference.**

Copy for kind information to :

1. SPS to DG, NWDA, Palika Bhawan, New Delhi. E-mail: dg-nwda@nic.in.
2. CE(HQ), NWDA, Palika Bhawan, New Delhi. E- mail : cchq-nwda@nic.in.

Minutes of the 19th meeting of the Sub-Committee on “System Studies for identification of Most Appropriate Alternative Plan” held on 26.11.2021 at 11.15 hrs through Video Conferencing.

The 19th meeting of the Sub-Committee on “System Studies for identification of Most Appropriate Alternative Plan” was held on 26.11.2021 through video conferencing under the Chairmanship of Prof. P.B.S.Sarma. The list of the participants is given at **Annexure – I.**

Prof. P.B.S.Sarma, the Chairman of the Sub-committee welcomed all the members of the Sub-committee and other invitees. He apprised all the members about substantial progress made in the work related to System Studies of the Mahanadi-Godavari link project by NIH, Roorkee and briefed about the four Institutes which have been involved in the system studies of four additional links.

Thereafter, DG, NWDA extended a hearty welcome to the Chairman of the Sub Committee and all other participants. He informed the participants that NIH, Roorkee has submitted the Draft Final Report on System Studies of Mahanadi-Godavari link to NWDA in October, 2021. Then, he requested Shri D.K.Sharma, Director (Tech), NWDA & Member Secretary of the Sub-committee for taking up the Agenda items.

Item 19.1: Confirmation of the Minutes of 18th Meeting of the Sub-Committee on System Studies for identification of most appropriate alternative Plan held on 25.08.2021

The Member-Secretary informed that the minutes of the 18th Meeting of the Sub-Committee held on 25.8.21, were circulated to all the members. Comments on the minutes were received from Prof. Kamta Prasad, Chairman, IRMED and Dr.M.K.Goel, NIH, Roorkee. Prof. Kamta Prasad has requested to include his observations in the minutes of the meeting and consider them for modifying the study. Member Secretary briefed about

these observations / viewpoints which include providing adequate justification for adopting a particular cropping pattern in the study and to consider the water needed for increasing urbanization and cattle population, effect of increasing volume of waste water in urban areas on ground water recharge, environmental requirement of water and data in support of assuming irrigation efficiency of 64% and 56% in the present study. Prof. Kamta Prasad also personally presented these views during the meeting.

Dr. M.K.Goel, NIH, Roorkee replied that they have already received these observations / suggestions of Prof. Kamta Prasad and have tried to suitably consider the same.

Item No. 19.2: Follow up action of the previous meeting : The Member-Secretary apprised all the members about submission of Draft Final Report on System Studies of Mahanadi-Godavari link by NIH, Roorkee and Proposals of four Institutes for taking up the system studies of other links.

Item no. 19.3 : System studies of Mahanadi – Godavari link being carried out by NIH, Roorkee : Member Secretary explained the status of progress of System studies of Mahanadi – Godavari link and informed that the Draft Final Report of the study was submitted in October, 2021 by NIH, Roorkee.

Dr. M.K.Goel, informed that they have already given a detailed presentation on their study in previous meeting of the Sub Committee as well as in 14th meeting of TFILR. Members of the Sub Committee may deliberate / give suggestions on the same.

DG, NWDA emphasised that for system studies, NWDA needs a model which includes all the components including inflows / water availability at various locations, reservoirs and barrages and provides a complete framework for system study which can be used for other links also and not limited to the study of Mahanadi - Godavari link project as most of the links are integrated. He also informed that NWDA has been entrusted with the preparation of DPRs of the link projects and the system studies would help us to analyse various scenarios that may emerge in future in respect of other link projects.

Prof. Kamta Prasad highlighted the fact that the Draft Final Report submitted by NIH, Roorkee needs to be analysed properly for which time of few weeks is required and also suggested to get it scrutinised in more depth, by few experts on payment basis, in addition to its scrutiny by NWDA and Sub Committee members.

Dr. Sharad K. Jain commented that there should be a clear and defined pathway for these studies to proceed and how the reports will be suitably used. The Reports submitted should clearly give an outcome of the studies conducted so that these Reports can be used effectively and do not merely become a showpiece document.

Prof. P.B.S.Sarma ,Chairman of the Sub Committee stated that there is no need to appoint any Expert from outside for examination of the Report as Sub Committee itself is a group of eminent Experts, We can take some time to thoroughly examine the Report and convey our observations / suggestions which can be suitably incorporated in the Final Report. The DG, NWDA mentioned that we may request CWC to give their views on the water resource assessment part and likewise request CGWB to give their views on the Groundwater resources part.

Thereafter, Chairman of the Committee requested Dr. M.K.Goel to clarify certain observations he has made in the Draft Final Report. He mainly referred to the "Conclusion" Section of the Report and mentioned with clarity, page wise and paragraph wise detailed observations for which he sought the clarifications from NIH, Roorkee. Dr. M. K. Goel took note of modifications/ corrections suggested by him.

Dr. Sharad K.Jain indicated the use of Rice Productivity Models and Wheat Productivity models and suggested to send the part of the Report related to Agricultural aspect to ICAR, if possible, for their observations / suggestions. He also suggested to retain CMIP 6 portion of analysis only. In this connection, the Chairman suggested that Prof. P.K. Agarwal, former Professor of ICAR, may be consulted for his views.Dr.M.K.Goel clarified that they have taken both the scenarios (normal and extreme) using CMIP 5 and CMIP 6 for next 50 years. Dr. Sharad K. Jain also enquired about the significant recharges mentioned in the Ground Water Aquifers as the canal is lined.

Prof. L. B. Roy, NIT, Patna mentioned about the maintenance aspects of lined canal.

Sh. M .K. Sinha pointed out that Report should not mention about anticipated water logging and also briefed about agricultural productivity aspects considered in the Report.

Prof. Kamta Prasad emphasised to make assessment in holistic view and not in a restricted view. He suggested that cropping patterns need to be studied properly.

Thereafter, DG, NWDA conveyed his viewpoints on the Draft Final Report as given below:

- i) NWDA team has examined the Report and has noticed some discrepancies in facts and figures with respect to our Feasibility Report, that will be conveyed to NIH, Roorkee for carrying out rectifications. (**Action: SE(N), NWDA**).
- ii) Reservoir module has not been included in the present model and the System Model should include all the components of the system so that the model can be replicated / used for other link projects also.
- iii) It is suggested that Chapter 5 and Chapter 8 shall be submitted to CGWB for their comments, Chapter 6 will be examined by NWDA itself and for Chapter numbers 4 and 9, opinion of CWC may be sought. (**Action : SE(N), NWDA**)
- iv) He requested NIH, Roorkee to submit a training plan so that a team of NWDA officials can be trained properly to run the system study model.
- v) He requested Sub Committee members to provide their views for accepting the Draft Final Report and sought their permission to release the balance payments.

Dr. M.K. Goel, NIH, Roorkee replied that NIH, Roorkee would plan for training programme of one week duration for NWDA officials and would submit the training schedule shortly. Also, he requested to send whole Report to CGWB and CWC instead of sending only identified portions / chapters. He assured that the rectifications suggested by

NWDA would be carried out in one week's time after the receipt of the suggested corrections from NWDA.

Dr. Sharad K.Jain suggested to circulate the Draft Final Report in **hard copy** to the members of the Sub Committee only after the corrections suggested by NWDA are duly incorporated by NIH, Roorkee.

Item No. 19.4: Proposal for taking up the system studies of other links:

The Member-Secretary informed that the work related to system studies of four more links has been allotted to the four Institutes as decided in the 18th meeting of the Sub Committee i.e. system studies of M-S-T-G link to IIT, Guwahati, G-D-S link study to NIT, Patna, system study of Subernarekha-Mahanadi to NIT, Warangal and Farakka-Sunderbans to NIH, Roorkee. He gave a brief about the proposals received from the four Institutes, including their time schedule and estimates

S.No.	Name of the Link Project	Name of the Institute
1.	Manas- Sankosh-Tista-Ganga link	IIT, Guwahati
2.	Ganga-Damodar- Subernarekha link	NIT, Patna
3.	Subernarekha- Mahanadi link	NIT, Warangal
4.	Farakka- Sunderbans link project	NIH, Roorkee

Thereafter, Chairman of the Committee requested the representatives of the four Institutes to start with the work of data collection and data compilation for the system studies of links allotted to them. He suggested that these Institutes can seek help of NWDA to get information available with NWDA and required by them for initiating the studies. The representatives of the Institutes conveyed that they would commence the work shortly

and requested DG, NWDA to provide the hard copies / soft copies of Feasibility Reports of the respective links. **(Action : Superintending Engineer, IC, NWDA, BBSR)**

The Chairman, concluded the meeting and summarised the discussions as mentioned below:

1. NWDA has to send the hard copies of the duly corrected Draft Final Report to all the members of the Committee and also to CGWB and CWC for getting their views. A copy may also be sent to Prof. P.K. Agarwal of ICAR and request him for his views on Climate change analysis and agriculture aspects. **(Action : Superintending Engineer (N), NWDA)**
2. The next meeting of the Sub Committee may be planned after a period of 4 to 5 weeks after receiving of the hard copies of the duly corrected Draft Final Report by the members of the Sub Committee, so that members can get sufficient time to examine the Report thoroughly. **(Action : Superintending Engineer (N), NWDA)**
3. He requested Dr. M. K. Goel to link the Reservoir Operation Module developed by NIH to the System study model.
4. NWDA has to scrutinise the financial proposals and these proposals will be discussed and reviewed by members of the Sub Committee only.
5. NWDA may share copies of the Feasibility Reports of the four links with the respective Institutes. **(Action : Superintending Engineer, IC, NWDA, BBSR)**

In his closing remarks, he appreciated the efforts of NIH, Roorkee and requested other Institutes to commence the work as early as possible. He expressed his hope that the final Report submitted by NIH, Roorkee would be very beneficial for the system studies of other link projects.

The meeting ended with a vote of thanks to the Chair and all the participants by DG, NWDA, for their fruitful guidance and deliberations.

Annexure – I

List of participants of the 19th Meeting of the “Sub-Committee on System Studies for identification of most appropriate alternative plan” held on 26.11.2021 through Video Conferencing.

S.No.	Name of the Participant
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.	Prof. Kamta Prasad, Chairman, IRMED. Member
5.	Sh. D.K.Sharma, Director (Technical), NWDA Member Secretary
	Special Invitees
6.	Sh. Bhopal Singh, DG, NWDA
7.	Dr.R.N.Sankhua, CE(S), NWDA
8.	Sh. Shiva Kant Pandey, CE(N), NWDA
9.	Sh. S.C.Awasthi, Superintending Engineer- N, NWDA
10.	Sh.S.R.Mahor, Superintending Engineer- S, NWDA

11.	Dr. M.K.Goel, Scientist - 'G', WRS Division, NIH, Roorkee
12.	Prof. L.B.Roy, Department of Civil Engineering, NIT, Patna
13.	Dr.N.V.Umamahesh, NIT, Warangal
14.	Prof. Subashisa Dutta, IIT, Guwahati
Other Officers	
15.	Prof. Rajeev Bhattacharya, IIT, Guwahati
16.	Ms Deepika, DD(H), NWDA
17.	Sh.K.K.Rao, AD, NWDA
18.	Sh. Hari Om Varshney, AE, NWDA
19.	Sh. Nikhil V. J. JE, NWDA.