



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)/2022/4301-4316

Date : 15.09.2022

Sub.: Minutes of the 21st Meeting of the “Sub Committee on System Studies for identification of most appropriate alternative plan”, held on 30.8.2022 at 10:30 A.M. through Video Conferencing – reg.

Sir,

The 21st Meeting of the “Sub Committee on System Studies for identification of most appropriate alternative plan” was held on 30.8.2022 at 10:30 A.M. 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,

Encl : As above

(D.K.Sharma)

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

To

1. Prof. P.B.S.Sarma (Retd.), Project Director, WTC, IARI, New Delhi & Chairman of the Sub- Committee, B-2905, Golf Edge, Residence Street no. 2, Financial District, Gachi Bowli, Hyderabad-500003. E-mail: pbssarma@yahoo.com, 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.

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, 254, APR Pranav Antillia, Bachupally road, Hyderabad. E-mail: mksinhacwc@gmail.com, mksinhacwc@yahoo.co.in, Mob.: 09971686789.

Special Invitees:

7. 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.
8. Chief Engineer (North), NWDA, Lucknow. E-mail : cenwdalko@rediffmail.com.
9. Chief Engineer (South), NWDA, Hyderabad. E-mail : ceshyd-nwda@nic.in, cesnwda@rediffmail.com.
10. Superintending Engineer-N, NWDA, Palika Bhawan, New Delhi. E-mail: se3nwda@rediffmail.com, se3nwda@gmail.com
11. Superintending Engineer-S, NWDA, Palika Bhawan, New Delhi. E-mail: se1nwda@rediffmail.com.
12. Superintending Engineer, IC, NWDA, BBSR. E-mail: sebbsr-nwda@nic.in.
13. Superintending Engineer, IC, NWDA, Patna. E-mail: sepat-nwda@nic.in
14. Dir (MDU), NWDA, New Delhi for necessary action regarding uploading of minutes in the website.

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 : cehq-nwda@nic.in.

Minutes of the 21st Meeting of the “Sub Committee on System Studies for identification of most appropriate alternative plan”, held on 30.8.22 at 10:30 A.M. through Video Conferencing

The 21st meeting of the Sub-Committee on “System Studies for identification of Most Appropriate Alternative Plan” was held on 30.8.2022 through video conferencing under the Chairmanship of Prof. P.B.S.Sarma. The list of the participants is given at **Annexure – I.**

At the outset of the meeting, Prof. P.B.S.Sarma, the Chairman of the Sub-committee welcomed all the members of the Sub-Committee and other invitees. He appreciated the progress made in work related to awarding of system studies works for the four links i.e. Manas-Sankosh-Tista-Ganga link project, Ganga-Damodar-Subernarekha link, Subernarekha-Mahanadi and Farraka - Sunderbans link project and inviting EoIs for Godavari – Krishna – Pennar – Cauvery – Gundar – Vaigai links system. He, then, requested Director General, NWDA for his remarks.

Thereafter, DG, NWDA extended a hearty welcome to the Chairman of the Sub Committee and all other participants. DG, NWDA thanked Chairman and all the members for their guidance in achieving the targeted progress to a large extent. He apprised all the members that the present meeting is very important as report of NIH, Roorkee on system studies for Mahanadi-Godavari link is in finalisation stage and members are requested to deliberate on how to expedite the system studies work of four links that has been awarded to four Institutes. He put forward his key observation that as NWDA is in process of developing a basic framework for system studies so all the components of system studies should be covered in template / basic model so that it can be referred for all other links. Then, he requested Shri D.K.Sharma, Director (Tech), NWDA & Member Secretary of the Sub-Committee for taking up the Agenda items.

Item No. 21.1: Confirmation of the Minutes of 20th Meeting of the Sub-Committee on System Studies for identification of most appropriate alternative Plan held on 26.3.2022.

The Member-Secretary informed that the minutes of the 20th Meeting of the Sub-Committee held on 26.3.22, were circulated to all the members.

Comments of Sh. M. K. Sinha were received on Draft Report of NIH Roorkee and the same were sent to NIH, Roorkee for which replies have been conveyed by NIH, Roorkee to Sh. M. K. Sinha and will be discussed in the present meeting.

Sub-committee confirmed the minutes as circulated.

Item No. 21.2 and 21.3: Follow up Action of the previous meeting related to System studies of four links.

The Member-Secretary apprised all the members that proposals received from the four Institutes i.e. IIT, Guwahati, NIT, Patna, NIT, Warangal and NIH, Roorkee for taking up the work of system studies of four links viz; Manas-Sankosh-Tista-Ganga link project, Ganga-Damodar-Subernarekha link, Subernarekha-Mahanadi and Farraka - Sunderbans link project have been scrutinised and work has been awarded to the four Institutes as follows : 1. Manas-Sankosh-Tista-Ganga link project – IIT, Guwahati, 2. Ganga-Damodar-Subernarekha link – NIT, Patna, 3. Subernarekha-Mahanadi link project – NIT, Warangal, and 4. Farraka - Sunderbans link project – NIH, Roorkee. MoUs with NIT, Patna and NIT, Warangal have been signed and MoUs with other two Institutes will be signed shortly.

Item No. 21.4: System Studies of Mahanadi-Godavari link being carried out by NIH, Roorkee.

Member Secretary informed that as decided in the 19th meeting of the Sub Committee, copies of Draft Final Report submitted by NIH, Roorkee was sent to all the members of the Sub-Committee, CWC, CGWB and to Prof. P. K. Agrawal, Vice

Chancellor of Odisha University of Agriculture and Technology for obtaining their views. The comments were received from Chairman of Sub Committee, Prof. Kamta Prasad and Sh. M. K. Sinha, Members of the Sub Committee, CWC, CGWB and Superintending Engineer, IC, NWDA, Bhubaneswar and same were sent to NIH, Roorkee for suitable and feasible compliance / incorporation.

Thereafter, Prof. Kamta Prasad presented his comments and emphasised on the need of adopting a multi disciplinary approach in Water Resources' Studies. He put forward his queries related to cropping pattern, irrigation efficiency, irrigation intensity, rate of population growth etc. used in Report and suggested that the Report should be more realistic with more of field data incorporated in its various sections as it has to reach to public domain and thus, the Report should be complete in all aspects.

Chairman thanked Prof. Kamta Prasad for his elaborate comments and guidance.

Member Secretary then requested Dr. M. K. Goel, NIH, Roorkee to briefly explain about the incorporation of the comments and submission of the Final Report.

Dr. M. K. Goel thanked Chairman and Members for their comments and specifically mentioned that the comments of Chairman are very encouraging. He presented views of NIH, Roorkee on each and every comment received from Members and Experts, on the Report and suitable incorporation of those comments in the same.

He informed that all the editorial comments related to typographical errors, title change, nomenclatures, graphs' modifications etc. have been incorporated. He explained that crop water requirements for various crops during Kharif and Rabi seasons and for perennial crops have been estimated in great detail at 10-daily time step in different commands separately in the study and they have checked the existing cropping pattern estimates in different commands from NRSC assessments from latest available data rather than relying solely on the NWDA assessments. For growth rate of population, livestock etc. they have adopted the recommended practices, which are followed by NIH, Roorkee in many studies. The system study of M-G Link is based on guidelines of TAC as provided

by NWDA. Regarding canal and seepage losses, he informed that the main canal is considered to be lined while the branch canals are considered to be unlined. Accordingly, different seepage rates from the main and branch canals have been considered as per GEC – 2015 norms. Regarding irrigation intensity of 200%, he apprised all the participants that this was a hypothetical / additional scenario considered and studied by NIH so that additional study is mentioned in Report.

Sh. M. K. Sinha stated that most of his comments have been satisfactorily replied by NIH, Roorkee but regarding issue related to irrigation efficiency, he suggested to consult IMO, CWC for having expert views. He also suggested to mention in DPR about increase in section of canal, if required.

DG, NWDA agreed to the suggestion to conduct a meeting with CWC to sort out the issues on irrigation related aspects of the study. **(Action : SE(North))**

Dr. Sharad K. Jain queried about end use of system studies and also opined that implementation of the link projects needs to be expedited so that outcomes of system studies can be used effectively. DG, NWDA explained that these studies will be very useful for taking proper decisions in finalising DPRs of link projects as they provide a flexible view with alternatives studied.

Chairman, thereafter, concluded the Agenda item and mentioned that Report is accepted and suggested NIH, Roorkee to review the comments and incorporate the comments as per feasibility and also add a paragraph on limitations and references, for all “common practices” wherever they appear in the report and finalise the Report.

Dr. M. K. Goel requested NWDA to provide additional data, specifically for comments / suggested revisions by Prof. Kamta Prasad for carrying out modifications in the Report so that they can finally revise and freeze the study. Thereafter, they will add a chapter on Executive Summary and submit the Final Report shortly. **(Action : SE, IC, BBSR & SE (North))**

Item no. 21.5 : System studies of Godavari – Krishna – Pennar – Cauvery – Gundar – Vaigai links system

Member Secretary briefed that it was decided during the 15th meeting of this Sub-Committee, to take up system studies of Godavari – Krishna – Pennar – Cauvery – Vaigai – Gundar links as second phase through institutions/premier agencies working in the field of water resources. Accordingly, scope of work and Terms of Reference were sent to some premier Institutes by Office of CE(S), NWDA and five Expressions of Interest (EoIs) have been received from the following :

1. Department of Water Resources Development and Management, IIT-Roorkee
2. Department of Hydrology, IIT-Roorkee
3. Department of Civil Engineering, IIT-Delhi (2 Proposals)
4. Department of Civil Engineering, IIT-Madras

He then requested Chief Engineer (S), NWDA to explain the details of scope of work and proposals received.

CE(S), NWDA gave a brief presentation in which he explained the nine link system with length of canals and envisaged diversion of water. He briefed about the five proposals received and suggested that time schedule for the work can be three years for each study and cost should be restricted to one crore inclusive of GST.

Thereafter, Chairman gave his views on the five proposals (EoIs) and pointed out that proposals of IIT, Delhi are not sound or acceptable. Proposal from Dr. Keshari, IIT, Delhi mentions about involving a private consultant for getting most of the work done, which is not desirable and second proposal from IIT, Delhi is unsigned and also suggested to collaborate with some private agency besides lacking technical details. Proposal of Department of Water Resources Development and Management, IIT, Roorkee is also incomplete without any technical details. Only two proposals as received from Department

of Hydrology, IIT, Roorkee and Department of Civil Engineering, IIT, Madras are worth considering.

DG, NWDA opined that it would be better to search for more Institutes for taking up this system study work of Godavari – Krishna – Pennar – Cauvery – Gundar – Vaigai links system in 4 to 6 weeks' time, as the area of study involved in the 8 links under this system is very vast so it may not be possible for two Institutes to deliver the results in prescribed time schedule. Also, he requested CE(S), NWDA to seek detailed technical and financial proposals from these two Institutes as well as other Institutes so that next meeting can be conducted exclusively for finalising the Institutes for taking up the system study work of these 8 link projects.

Chairman, Sub-Committee agreed and suggested that Links from Godavari to Krishna can be given to one Institute and from Krishna to Pennar to the second Institute and for further links from Pennar to Gundar, another Institute can be searched, thereby the study time can be limited to 18 months only.

CE (S), NWDA opined that Institutes from South will be more helpful because link system is in South India so geographical location of the Institutes would be nearer to the study area, data collection would be easier and local Institutes would have more knowledge of study area and other factors like language constraints etc. would not hinder the study work.

Thereafter, Chairman, Sub- Committee concluded the meeting. He appreciated the efforts of NIH, Roorkee for system study work of Mahanadi-Godavari link and suggested NIH, Roorkee to finalise the Report as discussed. He requested Chief Engineer (S), NWDA to seek proposals from other Institutes in one month's time and also to obtain detailed proposals from the shortlisted two Institutes as well as other Institutes for system study work of Godavari – Krishna – Pennar – Cauvery – Vaigai – Gundar links system.

In his closing remarks, DG, NWDA requested NIH, Roorkee to plan for Training module for system studies model and also to develop a 2 to 3 pages' pamphlet about outcome of the present system study and information / framework of an integrated model covering all components of a system study work.

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 21st Meeting of the “Sub-Committee on System Studies for identification of most appropriate alternative plan” held on 30.8.22 through Video Conferencing.

S.No.	Name of the Participant
1.	Prof. P.B.S. Sarma, (Retd.), Project Director, WTC, IARI, New Delhi, Chairman
2.	Prof. Kamta Prasad Chairman, IRMED Member
3.	Dr. Sharad K. Jain, Former Director, NIH, Roorkee, Member
4.	Sh. M.K. Sinha Retd. Assessor, Krishna Water Disputes Tribunal Member
5.	Sh. D.K. Sharma, Director (Technical), NWDA Member Secretary
	Special Invitees
6.	Sh. Bhopal Singh, DG, NWDA
7.	Dr. Jaivir Tyagi, Director, NIH, Roorkee
8.	Dr. R.N. Sankhua, CE (S), NWDA
9.	Sh. Baleshwar Thakur, CE(HQ), NWDA
10.	Sh. Shiva Prakash, CE (N), NWDA
11.	Sh. S.C. Awasthi, Superintending Engineer- N, NWDA

12.	Sh. S.R. Mahor, Superintending Engineer- S, NWDA
13.	Sh.R.K.Gupta, SE, NWDA, IC, BBSR
14.	Dr. M.K.Goel, Scientist "G", NIH, Roorkee
Other Officers	
15.	Sh. R. Chandrasekharan, DD, SE-S Unit, NWDA
16.	Ms Deepika, DD (H), NWDA
17.	Sh. Nikhil V. J. JE, NWDA
18.	Sh. Subodh Kumar JE, NWDA