

Minutes of the 2nd Meeting of the “Sub Committee for Comprehensive Evaluation and System Studies on Interlinking of Rivers” held on 30.6.2023 at NIH, Roorkee.

The 2nd Meeting of the “Sub Committee for Comprehensive Evaluation and System Studies on Interlinking of Rivers” was held on 30.6.2023 at NIH, Roorkee in hybrid mode, under the Chairmanship of Sh. A.B.Pandya. The list of the participants is given at Annexure – I.

At the outset of the meeting, Sh.A.B.Pandya, Chairman of the Sub-committee welcomed all the members of the Sub-Committee and other invitees. He emphasised that this meeting has been scheduled at NIH, Roorkee with an aim to have detailed discussions with whole team of NIH, Roorkee involved in finalisation of system studies being carried out by them for Mahanadi- Godavari link project.

Prof. Kamta Prasad mentioned that Terms of References of the merged Sub-Committee seem to be very critical and need to be discussed in details so as to have a clarity about inputs required from the members of the Sub Committee, as well as assistance / Technical Support needed by Sub Committee for various reports which need to be studied by the Sub-Committee. He also suggested to take into consideration the socio-economic aspects while undertaking comprehensive system studies of link projects. He has provided detailed explanation of the points raised. The same are enclosed at Annexure II and are considered as part of the minutes. Sh. A.C. Tyagi also suggested to consider socio-economic aspects in planning process.

DG, NWDA explained that merged Sub-Committee is constituted for Comprehensive evaluation and system studies of Interlinking of Rivers (ILR) Projects and evaluation part would have major role at the time of implementation of link projects. Presently, we need to focus on system studies of link projects as 18 to 20 Detailed Project Reports (DPRs) of the link projects shall be completed by year, 2025. There is a need to develop a Decision Support System model for long distance inter basin water transfer.

Chairman, Sub-Committee mentioned that focus of Sub-Committee is identification of availability and feasibility of water resources and to examine all the possible alternatives for optimising the benefits from the available water resources. While the issues of Scio-economic aspects are important, the same can be assessed once the basic framework of the link proposal in resource availability and distribution terms is finalized. The studies being conducted now are going to form part of a future DPR but are not supposed to be a document at the level of DPR where the issues of socio economic impact will also have to be specifically examined. It was suggested to have a separate meeting for discussing the ToRs of the Sub Committee.

Thereafter, Chairman, Sub-Committee requested Member Secretary to take up the agenda items.

Chief Engineer (HQ), NWDA & Member Secretary of the Sub-Committee welcomed Chairman of the Sub-Committee and all the participants and took up the agenda items for discussions:

Item No. 2.1: Confirmation of the Minutes of 1st meeting of the Sub-Committee held on 20.1.23.

Chief Engineer (HQ), NWDA & Member Secretary of the Sub-Committee apprised all the members that minutes of the first meeting were circulated and comments from NIH, Roorkee have been received on 28.06.23 in response to the observations of Prof. Kamta Prasad as mentioned in the minutes of the 1st meeting of the Sub-Committee. It has been clarified by NIH, Roorkee that comments of all the members on the Draft Final Report submitted by them were taken up and explained by Dr. M.K. Goel up to the satisfaction of members, during the 1st first meeting of the Sub-Committee. Comments of Prof. Kamta Prasad have been further taken up during finalization of Report.

The same was agreed by the members of the sub-Committee and Minutes of the 1st meetings of the sub-Committee were confirmed subject to the incorporation of the comments of NIH, Roorkee.

Item No. 2.2: Follow up Action of the previous meeting

As decided in the 1st meeting that Members of the Sub Committee shall be apprised of status of works done by Sub-Committee - I (Comprehensive Evaluation of Various Studies/Reports available on the issue of ILR) and Sub-Committee-II (System Studies for identification of most appropriate alternative plan) as per their Terms of References, Member Secretary explained about important decisions taken during the meetings of these two Sub Committees and status of works done by them, in their tenures.

After review of the status of work done by the Sub-Committee-I, Chairman of the subcommittee opined to take up the left-over work of finalisation of the draft report on comprehensive evaluation of various studies/ reports on issues of ILR also in due course of time.

Item no. 2.3: Revised composition of the merged Sub Committee

Member Secretary informed all the members about inclusion of Prof. P. P. Majumdar as per revised composition of the merged Sub Committee due to resignation of Prof. P B S Sarma from the membership of the merged Sub Committee. He welcomed Prof. P. P. Majumdar as new Member / Vice-Chairman of the Sub-Committee.

Item no. 2.4 : System Studies of Mahanadi-Godavari link being carried out by NIH, Roorkee

Member Secretary explained the sequential progress of work related to system studies of Mahanadi-Godavari link being carried out by NIH, Roorkee and submission of Final Report by them in May, 2023.

Prof. P. P. Majumdar opined that there is a need to look at complete picture of a basin and if possible, simulation studies for a basin as whole should also be undertaken.

Sh. M.K.Sinha opined to emphasise on climate change aspects also in system studies for link projects.

Chairman, Sub-Committee explained that finalisation of system study model of Mahanadi-Godavari link is the first step and once the basic model is finalised then other aspects as suggested by members of the Sub Committee, can be superimposed on basic model.

DG, NWDA mentioned that taking up of basin simulation study shall also be explored in future.

Thereafter, Dr.M.K.Goel, NIH, Roorkee made a detailed presentation about the objectives of the study, study area, database development, development of systems model, its calibration and validation, various scenarios considered during study, cropping pattern etc. along with outcomes of the study as finalized in the Report.

Dr.N.K.Goel appreciated the efforts of NIH, Roorkee and suggested to study operational aspects of the model by a team of scientists.

Prof. P. P. Majumdar complimented the comprehensive study done by NIH, Roorkee. He mentioned that a frame work has been generated and it can be used for study of other link projects. Basic picture of this study can be used for basin simulation studies. Prof Majumdar also suggested that the climate change effects will also be required to be considered for the source basin yield in addition to the effects on consumptive patterns in the beneficiary area. Since at this stage, the demands in the en-route areas are the focus of the study and the supplementation required from Mahanadi basin and also MSTG link will be finalized later, the aspect may be kept in mind at that stage.

Prof. Kamta Prasad thanked NIH, Roorkee for modifying the Report by taking positive approach for his suggestions. He further suggested to explain the contents on cropping pattern, additional crop area from water resources other than MG Canal, population growth rate and assumptions taken for estimation of industrial demand, irrigation efficiency etc. as considered in the Report.

Sh. A.C. Tyagi suggested to prepare an infographic version for outcomes of the study for better understanding by stakeholders. A rider or note can be included in the Report about the limitations and assumptions taken in the study, before the Report is presented in public domain.

Chairman of the Sub-Committee appreciated the efforts of NIH, Roorkee. He explained that further extensive study can be undertaken at stage of preparation of DPR and more parameters can be added for study in the present model. At this point of time, change of database is not recommended and report submitted by NIH Roorkee on "System Studies on Mahanadi-Godavari Link" may be accepted and the limitations and assumptions be clearly mentioned in the preface as suggested by the Members of the Sub-Committee. Also the outcome of the study is final and shall be further optimised based on further input and

preference of States for utilisation of water resources. Since the study will be evaluated and critically examined by various stakeholder groups at State and Central Government levels, the simplification of the study through well designed info-graphics and charts can be considered. Simple answers to the potential queries can be addressed through the same.

Item no. 2.5 : System studies of four links viz; Manas-Sankosh-Tista-Ganga Link project, Ganga-Damodar-Subernarekha link project, Subernarekha-Mahanadi and Farraka - Sunderbans link project

Member Secretary briefed about discussions held in various meetings of Sub Committee-II regarding initiation of taking up system studies of four links viz; Manas-Sankosh-Tista-Ganga(MSTG) link project, Ganga-Damodar-Subernarekha (GDS)link, Subernarekha-Mahanadi (SM) link and Farraka – Sunderbans (FS) link project, shortlisting of institutes and finally awarding of works to four institutes viz; IIT, Guwahati, NIT, Patna, NIT, Warangal and NIH, Roorkee.

Thereafter, Prof. Subashisa Dutta, IIT, Guwahati made a presentation on progress achieved in system study work of MSTG link project.

Prof. P.P.Majumdar suggested to include flood modelling in the present study and to avoid use of VIC Model and CROPWAT Model. He opined to use models as used by NIH, Roorkee. He mentioned to have an analytical optimisation and for climate change analysis, rainfall and temperature data need to be taken into account.

Sh.A. C. Tyagi queried about source of data related to inflows.

Sh. M. K. Sinha enquired about existing cropping pattern taken for the study and further suggested to take more than one command area for calculation of crop water requirements for existing as well as proposed command areas.

Prof. Kamta Prasad suggested to have a multi-disciplinary team for conducting the system study work and specifically an Agronomical Economist is required to be included in the team. He also suggested to consider average of latest 3 years data for the cropping pattern parameters and to consider environmental demand while estimating water demand. He also opined to use local level data for population growth rate. He gave a few suggestions for procuring realistic data on cropping pattern, livestock growth and industrial demand for water in the project area

Chairman, Sub-Committee highlighted the fact that MSTG link would be a mother link for a set of other links and link canal alignment or routing is very crucial in the context of environmental concerns as well as transboundary concerns. The layout and sizing has to be considered from Land Use Land Cover point of view as link would pass through restricted areas like reserve forests, population centres, roadways/ railways alignments etc. Reliable data mainly for Manas and Sankosh rivers is to be taken and used for study. He mentioned

that Torsa, Raidak and Jaldhaka rivers have unregulated flows, so it is important to find that how much water can be reasonably captured from these three rivers. He suggested to take the data available with CWC for Manas and other tributary rivers originating in Bhutan/ Sikkim. The area is having high rainfall and poor drainage regime. This aspect will have to be kept in mind while accounting for en-route utilization. He emphasised that the Report / outcome of the study shall finally be able to provide the quantity of water that can be reasonably delivered to Ganga river.

Thereafter, Dr. Ramakar Jha, NIT, Patna made a presentation on system study work of Ganga-Damodar-Subernarekha link project. He explained the inception report submitted by him and described the modules within which they have divided the total study.

Chairman of the Sub-Committee pointed out that presentation made by Dr. Jha is describing individual studies having single aspect focus. However, the overall plan of study and potential approach for determining the outcome of the transfer quantum as well as en-route demand satisfaction is not emerging from the presentations made.

It was decided that NIT, Patna shall submit an Inception Report in the next meeting for deliberation by the members of the Sub Committee.

Due to shortage of time, Chairman, Sub-Committee concluded the meeting and thanked all participants for their whole hearted participation. It was decided that remaining Agenda items viz; Presentation of inception reports by NIT, Warangal and NIH, Roorkee and System Studies of Godavari – Krishna – Pennar – Cauvery – Gundar – Vaigai links system, would be considered in next meeting of the Sub-Committee that would be held in 3rd or 4th week of July, 2023.

The meeting ended with a vote of thanks to the Chair and all the participants by CE (HQ), NWDA & Member Secretary of the Sub-Committee for their fruitful guidance and deliberations.

List of participants of the 2nd Meeting of the “Sub Committee for Comprehensive Evaluation and System Studies”

| S.No. | Name of the Participant | Mode |
|-------------------------|---|-------------|
| 1. | Shri A.B. Pandya, Secretary General, ICID & Chairman of the Sub-Committee | Physical |
| 2. | Prof. P.P. Majumdar Vice Chairman of the Sub-Committee | Online |
| 3. | Prof.Kamta Prasad Member | Online |
| 4. | Prof. S. Iqbal Hasnain Member | Online |
| 5. | Sh. A.C. Tyagi Member | Online |
| 6. | Sh. M.K. Sinha Member | Physical |
| 7. | Prof. N. K. Goel Member | Physical |
| 8. | Sh. Baleshwar Thakur, CE(HQ), NWDA & Member Secretary | Physical |
| Special Invitees | | |
| 1. | Sh. Bhopal Singh, DG, NWDA | Online |
| 2. | Sh. Shiva Prakash, CE (N), NWDA | Online |
| 3. | Dr. R.N. Sankhua, CE (S), NWDA | Online |
| 4. | Sh. S.R. Mahor, Superintending Engineer- S, NWDA | Online |
| 5. | Sh.R.K.Gupta, SE, NWDA, IC, BBSR& Patna | Online |
| 6. | Sh. Ch. Y. Subramaniam, SE, NWDA, IC,Valsad | Online |
| 7. | Dr. Sudhir Kumar, Director, NIH, Roorkee | Physical |
| 8. | Prof. Subashisa Dutta, IIT, Guwahati | Physical |

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| 9. | Dr. Ramakar Jha, NIT, Patna | Online |
| 10. | Prof. N V Uma Mahesh, NIT, Warangal | Online |
| 11. | Dr. M.K. Goel, NIH, Roorkee | Physical |
| 12. | Dr. Surjeet Singh, NIH, Roorkee | Physical |
| Other Officers | | |
| 1. | Dr. P.K.Mishra, NIH, Roorkee | Physical |
| 2. | Dr. Vishal Singh, NIH, Roorkee | Physical |
| 3. | Dr. P.K. Singh, NIH, Roorkee | Physical |
| 4. | Dr. Nitesh Patidar, NIH, Roorkee | Online |
| 5. | Ms Anju Chaudhary, NIH, Roorkee | Online |
| 6. | Sh. R. Balakrishnan, EE, NWDA, Chennai | Online |
| 7. | Sh.Mahesh Kumar Raman,EE, NWDA, Patna | Online |
| 8. | Sh. M.N.Rao, EE, ID, Nasik, NWDA | Online |
| 9. | Ms DeeptiVerma, DD, NWDA, Lucknow | Online |
| 10. | Ms Deepika,DD (H), NWDA, Delhi. | Online |
| 11. | Sh. S. James, Assistant Director, NWDA, Delhi | Online |
| 12. | Sh. M.P.Krishnamurthy,Assistant Director, NWDA, Delhi | Online |
| 13. | Sh. R.K.Kharbanda, Consultant, NWDA , Delhi | Online |
| 14. | Sh. Ankit Kumar, AE, NWDA, Delhi | Physical |
| 15. | Sh. Gururajan, AE, NWDA, Chennai | Online |
| 16. | Sh. Nimish Upadhyay, AE, NWDA, Hyderabad. | Online |
| 17. | Sh. Amir Ahmad, AE, NWDA, Patna | Online |
| 18. | Sh. Nikhil V. J.,JE, NWDA, Delhi | Online |
| 19. | Sh. Subodh Kumar, JE, NWDA, Delhi | Online |

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| 20. | Sh. Prashant Singh, JE, NWDA, Chennai | Online |
| 21. | Sh. Shubham Kumar, JE, NWDA, Lucknow | Online |
| 22. | Dr. Roshni T., NIT, Patna | Online |
| 23. | Md. Barkatullah, NIT, Patna | Online |
| 24. | Dr. Koteswara Rao, NIT, Warangal | Online |

Email

Baleshwar Thakur

Meeting of the Sub Committee on 30th June 2023**From :** irmed7@gmail.com

Tue, Jul 04, 2023 02:55 PM

Subject : Meeting of the Sub Committee on 30th June 2023**To :** Baleshwar Thakur <cehq-nwda@nic.in>**Cc :** abpandya@yahoo.co.uk, sec-gen@icid.org, pradeep@iisc.ac.in, avinash c tyagi <avinash.c.tyagi@gmail.com>, Bhopal Singh <dg-nwda@nic.in>Shri Balaehwar Thakur
04-07-2023Member Secretary
Sub-Committee for Comprehensive
Evaluation of System studies for Interlinking of RiversSub: Meeting of the Sub Committee on 30th June 2023

Dear Sir,

With reference to the meeting of our Sub-committee on 30th June 2023, I am sorry to state that my audio and video system was giving some trouble because of which I could not comprehend fully what was being said by some participants. And it is possible that other participants too might have some problems in listening to my observations. Hence it seems advisable to put my views in writing to avoid any misunderstanding or misreporting. Minutes of the meeting pertaining to my observations may be recorded as below.

1. After the confirmation of the Minutes, Professor Kamta Prasad pointed out the need for a special session of the Sub-committee to discuss its Terms of Reference and to work out a strategy so that the Sub-Committee completes its task before it gets criticized for undue delay. He pointed out that this is what had been decided in the first meeting also. Hence, he suggested that the next meeting of the Sub-committee be held exclusively for this purpose within a month.

2. Participating in the discussion on Item no 2.4, Professor Kamta Prasad expressed satisfaction over compliance on a few suggestions made earlier. But he also drew attention to lack of compliance with respect to several other queries and suggestions made repeatedly during a year to which not even a reference had been made. These related to several vital aspects such as proposed cropping pattern (para 4.4.2), additional crop area from water sources other than the MG Canal (Page 57, Table 4.7), data on growth rate of population of the project area (Para 4.5.2), absence of empirical evidence in support of livestock population growth rate, highly unrealistic assumptions that industrial demand for water is "taken equal to sum of the urban, rural and livestock demands and it is met from surface water," and that "80% of the surface water supply for domestic/industrial purposes returns back to the system", neglect of the impact of increasingly important watershed development programmes on availability of additional water as well as on ground water recharge, highly unrealistic assumption of irrigation efficiency of 65% for paddy and 55% for other crops (which remains

high even after adjusting by 10% as proposed). As a result the estimates of demand, supply and balance of water made in the report become unrealistic and subject to criticism by stakeholders as past experience indicates. Hence need for great care. In case the authors do not agree with the queries or suggestions, then reasons with supporting evidence may be provided. But ignoring them altogether does not serve public interest. Since the subjects raised were matters of vital public concern, Professor Prasad suggested that the approval of the project report be kept pending till a satisfactory compliance report on all points is received from the project authors.

3. Commenting on the presentation on Manas-Sonkosh-Tista Ganga Link project, Professor Prasad indicated the need for a multidisciplinary research team and gave a few suggestions for procuring realistic data on existing and proposed cropping pattern, rate of population and livestock growth in the project area, getting realistic figures on industrial demand for water, and including environmental demand for water etc.

Needful may be done

With Regards

Kamta Prasad
