

Minutes of 9th meeting of the Sub-Committee on System Studies for identification of most appropriate alternative Plan held on 30.08.2016 at New Delhi.

The ninth meeting of the Sub-Committee on System Studies for identification of most appropriate alternative plan was held on 30.08.2016 at Sewa Bhawan, CWC, New Delhi under the Chairmanship of Prof. P.B.S. Sarma, Former Professor & Project Director, Water Technology Centre, Indian Agricultural Research Institute, New Delhi and Professor Emeritus, IIT, Delhi. The list of participants who attended the meeting is given at Annex-I.

Prof. P.B.S. Sarma, Chairman of the Sub-Committee extended a warm welcome to the participants of the meeting. He then requested Shri N.C. Jain, Director (Tech), NWDA and Secretary, Sub-Committee to take up the agenda items.

Item No. 9.1: Confirmation of the Minutes of 8th Meeting of the Sub-Committee on System Studies for identification of most appropriate alternative Plan held on 13.05.2016

It was informed that the Minutes of the 8th Meeting of the Sub-Committee on System Studies for identification of most appropriate alternative Plan held on 13.05.2016 were circulated to all the members vide letter dated 31.05.2016. Dr. S.K.Jain, NIH was having reservation on some issues which were discussed by NWDA officials with him and sorted out. No comments have been received from any of the members. As such the minutes of the 8th meeting of the Sub-Committee were confirmed as circulated.

Item No. 9.2: Follow up actions on important decisions taken during the 8th meeting of the Sub-Committee of System Studies

- (i) It was informed that the observations of the Government of Odisha on the NIH report on water balance study for the proposed Mahanadi-Godavari link were received vide their letter dated 29.06.2016 and the same would be discussed under Agenda Item No. 9.3.
- (ii) As decided in the 8th meeting of the Sub-Committee held on 13th May, 2016, the draft report on the hydrological studies and multi reservoir simulation has been revised by NIH and submitted to NWDA
- (iii) NIH, Roorkee was to re-assess the crop water requirement covering the project of Odisha and Chhattisgarh by using districtwise soil data from ICAR, IWMI, WTC (Eastern Region) but the exercise could not be completed fully due to non-availability of data particularly in respect of Chhattisgarh. The need for deciding the proposed cropping pattern and irrigation efficiency was discussed.

- a. NWDA collected the existing cropping pattern of different districts in Odisha. It was observed that area of paddy crop varies from 39% to 60% and average value of area under paddy crop works out to 49%.
- b. NWDA in its PWBS of Manibhadra dam site had earlier taken up 60% paddy in the proposed cropping pattern which should be considered reasonable.
- c. Odisha Government is insisting for 80% crop area under paddy. Prof. Kamta Prasad observed that the target for paddy crop should be reasonable.
- d. Chairman of the Sub-Committee stressed the need of increased irrigation efficiency.
- e. Representative from Odisha also agreed that water use efficiency should be improved.
- f. Chairman of the Sub-Committee stressed on the scientific approach for the study which should be universally acceptable.

The matter was deliberated during the meeting and following decisions were taken :

- (i) The irrigation efficiency of 65% in case of major and medium projects and 80% of minor project should be considered as per the norms approved by the Technical Advisory Committee of NWDA and further approved by Task Force for Interlinking of Rivers in its 4th meeting held on 15.06.2016. Thereafter crop water requirement should be worked out by applying the modified Penman method.
- (ii) WRD, Government of Chhattisgarh would furnish the required data within a week's time.
- (iii) The various pending data required by NIH, Roorkee (as given in Annex-II) would be supplied by NWDA as per their requirement within a fortnight and water balance study and simulation study of Mahanadi-Godavari link would be completed in a period of 25 days.
- (iv) The crop water requirement for existing and ongoing projects to be taken as same and that for future projects be re-worked out on climatological approach.

Item No.9.3: Observations of Government of Odisha and views of NWDA

The Government of Odisha conveyed their observations on draft report of NIH. The observations were mainly on adoption of water yield (post Hirakud Scenario only) and obtaining latest water utilisation of Chhattisgarh, latest water utilisation data for irrigation and industries as supplied by them, methodology for computation of water yield up to Hirakud, lower delta and higher regeneration adopted and insufficient environmental and ecological needs.

The observations of Government of Odisha along with the views of NWDA were discussed. Representative of the Government of Odisha was of the view that higher area for paddy crop may be taken into consideration which is upto 84% of CCA in Ong basin during kharif season. It was mentioned that instead of providing more water to the field, less water could be applied for paddy crop as per latest research. This may reduce water requirement from 12-14 watering to 6-7 watering, thus resulting in saving of about 50% of the water used for paddy crop. Prof. Kamta Prasad mentioned that demand side should be taken into account for water utilization for the crops.

It was decided that :

- (i) The soil and land use data may be collected from National Bureau of Soil and Land Use, Nagpur.
- (ii) Statistical data in respect of paddy crop may be taken from Central Rice Research Institute, Cuttack, Odisha.

Item No.9.4: Hydrological studies including water balance and multi reservoir simulation for the proposed Mahanadi-Godavari Link

Dr. S.K. Jain, Scientist 'G' NIH, Roorkee made a power point presentation on the Hydrological studies including water balance and multi reservoir simulation for the proposed Mahanadi-Godavari link. He gave the brief background of the study carried out. The Sub-Committee desired that the studies needed further revision due to the change in cropping pattern, updated utilisation data from Chhatisgarh, etc. Dr. S.K. Jain, Scientist G, NIH expressed difficulty regarding the collection of data required for the study, which is quite exhaustive .

Chairman of the Sub-Committee was of the view that ground water aspects were also required to be considered appropriately in the water balance report. Shri R.K. Jain, Chief Engineer (HQ), NWDA pointed out that as per the TAC guidelines, assessment of ground water is made and details are given in Water Balance Study Report of NWDA but it is not considered while working out water balance of the particular river basin at diversion point. It is only surface water which is considered. Chairman mentioned that the groundwater plays a major role in meeting irrigation demands and hence shall be taken into account in the report. Further, as NIH is carrying out the study as an independent organization, they are free to give their views in this aspect.

DG, NWDA mentioned that the work of Water Balance Study of Mahanadi by the Sub-Committee was being closely monitored by Ministry. As such, he made a specific request to the Chairman of the Sub-Committee to ensure expeditious completion of this study within a particular time frame.

Finally after detailed deliberations, following decisions were taken :

- (i) NIH, Roorkee would provide a list of various data required for revision of the hydrological studies including water balance and multi reservoir simulation for the proposed Mahanadi-Godavari link and the same would be collected by NWDA and supplied to NIH within a fortnight.
- (ii) Ground water aspects are also required to be considered appropriately in the study, particularly to meet the crop water requirements.
- (iii) Universally acceptable scientific approach in the study should be adopted for assessing crop water requirements keeping in mind the developments in technology for improving water use efficiency..
- (iv) The Chairman also emphasised the need for considering appropriately, various scenarios for simulation studies keeping in mind the possible trends in changes of climate, cropping patterns, land uses, water conservation , improved water use efficiencies, etc..
- (v) NIH will complete the report within 25 days.

Item No.9.5: Any other item with the permission of the Chair

- Nil -

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

Participants of the 9th meeting of the Sub-Committees for system studies for identification of most appropriate alternative plan held on 30.08.2016 at New Delhi.

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| 1. | Prof. P.B.S. Sarma
Former Prof. (Emeritus) IIT, Delhi | Chairman |
| 2. | Prof. Kamta Prasad,
Chairman, IRMED, Delhi. | Member |
| 3. | Shri M. Illangovan,
Former Chief Engineer, CWC | Member |
| 4. | Dr.S.K. Jain
Scientist G, NIH, Roorkee | Member |
| 5. | Prof. Sanjeev Kapoor
IIM, Lucknow | Member |
| 6. | Shri N.C. Jain
Director (Tech), NWDA | Secretary |

Special Invitee:Govt. of Odisha

7. Shri T.D. Sahoo,
Engineer-in –Chief,
Water Resources Department,
Govt. of Odisha, Bhubaneswar.

Special Invitee:Govt. of Chhattisgarh

8. Shri S.V. Bhagwat,
Chief Engineer, Mahanadi Project,
Water Resources Department,
Govt. of Chhattisgarh,
Raipur.

Special Invitee, NIH

9. Shri P.K.Mishra
Scientist 'B'
NIH, Roorkee

Special Invitees, NWDA

- 10 Shri S. Masood Husain,
Director General,
NWDA, New Delhi
- 11 Shri R.K. Jain,
Chief Engineer (HQs),
NWDA, New Delhi
- 12 M.S. Agrawal
Sr. Consultant,
NWDA, New Delhi
- 13 Shri M.K. Sinha,
Sr. Consultant,
NWDA, New Delhi
- 14 Smt. JancyVijayan,
Director (MDU),
NWDA, New Delhi
- 15 Shri O.P.S. Kushwah,
Superintending Engineer,
NWDA, New Delhi
- 16 Shri B.L.Sharma,
Superintending Engineer,
IC,NWDA, Bhubaneswar
- 17 Shri R.K.Kharbanda,
Deputy Director,
NWDA, New Delhi

Annex.-I (Contd.)

- 18 Shri Nizam Ali,
Consultant (Tech.),
NWDA, New Delhi
- 19 Shri K.K. Rao,
Deputy Director (H),
NWDA, New Delhi
- 20 Shri S.K. Sinha,
Jr. Consultant,
NWDA, New Delhi
- 21 Shri N.P. Sahu,
Assistant Director,
NWDA, New Delhi

Re: Agenda notes for 9th meeting of System Studies to be held on 30.08.2016

From: Sharad Jain <s_k_jain@yahoo.com> on Wed, 31 Aug 2016 16:44:11 Add to address bookTo: You & 5 others | See Details
Dear Sri RK Jain,

This is in reference to the 9th meeting of the SCILR held on 30/08/2016 at CWC.

1. Data requirement (elaborated at the end).
2. As decided, one consultant at NWDA may please be identified for this work and coordinate with NIH team.
3. It is proposed that the draft report (.DOC version) submitted by NIH may be sent to all the members of the Sub-committee (including NWDA) so that they may edit it in 'Track change mode'. NIH will finalize the report after incorporating all the edits and carrying out requisite analysis.
4. NWDA is requested to send their final comments on the report submitted by NIH in July 2016.

regards

sharadjain
NIH
+++++

I. Work component:

To estimate irrigation water requirement (delta) of 05 irrigation projects (to be identified by NWDA) in the Mahanadi basin.

II. Data requirement:

1. Cropping pattern
 - i. Crop name
 - ii. Crop acreage (ha or % of CCA irrigated)
 - iii. Planting date
 - iv. Harvesting date
 - v. Culturable Command Area (CCA) – Irrigated and Non-irrigated
 - vi. Future cropping pattern (Proposed)
2. Climatic data (monthly)
 - i. Rainfall (mm)
 - ii. Minimum temperature (⁰C)
 - iii. Maximum temperature (⁰C)
 - iv. Relative humidity (%)

- v. Wind velocity (Km/h)
- vi. Sunshine (hours)

- 3. Crop Coefficient (Kc values)
 - i. Initial stage
 - ii. Development/ Mid-season stage
 - iii. Maturity stage

- 5. Soil characteristics including irrigability and crop suitability (district-wise/ tehsil wise)
- 6. Irrigation efficiency

III. Additional data for water balance

Consideration of groundwater component in water balance was discussed in the meeting and the sub-committee advised to incorporate groundwater in water balance. Keeping in view the time availability, it is proposed that percentage of crop water demands met by groundwater may be incorporated before arriving at the final surface water requirements (irrigation). For this following data may be provided for each of the project:

- i. Groundwater availability in the command.
- ii. Groundwater utilization in the command.
- iii. Percentage of command area irrigated by groundwater (crop/season-wise)
- iv. Times series of groundwater levels – pre-post monsoon seasons.

If required, a detailed study on this aspect may be planned in the future.

From: CEHQ NWDA <cehqnwda@rediffmail.com>

To: pbssarma<pbssarma@yahoo.com>; sanjeev<sanjeev@iiml.ac.in>; dksfhy<dksfhy@rediffmail.com>; irmed7 <irmed7@gmail.com>; SKJain NIH <s_k_jain@yahoo.com>; milangovan<milangovan@hotmail.com>; ramvedire<ramvedire@gmail.com>; wrsecor<wrsec.or@nic.in>; enc<enc@cgwrld.in>; CENWDA Lucknow <cenwdalko@rediffmail.com>; scilr2014 <scilr2014@gmail.com>; SE3 NewDelhi<se3nwda@rediffmail.com>; SENWDA Bhubaneshwar <senwdabbsr@rediffmail.com>; dgnwda<dg-nwda@nic.in>; CEHQ NWDA <cehqnwda@rediffmail.com>; diretech<diretech@rediffmail.com>; dir_mdunwda11 <dir_mdunwda@rediffmail.com>; mwp<mwp@nic.in>

Sent: Sunday, 28 August 2016 4:21 PM

Subject: Agenda notes for 9th meeting of System Studies to be held on 30.08.2016

R.K. JAIN
Chief Engineer(HQ)
National Water Development Agency
18-20, Community Centre,
Saket, New Delhi-17.
phone 01126852735
fax 01126960841