

**T-03/2016-17/534/NMCG/Phase-II**  
**National Mission for Clean Ganga**  
**Ministry of Jal Shakti, Government of India**

1<sup>st</sup> Floor,  
Major Dhyan Chand National Stadium  
India Gate, New Delhi-110002  
Dated: 19<sup>th</sup> July, 2019

**OFFICE MEMORANDUM**

**Subject:** Minutes of 9<sup>th</sup> Meeting of the re-constituted Principal Committee in the matter O.A. No. 06 of 2012 — Manoj Mishra Vs Union of India & Ors held on 15.07.2019 at 12.00 PM

A copy of Minutes of Meeting of Principal Committee held at Conference Room, Ministry of Jal Shakti on 15.07.2019 at 12.00 PM under the Chairmanship of Secretary, Ministry of Jal Shakti is forwarded herewith for information/, necessary action.

*18/7/19*

(D. P. Mathuria) *18.7.2019*

Executive Director (Technical)  
Member Secretary, Principal Committee

Encl: As above.

To,

1. Shri Shashi Shekhar, Expert Member, C – II/155, Satya Marg, Chanakyapuri, New Delhi – 110021
2. Additional Secretary, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhavan, Jorbagh Road, New Delhi – 110032
3. Joint Secretary, Ministry of Water Resources, RD&GR Shram Shakti Bhavan, Rafi Marg, Sansad Marg Area, New Delhi, Delhi 110001
4. Chief Secretary, GNCTD, Delhi Secretariat, IP Estate, Near Indira Gandhi Indoor Stadium, Delhi - 110002
5. Secretary, Irrigation Department, Govt. of Haryana, Haryana Civil Secretariat, Sector-1, Chandigarh, Haryana
6. Secretary, Irrigation Department, Govt. of Himachal Pradesh, H.P. Secretariat, Shimla-171002
7. Secretary, (UP) Irrigation Department, Babu Bhawan Sachivalya, Government of UP, Lucknow – 226 001
8. Secretary, Irrigation Department, Govt. of Uttarakhand, 4 Subhash Road, Secretariat, Forth Floor, New Building Dehradun, Pin code-248001
9. Secretary, Department of Environment, Govt. of NCT of Delhi, 6<sup>th</sup> Floor, Delhi Secretariat, IP Estate, New Delhi (Fax – 011 23392034)
10. Secretary, Department of Irrigation & Flood Control, Varunalaya Complex (Phase-II), Karol Bagh, New Delhi-110005

11. CEO, Delhi Jal Board, Delhi Jal Board, Varunalaya Complex (Phase-II), Karol Bagh, New Delhi-110005
12. Dr. A. K. Gosain, Professor of Civil Engineering, Indian Institute of Technology Delhi Hauz Khas, New Delhi - 110 016
13. Dr. C. R. Babu, Centre for Environmental Management of Degraded Ecosystems, School of Environment Studies, University of Delhi-110007.
14. Dr. A. A. Kazmi, Civil Engineering Department, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand 247667
15. Vice Chairman, Delhi Development Authority, Vice-Chairman Office B- Block, 1st Floor Vikas Sadan, New Delhi-110023.
16. Shri Sanjay Saxena, Chief Engineer (Zone-II), Officer of Chief Engineer, Irrigation and Flood Control Department, GNCTD, L.M. Bund Office Complex, Shastri Nagar, Geeta Colony, New Delhi, Delhi 110031

**Copy for kind information to:**

1. PPS to Secretary, Department of Water Resources, RD&GR, Ministry of Jal Shakti
2. PS to Members, Monitoring Committee (Yamuna)
3. PS to Director General, NMCG
4. PS to ED (Projects), NMCG
5. PS to ED (Admin.), NMCG – for uploading minutes of NMCG website

**Minutes of 9<sup>th</sup> Meeting of the re-constituted Principal Committee held at Conference Room, Ministry of Jal Shakti**

9<sup>th</sup> meeting of the re-constituted Principal Committee in the matter OA No. 6 of 2012 was held on 15.07.2019 at Conference Room, Ministry of Jal Shakti under the Chairmanship of Secretary, Department of Water Resources, RD&GR, Ministry of Jal Shakti. The list of participants is at Annexure-I.

**Agenda of the meeting** – Conceptual Plan of Irrigation and Flood Control Department GNCTD for '*Development of water bodies/ reservoirs in Yamuna flood plains area by retaining excess flood water during the monsoon season*' with an objective towards recharge of Palla well field for augmentation of water supply for Delhi by tapping of excess flood water in River Yamuna during monsoon. Following discussions were held in the meeting:

1. It was informed that the Hon'ble NGT judgment dated 13.1.2015 had accepted reports of Expert Committee dated 19.4.2014 and 2.8.2014 on the aspects of preservation, restoration and beautification of the banks of River Yamuna and 2<sup>nd</sup> report dated 13.10.2014 in relation to drainage system in Delhi and Action Plan prepared by the DJB for revitalization of River Yamuna. The judgment, accordingly has recommended creation of water bodies upstream of Wazirabad.
2. Officials from Irrigation and Flood Control Department, GNCTD through a presentation (placed at Annexure-II) briefed the Committee about the proposal. Salient features of the proposal:
  - i. The proposal deals with creation of recharge ponds/ water bodies at 10 locations for storing excess flood water on right bank of River Yamuna in Delhi between the region from Palla to Wazirabad.
  - ii. These recharge ponds have total area of 1242 acres.
  - iii. The top soil in these regions has lower rates of infiltration due to agriculture practices, hence the top soil would be taken out and surface water storage be created in order to retain the excess flood water to increase the ground water recharge.
  - iv. No permanent structure would be created in the floodplain.

- v. Backfilling with excavated earth for strengthening of existing embankments and creating landscape along right bank of river Yamuna is proposed by using maximum quantity of earth so excavated.
- vi. Considering 2 metre design depth of recharge pit, storage capacity of the reservoirs (recharge pits) have been estimated as 2100 Million Gallons (MG). Expected number of filling in one flood season has been computed as 15 days. Therefore, estimated annual recharge possible  $(2100 \text{ MG} \times 15) = 31,500 \text{ MG}$ , which is equivalent to 86 MGD.

Further, it was informed that the proposal was circulated with Central Water Commission (CWC), Upper Yamuna River Board (UYRB), Central Ground Water Board (CGWB), Delhi Development Authority (DDA), Delhi Jal Board (DJB), Government of Haryana, Government of Uttar Pradesh and Monitoring Committee of NGT for consideration.

And on the basis of recommendations, Irrigation and Flood Control Department GNTCD proposes to take up the project on pilot basis, for assessing the results of the ground water recharge in the floodplain of River Yamuna. The pilot study is proposed to be taken up for the current flood season of 2019 by creation of reservoir/ water body between the Shank 6 and 7 (near Jhangola). Details of the pilot project are as follows:

No	Description	Type / Value
1	Project area (including Landscape area)	Approximately 36 acres
2	Recharge pond/ Waterbody Area	Approximately 25 acres
3	Crest Level / entry level of water	RL 208.0 m
4	Bottom of recharge pond / water body	RL 206.0 m
5	Time required to fill pond	1 day
6	No. of days when water level is above RL 208 m (Jhangola) as per historic data of I&FC	12 - 18 days
7	No. of times Ground water recharge possible during monsoon season	15 times
8	Estimated quantity of Excavation required for creation of reservoir/ waterbody	Approximately 4 lakh cum

About 45% excavated earth is estimated to be used in landscaping and strengthening of embankments. Remaining earth shall be transported to an identified land. The cost of the project after accounting for receipts on account of auctioning/ sale of excavated earth (sand) is estimated to be Rs. 9.67 Cr while same is estimated to be Rs. 28.94 Cr

without receipts and recoveries on account of sale of excavated earth (sand). Further it was informed that in case pilot project is evaluated as unsuccessful, the cost of refilling of earth in the excavated pit is also included as the project cost.

3. Following suggestions were made by Prof. C.R.Babu, Expert member of the Principal Committee:

- i. The study during pilot project should quantify the amount of water that will be retained in the pond/ reservoir and that will flow back to the river once the flood recedes, and the rate of infiltration through the pond/ reservoir during flooding.
- ii. There should be no construction/ development in the floodplain area of the river, keeping in view of the potential of flood plains as natural groundwater recharge zones.
- iii. During flooding, the slit load will be heavy, which may progressively decrease the rate of infiltration into ground water.
- iv. If the sediments are removed annually, impact assessment of the same may also be made part of report, as the removal of sediments shall affect the morphology of the river.
- v. Methods for creation of underground reservoir may also be explored.
- vi. The cost of the project shall increase with annual removal of sediments, therefore the feasibility of the project through a pilot project initially, before scaling up of the project may be necessary.

Officials from Irrigation and Flood Control Department GNCTD informed that results of on-field infiltration tests indicate a daily infiltration rate of ~ 1-2 m. Further, it was informed that the cost of the project includes the cost of annual maintenance including slit removal cost.

4. Chairman-Principal Committee suggested that instead of putting pressure on withdrawal of fresh water from the river, techniques such as roof top rainwater harvesting, creation of wetlands, recharge structure should be adopted.
5. Official of CGWB informed that 20 MGD water is being extracted by Delhi Jal Board from Palla by borewells/ rainy wells. As per CGWB report, the general direction of ground water flow in Yamuna floodplain is towards river. Therefore recharged ground water from the proposed site shall move towards the river and not the other

areas in Delhi where the ground water table is deep. Further, it was informed that geological formation act as natural ridge/ barriers restricting ground water flow from Palla region to other areas North and West with low groundwater table.

6. Member Convener-Principal Committee highlighted the observations dated 23.5.2019 conveyed to I&FC Deptt of Delhi government previously in a joint meeting held with officials from CWC, UYRB and CGWB:

- i. During flooding with water levels below El 208m (crest level of recharge pit at its inlet), the aquifers in the immediate vicinity of the proposed site towards river side shall also be saturated and will eventually result in percolation of water through its movement in sandy media. Therefore pondage in recharge pit may not lead to ground water recharge until the below strata is unsaturated facilitating movement of water into unsaturated zones.
- ii. At the water levels above El208m, the scouring depth will be much more than 2m (depth of recharge pits) and may make the proposed structure unstable structure susceptible to scour. This aspect may also be examined.
- iii. It was suggested to study the natural wetlands existing in Yamuna Biodiversity Park, in terms of groundwater recharge and to incorporate the findings in terms of ground water recharge provided by natural storages in these wetlands in the report.
- iv. The map appearing as figure No 6.9 - Decadal Fluctuations in the Ground Water Level (Aug'2005 to Aug'2014) in the report indicates that the flood plain in Palla region has registered upto 4m rise in the ground water levels inspite of approx ~20MGD withdrawals being done by DJB. The necessity of having a recharge pits is therefore not understood.
- v. As per the reports of CGWB, salinity in the ground water in this area may be an issue. Saline and freshwater interface interaction may also be documented.
- vi. Principal Committee may take a view as to whether use of construction material like bricks and concrete or gabion held stone/ boulders can be used in this 'O'-zone.

7. Chairman-Principal Committee enquired how the viability of the project in terms of net amount of water being recharged shall be assessed as region is natural recharge area exhibiting gaining water levels.

Officials from Irrigation and Flood Control Department GNCTD informed that piezometers shall be installed at the proposed site and downstream for quantification of groundwater recharged.

Official from CGWB suggested that tracer technique can also be adopted for computing the river bank infiltrations. Further, it was suggested that in case of piezometer installation, it should be done prior to the creation of reservoir, for examining the effect of the reservoir on groundwater.

8. Principal Committee recommended the proposal for approval of Hon'ble NGT, subjected to following conditions:
  - i. The proposal to be carried out as a **pilot project at one location only**, to study the techno-economic viability and to identify the quantum of the ground water recharged.
  - ii. The suggestions made by CGWB, CWC, UYRB and as made above (para 3, 5, 6 and 7) may be incorporated
  - iii. Piezometers may be installed near the proposed site and downstream, prior to the study, to compute the rise in groundwater levels due to creation of the pond. Net ground water recharge may be appropriately assessed using scientific data analysis.
  - iv. Removal of silt to be carried out in a regulated and limited manner, so as to keep the morphology of the river undisturbed. Request made by Irrigation and Flood Control Department, GNCTD for sale/ auction of excavated earth etc. (paragraph 3 of the Slide No. 22 of the Annexure-II) was not considered by the Committee as it was beyond the purview of the Committee.
  - v. The cost of the project appears to be inhibitive for one recharge pit which will provide approx 2 MGD of augmented ground water. The components of cost towards refilling of earth in case the project is not found viable, landscaping etc may be reviewed and may not be considered.
  - vi. Sufficient safeguard needs to be built for implementation of the project to ensure that no misuse takes place through unauthorized activities such as extraction of sand and other natural resources.

The meeting ended with vote of thanks to the Chair.

\*\*\*\*\*

Annexure-I

**List of participants:**

1. Shri. U.P. Singh, Secretary,  
Department of WR, RD&GR, Ministry of Jal Shakti
2. Shri. Rajiv Ranjan Mishra, Director General, NMCG
3. Shri. Nikhil Kumar CEO, Delhi Jal Board cum Secretary, Department of Irrigation  
and Flood Control, GNCTD
4. Prof. A. K. Gosain, IIT Delhi, Expert Member
5. Prof. C.R.Babu, Delhi University, Expert Member
6. Prof. A. A. Kazmi, IIT-Roorkee, Expert Member
7. Shri. D.P.Mathuria, Executive Director – Technical, NMCG (Member Convener)
8. Shri Jigmet Takpa, Joint Sectary, MoEFF&CC
9. Shri Nisheeth Saxena, M.S. (Wetland Authority) GNCTD
10. Dr. Pravin Kumar, Director T-III, NMCG
11. Dr. Uma Kapoor, Regional Director, CGWB
12. Dr. R.Chandra, CGWB
13. Shri S.K.Arya, CE (East Zone), DDA
14. Shri Shalabh Kumar, Member (Dr.), Delhi Jal Board
15. Mrs. Poonam Dewan, DDA Additional Commissioner (Landscape)
16. Ms. Neelima Soni, Deputy Director (Landscape)
17. Shri Anil Kumar Singh, CE (Yamuna), Department of Irrigation, UP
18. Shri. R.D. Sharma, Deputy Revenue Officer
19. Shri Sanjay Saxena, CE (II), I&FC, GNTCD
20. Shri O.P.Shrivastav, CE, I&FC, GNCTD
21. Shri T. K. Prijith Rekh, SE, I&FC, GNCTD
22. Shri Anil Kumar, Assistant Engineer, I&FC, GNCTD
23. Shri, Gagan Gaur, EE, I&FC, GNCTD
24. Shri. Sankalp Lahari, Director, INRM
25. Shri. Piyush K. Datta, Assistant Director, INRM
26. Shri Kumar Ajitabh, Project Officer (Legal), NMCG
27. Mrs. Ruby Raju, Project Engineer, NMCG

- in Chair-