

RAINWATER HARVESTING IN WEST BENGAL

Rapid urbanization and industrialization has led to incessant withdrawal of groundwater in recent times, without paying much heed to the hydro-geological characteristics of the area, thereby depleting the groundwater level at a fast rate. West Bengal receives a fair amount of rainfall in almost all parts during monsoon. However, in absence of any structured strategy for harvesting the rainwater excepting some piecemeal approaches Most part of the rainwater finds its way to drains/nullahs as runoff. In view of uncontrolled groundwater abstraction, there is not only significant lowering of aquifer level, in many areas of the state including Kolkata, Haldia, etc., such abstraction is also resulting in intrusion of saline water as also arsenic in the aquifer, besides subsidence of land in specific areas.

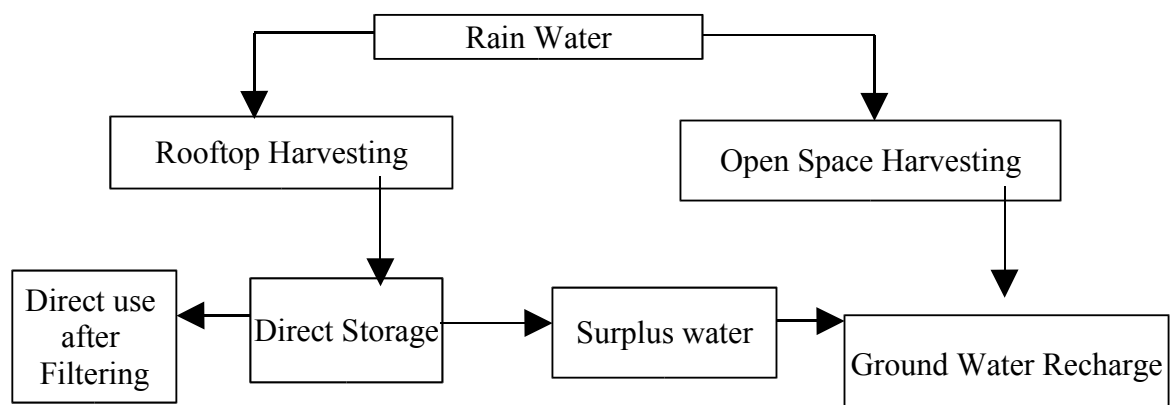
For reasons stated above, it is high time to start harvesting rainwater, specially in urban cities and drought-prone districts of the state. The rainwater during the rainy seasons can easily be collected from the rooftop (even in thatched huts). The collected rainwater may either be recharged into the groundwater aquifers or storied for direct use after very simple pre-treatment.

Advantages of Rainwater Harvesting

- Helps in meeting the ever increasing demand for water;
- Helps in conserving ground water and supplement surface water resources;
- Rain water is bacteriologically pure, free from organic matter and soft;
- Helps in utilization of the runoff going into drains; and
- Reduces soil erosion, flood hazard, etc.

Rainwater harvesting techniques

Harvesting rainwater is very simple. When it rains we have to collect this water and not allow it to run away. Broadly, rainwater can be harvested by three main techniques: a) Storage of rainwater for direct use; b) Recharging groundwater aquifers for future use; and c) Diversion of run off into existing surface water bodies.



A typical **rooftop rainwater harvesting system** comprises of following:

- Catchment;
- Gutters;
- Down pipe and first flush pipe;
- Filter unit;
- Storage tank; and
- Collection pit.

Tentative cost for rooftop rainwater harvesting per 100 sq.m. roof-area

<i>Type of Utilisation</i>	Tentative cost per 100 sq.m. of roof-area
Storage of rainwater	Rs. 2 lakhs
Recharge of rainwater	Rs. 7 lakhs

Ground water recharge

Rainwater may be charged into the groundwater aquifers through any suitable structures like:

- Recharging of dug wells and abandoned tube wells;
- Settlement tank;
- Recharging of service tube wells;
- Soak aways / Percolation pit;
- Recharge trenches;
- Recharge troughs;
- Modified injection well; and
- Spreading techniques.

Initiatives taken by the West Bengal Pollution Control Board (WBPCB)

- The WBPCB advocates the matter of rainwater harvesting in West Bengal. The Board does not permit groundwater recharge within industrial areas.
- Rain water harvesting system has been installed in 50 schools and one college (13 schools in Birbhum, 12 in Bankura, 16 in Purulia and 10 in Darjeeling districts) in collaboration with various government and non-government agencies and funded by the WBPCB.
- The Board has played a promotional role for installation of rainwater harvesting structures in another 32 schools (Five each in Darjeeling, Bankura, Purulia, Murshidabad and Nadia, four in Birbhum, and three in Kolkata).
- The execution of the above-stated projects has been done by the Institute of Environmental Studies & Wetland Management, Action for Food Production, Centre for Ground Water Studies, Paschim Banga Vigyan Mancha, and Institute for Motivating Self Employment.

Organisations/Persons involved in providing guidance and technological assistance for rainwater harvesting

1. Central Ground Water Board, Eastern Region

Bhujalika Building, Block CP - 6, Sector - V Salt Lake, Kolkata - 700 091

Contact Person: Abhijit Roy, In-charge
Tel: 2367 3081/ 3131/ 3132/ 3133

2. *State Water Investigation Directorate*
Sech Bhawan, Salt Lake, Kolkata-700 091
Contact Person: Prashanta Roy Choudhury, Director
Tel: 2337-2115

3. *Institute of Environmental Studies & Wetland Management (IESWM)*
B-04, LA- Block, Sector -III, Bidhannagar, Kolkata -700098
Contact Person: Dr. Tarashankar Bandyopadhyay, Director
Tel: 2335-8283/4240/0967(F)

4. *Action for Food Production (AFPRO)*
Task Force -Guwahati, Pub- Sarania Bye Lane No. 4 (West) , Guwahati- 781 003
Contact Person: Mr. Chandradhar, Unit Manager
Tel: 0361-2527560; M: 98640 10797

5. *Centre for Ground Water Studies*
203, Sarat Bose Road, 4th Floor, Canara Bank Building, Kolkata-700 029
Contact Person: Dr. S.P. Sinha Roy, President
Tel: 2463 5489; M: 98308 47725

6. *Institute for Motivating Self Employment (IMSE)*
195, Jodhpur Park, Kolkata- 700 068
Contact Person: Mr. Biplab Halim
Tel: 24732740, 24836491

7. *Paschim Banga Vigyan Mancha (PBVM)*
162-B, Acharya Jagadish Chandra Bose road, 4th Floor,
Room No. 401 & 402, Kolkata- 700014
Contact Person: Mr. Satyajit Chakrabarty, General Secretary
Tel: 2286 5657, 22275391(F)