



Government of Odisha
Department of Water Resources

“CHHATA”
A
STATE SECTOR SCHEME
FOR
ROOFTOP RAINWATER HARVESTING & GROUND WATER RECHARGE
IN
27 ULBs, 52 WATER STRESSED BLOCKS OF ODISHA

(FY 2022-23 To 2026-27)

DIRECTORATE OF GROUND WATER DEVELOPMENT: ODISHA
BHUBANESWAR

- **“CHHATA” – Community based Harnessing and Harvesting rooftop rainwater for Augmenting ground water.**

"CHHATA"

A STATE SECTOR SCHEME FOR ROOFTOP RAINWATER HARVESTING & GROUND WATER RECHARGE IN 27 ULBs, 52 WATER STRESSED BLOCKS OF ODISHA

1.0 Introduction

Ground water is one of the most important natural resources, which has a very wide spatial distribution. It serves as a major source of domestic water supply across the State. Ground water constitutes about 40% of the total public water supply. Apart from the public supply systems, large numbers of private wells serve as the only source of water for many households in these areas.

Odisha is prone to extreme hydrological events like droughts and floods because of the erratic monsoon and interstate rivers. The on-going climate change processes will further impact the spatial and temporal availability of water in the State compounding the water management issues. Ground water resources of the State are solely replenished by the monsoon. The long-term average annual rainfall (1482 mm) in the State corresponds to about 230.76 billion cubic meters (BCM) of water resources. Out of this total 110 BCM (i.e., 95 BCM of surface water and 15 BCM of ground water resources). At present due to topographical and hydro-geological limitations, it amounts to only 47 % of total precipitation and remaining 53 % flows in to the sea annually. Currently as regard to ground water the annual utilisation is 6.86 BCM which is approximately 45.66%.

Keeping in view of the reducing inflows from interstate rivers and water demands, it is projected that by 2050, Odisha may slip from its present water-rich status to water-stress status.

Due to rapid urbanization, the scope of natural ground water recharge is being reduced day by day. Such a situation will eventually lead to water table depletion and water quality degradation. The proposal for Ground water recharge and awareness programme is an important identified area of "Jal Shakti Abhiyan" launched by ministry of "Jal Shakti", Govt. of India in July, 2019. Keeping in view of above facts, the scheme was prepared for Rainwater harvesting and ground water recharge for sustainable ground water management in ground water stressed areas of the State. The scheme was formulated with an estimated outlay of 246.00 crores to be implemented over a period of five years. The proposal was submitted to Expenditure Finance Committee for consideration. The EFC during scrutiny of proposal had suggested for third party evaluation of the earlier roof top rainwater harvesting scheme implemented by department. Till such evaluation and submission of report thereof, the proposal was deferred. In the meantime, third party evaluation on RRHS(1st Phase) has already been conducted and the report received. Further the scheme is to be modified as per the latest ground water resource assessment 2020 where in changes in scenario have been observed. An abstract of conclusion and recommendation of the impact assessment study is presented in Annexure-XIII. Some salient features of the scheme is:

- Priority has been given for recharge of Ground Water in localised water stressed area having high extraction and scarcity in drinking water especially in Summer Season. Industrial areas like Roukela, Jharsuguda, Angul, Talcher etc have been incorporated in the recharge scheme.

- In Rural area the defunct/unused drinking water Bore well/ Tube well is to be connected to the nearby rooftop of Govt./ Private buildings through rain water harvesting pipes and filter arrangement for recharge of Ground Water as low cost involvement in the schemes.
- The Scheme is eco-friendly and does not require any land acquisition or displacement of people.
- Department of Water Resources (DoWR), Govt. of Odisha, intend to re-launch the State Sector Scheme, Rainwater Harvesting and ground water recharge through adoption of Rooftop Rainwater Harvesting Systems (RRHS) in private and Govt. buildings from FY-2022-23 in selected ULBs of the State as well as water scarce blocks. The Scheme has already been implemented in 11 ULBs during the period from 2014-15 to 2018-19. The achievement of the scheme in these 11 ULBs is as under.
Govt Buildings – 358 Nos, Private Buildings – 9959 Nos.
- It is intended to prepare a new modified scheme afresh to cover its implementation adequately in the above towns as well as 16 other towns, which are facing shortage of drinking water. List of 27 Towns to be covered under the present scheme. The execution of RRHS in large numbers in urban area will remarkably augment ground water recharge rate, water table and water quality conditions in urban area.
- The Scheme has been envisaged keeping in view the stress given for water conservation and recharge in the State Water Policy-2007. Moreover, the Orissa Ground Water (Regulation, Development & Management) Bill-2011, also prescribes mandatory adoption of RRHS for certain type of buildings. It is proposed to promote installation of RRHS in all private buildings in urban area (27 ULBs), through incentives of subsidy. Large non-residential and residential Govt. buildings in 27 ULBs and 52 blocks shall also be covered under the Scheme in a phased manner. The feasibility of building sites for installation of RRHS will be assessed on basis of hydro- geological database available with GWD, CGWB, ORSAC, etc.
- The total cost of the Scheme is estimated to be Rs. 270 Crores for five years i.e. Up to 2026-27 .

The scheme is proposed to be named as “CHHATA”.(**Community based Harnessing and Harvesting rooftop rainwater for Augmenting ground wAter.**)

2.0 Objective:

The objective of the Scheme is to improve rainwater conservation and ground water recharge through Rooftop Rainwater Harvesting Systems (RRHS) in selected urban areas (ULB) and water scarcity blocks of the State. The RRHS will also improve the regional water table and water quality conditions for sustainable management of the precious natural resource.

The major objectives are as follow:

- Augmentation of ground water recharge to improve water table and water quality conditions of the water scarcity area through adoption of recharge systems.
- Sustainability of ground water based (domestic / irrigation) Schemes at GP level through recharge of defunct public / private wells used as drinking water sources.
- Rainwater harvesting and ground water recharge to counter the climate change impacts in water sectors.
- Adoption of integrated water resources management (IWRM) concept.
- Ensure water security for future.

3.0 Scheme:

Department of Water Resources (DoWR), Govt. of Odisha, intends to launch the Scheme, "CHHATA" a State Sector Scheme for rooftop rain water harvesting and ground water recharge for the period from FY-2022-23 to FY-2026-27 (five years) in 52 water stressed blocks and 27 water scarcity ULBs.

4.1 Salient features of RRHS in private buildings in 27 ULBs :

The actual cost of a Rooftop Rainwater Harvesting System (RRHS) may vary from building to building depending on the water requirements, type and size of roof, Model of RRHS adopted etc. The typical cost estimate for a building having roof area up to 200 Sqm with different Models of RRHS are presented which includes cost of following four major components of RRHS.

1. Rainwater Collection Unit - PVC (110-150 mm) pipeline with fittings for rooftop rainwater collection and conveyance to different units.
 2. Filter Unit - Masonry tank with a bed of filter materials/110 mm dia PVC filter available in local market
 3. Storage Unit - RCC underground rainwater tank / PVC storage tank of 5,000 - 10,000 litres capacity
 4. Recharge Unit - Dug well/ Bore well / Tube Well with depth range of 10-50 m.
- Building owners shall choose anyone out of the nine RRHS Models specified based on the water requirements and space for execution of different components. Initially building owners shall construct the RRHS at their own cost.
 - In case any or all of the four components such as dug well or bore well or tube well, water storage tank and roof water drain pipes exist in the building premises, the same can be suitably modified to be incorporated into the RRHS.
 - The RRHS should have a suitable recharge unit (well), which is mandatory under the Scheme for claim of subsidy. The modular PVC / HDPE Filter Unit or Storage Unit available in the market can also be used in place of such units made of RCC or Ferro-cement or masonry.
 - The typical cost estimates of four major components of RRHS have been indicated . The cost of RRHS shall be evaluated considering the actual investment made by the

owner for the different components as described above. The cost of existing components, if any, can be considered for such evaluation under the Scheme. After successful testing of the RRHS by the authorized officer, a Certificate of Fitness shall be issued by GWD.

- The actual investment made by the owner beyond the cost of the adopted RRHS models as specified shall not be taken into account.
- The State Government shall release 50% of the cost investment actually made (limited to the cost of adopted model) by the building owner or **Rs. 55000/-** whichever is less, as subsidy through GWD.
- Eligibility: Any person, owning a building having a roof area less than 200 Sqm and not having more than three floors will be eligible to apply under the Scheme. The building owner at the time of submitting application shall have to attach the proof of his ownership (copy of holding tax / land revenue receipt / ROR etc).

4.0 Implementation / Arrangement of Scheme

(a) The Directorate of Ground Water Development (GWD) under the administrative control of Department of Water Resources (DoWR), being the nodal agency for ground water survey, monitoring and assessment in the State, on behalf of DoWR, shall be the implementing agency for the Scheme.

(b) GWD will intensify ground water table and ground water quality monitoring in the water scarcity urban and water stressed blocks (Rural) areas of the State and take up hydro-geological survey in problematic areas under the Scheme.

(c) There shall be advertisements in print as well as in electronic media describing the salient features of Scheme and its benefit for creating wide public awareness. Applications shall be invited in the prescribed format (**Form-A**) from the interested owners of eligible buildings. Applications along with leaflets will be available in the nearest GWD Office and can also be downloaded from DoWR website <https://dowr.odisha.gov.in/projects-%26-schemes/schemes/ground-water-development>

(d) Applications shall be received along with e challan of Rs.100/- *only made in the head of account 8782-00-102-1683-91028 other fees*. E challan can be generated from the IFMS portal. Applications found incomplete in any respect shall be rejected. A register shall be maintained recording the serial number of the applications. The application receiving GWD divisions shall give an acknowledgement to the applicant indicating serial number of the application with date. These applications will be forwarded to the Directorate of GWD for processing.

(e) Based on available ground water related data / information, the Officers of GWD shall pre-assess the feasibility of the RRHS in building site and issue permission to the applicant for going ahead with the execution of the RRHS. Technical help will be given by the concerned GWD Office to the applicants if required, over and above the guidance provided by the empanelled roof water harvesting consultants.

(f) GWD will empanel Roof Water Harvesting Consultants (RWHC) for creating public awareness, providing technical guidance and supervision for proper installation of RRHS in private buildings. The application already received and fresh application will be considered for the purpose. After successful testing of the RRHS the RWHC will be paid Rs. 6000/- per building under the Scheme.

(g) There shall be advertisements in local news papers inviting applications in the prescribed format (**Form-B**) from unemployed diploma or graduate Engineers / Graduates in Geology or Applied Geology or above to undergo short-term training on RRHS and related subjects at suitable locations. The training shall be provided by GWD. After successful completion of the training, the trainees will be treated as Roof Water Harvesting Consultants (RWHC) and shall be provided with Certificate of Empanelment. The Certificate of Empanelment shall be withdrawn in case of unsatisfactory performance or allegations reported against the RWHC.

(h) The GWD Divisional Officer has the discretion to restrict the receipt of applications from the intended applicants based on the limitation of budgetary allocation during the FY.

(i) On completion of the RRHS by the building owner, a Certificate of Fitness will be issued by the authorized officers of GWD, which had earlier issued permission to execute the RRHS.

(j) The building owner will apply (**Form-C**) for release of subsidy and the RWHC will apply (**Form-D**) for consultancy charges in the prescribed formats along with specified documents and undertaking to the concerned Office of GWD. These forms can be downloaded from the website <https://dowr.odisha.gov.in/projects-%26-schemes/schemes/ground-water-development>

(k) The concerned GWD Division shall release the admissible amount of subsidy (50% of the actual cost investment or Rs. 55000/-, whichever is less) to the applicant and an amount of Rs. 6000/- to the RWHC, within two months from the date of receipt of the subsidy claim (Form-C). This time limit is subject to the budgetary support available for the purpose with the concerned Office of GWD.

(l) The payment of subsidy and consultancy charges shall be credited to the bank account of the concerned building owner / RWH Consultant. No cash transactions in this regard shall be made.

(m) The Detailed Project Report (DPR) with cost estimates for Govt. non-residential and residential buildings shall be prepared by GWD. The cost of S&I for preparation of such DPRs is to be met out of the Scheme funding ("RRHS-Others" Head). With the approval of the competent authority, GWD will take up the construction of RRHS in phases.

(n) The NOC as well as an undertaking is to be furnished by the authority of the Govt. building prior to the actual construction, to ensure proper maintenance of the RRHS.

(o) Depending upon the workloads, DoWR can authorize any other competent Department to take up RRHS in Govt. buildings under the Scheme on behalf of GWD on deposit work basis. The annual maintenance cost of all RRHS executed under the Scheme in Govt. buildings will be borne by concerned departments from their own budget provisions.

(p) Through a transparent and open advertisement, a full time Technical Consultant and a Financial Consultant with requisite qualification and experience shall be hired to provide the necessary technical / financial guidance and shall be responsible for Scheme implementation.

5.0 Awareness Programme(IEC Activities) :

a) GWD shall take up all associated IEC activities to create mass awareness about the GWRS including its periodic monitoring and maintenance aspects. TV-Radio related publicity and preparation of associated manuscripts / audio-visuals will be done by GWD on behalf of DoWR.

b) Mass awareness Programmes on the following themes will be taken up by GWD during scheme implementation.

- a. Importance of Ground Water
- b. Water Conservation and Rooftop Rainwater Harvesting
- c. Re-use of defunct Borewell / Tubewell
- d. Watershed Development
- e. Intensive afforestation.
- f. GWD will take up the above awareness programmes in public through various modes such as:
- g. Distribution of leaflets/handouts/pamphlets; fixing hoardings etc.
- h. Publicity through print and electronic media i.e. newspaper advertisements, Radio jingles; TV spots etc.
- i. Conducting awareness workshops/ seminars in schools & educational institutions.
- j. Street plays.
- k. Community meetings with Senior Citizen Forums/ Clubs/ Panchyat Samiti/ Public representative forums etc.
- l. Mobile publicity Vans.

6.0 Institutional Arrangement

A rooftop rainwater harvesting Monitoring Committee (RRHMC)will be constituted by Directorate of Ground Water Development, Odisha for each district where CHHATA schemes will be implemented. The details of the Committee members will be uploaded in the DoWR website subsequently. The Committee will review the progress of the Scheme at ULB/ Block level at least twice a year and submit its observations / feedback to DoWR under intimation to the District Collector. The RRHMCwill identify Govt. buildings and prepare a priority list of such buildings for coverage under the Scheme.

The DoWR will review and monitor the implementation of the Scheme and appraise the State Government about the status from time to time.

7.0 Implementing Agency (IA)

The Directorate of Ground Water Development under Department of Water Resources, Government of Odisha, Bhubaneswar will be the Implementing Agency for the CHHATA for the entire scheme period.
