

Saving up for a rainy day

Rainwater harvesting is slowly but steadily gaining popularity throughout the country. Imran Mirza reports on this green initiative

Monsoon is here and the government, farmers, industry and people are all waiting for a good downpour. While the country as a whole receives adequate rainfall across the year, water supply is mostly dependent on catchment areas that are usually found away from the cities. Water stored in lakes and dams is then supplied to the cities through a network of pipes and pumping stations, but this web is prone to leakages and breakdowns, often disrupting supplies. Even though large cities like Mumbai, Chennai and Kolkata receive sufficient rains, they still face water scarcity as there is no proper mechanism to store and use their precious precipitation.

Harvesting to the rescue

City planners are looking at alternatives to meet the demand, with rainwater harvesting coming into focus. This process involves the accumulation and storage of rainwater through a system comprising catchments, meshes, gutters, pipes and filters. This water can then be used for various non-potable applications in toilets, gardens and industry.

Increasingly, more real estate developers, contractors and plant managers are now looking at rainwater harvesting systems as an integral part of their projects. Municipal corporations are also encouraging the adoption of such systems to ease their water woes. "It can be an important source for augmenting the city's water supply, and the excess water can be used for non-potable use,"

HOW MUCH DOES IT COST?

- The cost for setting up a rainwater harvesting system depends on the site location and size of the project.
- Approximate cost: Rs2.5-3 lakh for a single, 12x12x10-ft pit
- A rainwater harvesting storage tank will cost Rs 8-12 per litre of water storage.
- A single pit is adequate for a 10-storey building and can provide adequate water for most of the year.
- The cost is lower if the system is implemented during the initial construction of a building.



Rainwater harvesting projects are feasible due to tax rebates and the costs can be recovered quickly.

Said Sunil Prabhu, Mumbai's mayor, at a recent press meeting. Mumbai's municipal corporation is urging housing societies and developers to implement rainwater harvesting systems in their projects. The Government of Maharashtra recently proposed that permissions only be granted for new buildings if they have a harvesting systems built in. This follows 18 other states already making rainwater harvesting compulsory under building bylaws, and subsequently many other states are in the process of making it mandatory.

Industry adoption

Realising the benefits, developers and even manufacturing companies are now opting for such systems. "Setting up a rain harvesting system inside a project is one of the best practices to conserve natural resources. Many real estate developers these days are incorporating this system into their projects as it creates a reservoir that ensures continuous flow of water

required for the inhabitants," says Mohit Arora, director of Supertech, one such developer. "The system also helps in stopping the rampant exploitation of groundwater resources."

JC Sharma, managing director of Sobha Developers, shares the same view: "Rainwater harvesting has become a crucial step towards conservation of one of the most important natural resources: water. We have installed systems across our projects in Bangalore to increase the level of the water table, as well as to fight water problems during the times of scarcity, especially during summer."

The implementation of rainwater harvesting systems is not just limited to residential projects. Many commercial and industrial developers have also opted for such systems. With the water tariff for industrial applications higher than that for residential projects, it is important for companies to conserve their consumption. Furthermore, many businesses have to rely on water tankers to meet their water requirements as the municipal water supply is not adequate. Through harvesting, these companies can reduce their dependence on municipal supply to a great extent.

Tata Group has implemented rainwater harvesting systems at Tata Coffee in Karnataka and 14 Taj hotels across different of locations. Hero MotoCorp has introduced them at its plants in Dharuhera and Gurgaon. The 16 water catchments at these plants accounts for nearly 18 million litres of water each year.

HCC is taking rainwater harvesting to public infrastructure projects at its

Delhi-Faridabad Elevated Highway project; its 4.4-km long design incorporates stormwater drains alongside the highway. The infra major has also suggested ways to conserve rainwater in the area through recharge bore wells at predetermined locations along the highway.

Feasibility

Geographical topography determines whether rainwater harvesting is feasible in a particular region. For example, the process depends on rock formations and the available water table in the area, while the method employed is based on soil condition. "Places with sandy soil are best suited to have recharging bores. Clay soil is not good for recharging as water does not percolate after a certain level, and in case of heavy rainfall, bore water starts overflowing," explains Amit Kulkarni, director of Varasiddhi Infrastructure. For areas that do not have ideal geographical conditions, storage harvesting is ideal as it can be set up anywhere.

But even with all its benefits, rainwater harvesting is not widely implemented for a number of reasons — from a lack of awareness to the absence of proper guidelines and specifications for such systems. According to Ajay Kale, director of Sunlight Consultancy: "The focus has been on implementing harvesting systems in rural areas that suffer from water scarcity. In most states, it is mandatory to have rainwater systems in new buildings, but there are no such regulations for old buildings." Neither are there mechanisms to monitor its implementation in many cases, resulting in a clear need to design these so that state governments can ensure that developers are following the rules.

A smart investment

Rainwater harvesting systems offer a good return on investment. In areas of water scarcity, residential societies can spend anywhere up to Rs 4 lakh a year on water tankers, but by installing a rainwater harvesting system, one can save on these expenses as well as on water bills. "Such projects are feasible as you get tax rebates and can recover the costs quickly," says Kale, adding that it costs less to implement a system during the initial construction of a building, rather than later on. **EW**

HARVESTING THE BENEFITS

- Low cost and easy to set up
- Less dependence on municipal water supply
- Lower utility bills
- Prevents flooding and soil erosion
- Reduces contamination of surface water
- Property- and water-tax rebates in some states