



A CASE STUDY

Rainwater harvesting in North-East India: A strategy for alleviate water shortage

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Abstract : Rainwater harvesting provides an independent water supply during regional water restrictions and in developed countries. There are different ways in which rainwater can be harvested. This water can be used for direct consumption as also for recharging groundwater through simple filtration devices. Water can be collected in tanks that have cement slabs built at their base to prevent the water from seeping underground. Rainwater harvesting is more popular in Meghalaya and Mizoram. The main objectives of the paper are: (a) To study the importance of rainwater harvesting; and (b) To identify the situation of rainwater harvesting in Northeastern India.

Key Words : Rainwater harvesting, Meghalaya, Mizoram, Water shortage

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INTRODUCTION

Rainwater harvesting is the accumulation and deposition of rainwater for reuse on-site, rather than allowing it to run off. The methodology in harvesting rainwater from rooftop involves collection of rainwater from the roof through properly designed semi-circular gutters. The design and storage are decided based on the water to be harvested from the rainfall (Planning Commission, 2014). Rainwater may be collected from any kind of roof. Tiled or metal roofs are easiest to use, and asbestos sheet roofs, especially when damaged, should not be used as asbestos fibres may be released into the harvested water (United Nations Environment Programme, 2016).

The water resources potential of the region is the

largest in the entire country. Given its heavy rainfall, it also has abundant groundwater resources. But only a small part of the region has been studied to estimate the groundwater potential. The maximum scope for development of groundwater exists in Assam, Tripura and Arunachal Pradesh (Solution, 2016). Rainwater harvesting is the collection and storage of rainwater for reuse on-site, rather than allowing it to run off. These stored waters are used for various purposes such as gardening, irrigation etc (Methods of Rainwater Harvesting, 2015).

MATERIAL AND METHODS

The paper is based on secondary information. Information were collected from published sources, like

as journals, books, news papers, government reports, magazines etc.

RESULTS AND DISCUSSION

Rainwater harvesting provides an independent water supply during regional water restrictions and in developed countries is often used to supplement the main supply. It provides water when there is a drought, can help mitigate flooding of low-lying areas and reduces demand on wells which may enable groundwater levels to be sustained. It helps in the availability of potable water as rainwater is substantially free of salinity and other salts (Rainwater harvesting, 2017). The total amount of water that is received in the form of rainfall over an area is called the rainwater endowment of that area. Out of this, the amount that can be effectively harvested is called the water harvesting potential. Among the several factors that influence the rainwater harvesting potential of a site, eco-climatic conditions and the catchment characteristics are considered to be the most important (Rainwater, 2016).

Today, Chennai has the largest number of rainwater harvesting systems for any city in the world with over 5,00,000 installations. The practice has become popular in Delhi, Mumbai, Bangalore and Jaipur (The Indian Express, July 12, 2015). The rain water harvesting (RWH) scheme, a brainchild of Tamil Nadu chief minister J Jayalalithaa, was launched in 2001 in a bid to rejuvenate water sources and improve ground water levels in the parched southern state (The Hindustan Times, June 05, 2015). There are different ways in which rainwater can be harvested. There is a method of what is known as 'rooftop harvesting' in which the rainwater is allowed to get collected in built-up tanks. This water can be used for direct consumption as also for recharging groundwater through simple filtration devices. Water can also be collected in tanks that have cement slabs built at their base to prevent the water from seeping underground (Jha, 2016).

In Meghalaya, an ingenious system of tapping of stream and spring water by using bamboo pipes to irrigate plantations is widely prevalent (Northeastern Hills, 2013). Meghalaya is reeling under acute shortage of potable water, prompting the state government to focus its attention on rainwater harvesting (The Times of India, July 12, 2012). It experiences two distinct seasons, *i.e.* winter and monsoon and is characterized by a cool climate throughout the year (Jeeva *et al.*, 2006). Despite

the problem of water scarcity being pretty endemic, most here are still aloof to the work 'rain water harvesting' (Meghalaya Times, May 11, 2016). The state can take a leaf out of Karnataka government's rain harvesting plan whereby it has been made mandatory for every newly constructed building in Bangalore to have provisions in place for rainwater harvesting (The Shillong Times, July 3, 2012).

The indigenous system of conservation of rain water in Mizoram and Nagaland, through which water is collected and stored in ponds for irrigation and other purposes, is called as the Zabo system of water conservation. The harvesting of water through this system is done by collecting rain water in catchments along mountain slopes (Mishra, 2009). The Government of Meghalaya has decided to launch the "Meghalaya Water Harvesting Mission". The Water Harvesting Mission will be a State Plan scheme for which resources have to be channelized for the purpose from various schemes of other departments (Meghalaya Water Harvesting Mission, 2008). To solve the problem of water scarcity faced by the people settled atop the mountains, Mizoram Government has been extending its help in constructing water tanks at different places rain water (Shamungou, 2010).

Government of India has decided to make rainwater harvesting compulsory in urban areas considering increasing population and burden on water supply. Low rainfall situations and drying ground water levels are main challenges in urban as well as rural areas to keep sufficient water supply. Rain water harvesting is sustainable way of water conservation. Such water can be used throughout the year for all basic needs after filtration and UV disinfection (Rainwater Harvesting in India, 2015).

Conclusion :

Rain water harvesting is one of the most effective methods of water management and water conservation. It is the term used to indicate the collection and storage of rain water used for human, animals and plant needs (Mondal, 2016). The region loses the lion share of the rainwater through runoff. It is in this background that the rainwater harvesting assumes significance. It can be implemented as a viable alternative to conventional water supply considering the fact that any land anywhere can be used to harvest rainwater (Ngachan, 2016).

In Mizoram and Meghalaya, rainwater harvesting

is common in houses. Meghalaya is reeling under acute shortage of potable water, prompting the state government to focus its attention on rainwater harvesting. The Government of Meghalaya has decided to launch the “Meghalaya Water Harvesting Mission. Mizoram Government has extending its help in constructing water tanks at different places rain water.

REFERENCES

Jeeva, S., Laloo, R. and Mishra, B. (2006). Traditional agricultural practices in Meghalaya, North East India. *Indian J.Traditional Knowledge*, 5(1) : 7-18.

Ngachan, S. (2016). Rain water harvesting and its diversified uses for sustainable livelihood support in NEH region of India, p.4.

WEBLOGGRAPHY

Jha, S. (2016). Rainwater harvesting in India, <http://pib.nic.in/feature/feyr2001/fsep2001/f060920011.html>.

Meghalaya Times (2016). Rain water harvesting to alleviate water shortage in Meghalaya, <http://www.meghalayatimes.info/index.php/front-page/25129-rain-water-harvesting-to-alleviate-water-shortage-in-meghalaya>.

Meghalaya Water Harvesting Mission (2008). Retrieved from http://megplanning.gov.in/state_water_harvesting_scheme.pdf.

Methods of Rainwater Harvesting (2015), Retrieved from <http://theconstructor.org/water-resources/methods-of-rainwater-harvesting/5420/>.

Mishra, M. (2009). Rain water harvesting in the North-eastern India-with special reference to Mizoram, <http://www.ecosensorium.org/2009/09/rain-water-harvesting-in-north-eastern.html>.

Mondal, P. (2016). Rain water harvesting in India: Need, methods and other details, <http://www.yourarticlelibrary.com/water/rain-water-harvesting-in-india-need-methods-and-other-details/20917/>.

Northeastern Hills (2013), Retrieved from <http://www.rainwaterharvesting.org/methods/traditional/bamboo.htm>.

Planning Commission (2014). Success stories of roof top rain water harvesting in North Eastern states, http://www.karmayog.org/rwhrural/upload/28878/NE-States_RWH.pdf.

Rainwater (2016). From <http://www.rainwaterharvesting.org/urban/ThePotential.htm>.

Rainwater Harvesting in India (2015). Retrieved from <http://www.alfaauv.com/blog/rainwater-harvesting-in-india/>.

Rainwater Harvesting (2017). Retrieved from https://en.wikipedia.org/wiki/Rainwater_harvesting.

Shamungou, L. (2010). Rain harvesting in Mizoram, Retrieved from <http://imizoram.blogspot.in/2010/11/rain-harvesting-in-mizoram.html>.

Solution (2016). The Northeastern hill ranges, Retrieved from <http://www.rainwaterharvesting.org/eco/nhr.htm>.

The Hindustan Times (June 05, 2015). TN’s Success Story: Rainwater Harvesting, <http://www.hindustantimes.com/india/tn-s-success-story-rain-water-harvesting/story-u2LJmSHM4O4vA155wEtmOK.html>.

The Indian Express (2015). Go with the flow: The rainwater harvesting movement is steadily gaining momentum, Retrieved from <http://indianexpress.com/article/good-news/go-with-the-flow-the-rainwater-harvesting-movement-is-steadily-gaining-momentum/>.

The Shillong Times (2012). Water starved Shillong seeks rainwater harvesting, <http://www.theshillongtimes.com/2012/07/03/water-starved-shillong-seeks-rainwater-harvesting/>.

The Times of India (2012). Meghalaya focus on rainwater harvesting, <http://timesofindia.indiatimes.com/city/guwahati/Meghalaya-focus-on-rainwater-harvesting/articleshow/14839855.cms>.

United Nations Environment Programme (2016). Retrieved from <http://www.unep.or.jp/ietc/publications/techpublications/techpub-8e/rooftop.asp>.

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