



पंचायत



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Role of Panchayat in Rainwater Harvesting



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Following precautionary measures should be taken while harvesting rainwater:-

- *Roof or terraces used for harvesting should be clean, free from dust, algal plants etc.*
- *Roof should not be painted since most paints contain toxic substances and may peel off.*
- *Do not store chemicals, rusting iron, manure or detergent on the roof.*
- *Nesting of birds on the roof should be prevented.*
- *Terraces should not be used for toilets either by human beings or by pets.*
- *Provide gratings at mouth of each drainpipe on terraces to trap leaves debris and floating materials.*
- *Provision of first rain separator should be made to flush off first rains.*
- *Do not use polluted water to recharge ground water.*
- *Ground water should only be recharged by rainwater.*
- *Before recharging, suitable arrangements of filtering should be provided.*
- *Filter media should be cleaned before every monsoon season.*
- *During rainy season, the whole system (roof catchment, pipes, screens, first flush, filters, tanks etc) should be checked before and after each rain and preferably cleaned after every dry period exceeding a month.*
- *At the end of the dry season and just before the first shower of rain is anticipated, the storage tank should be scrubbed and flushed off all sediments and debris.*

Articles are invited on the topic of “Role of Panchayat in Conserving Medicinal Plants” for the next issue of this Newsletter “PANCHAYAT”

Editorial

Water has provided the platform for the creation of first life on this earth. It is the most important requirement for the existence of life. We have 3/4th portion of the world covered by water. Unfortunately, all this water is not suitable to be used directly by the human beings. Out of total water available on this earth, approximately 5% of the water is suitable for human use. Due to various human activities, such as population growth, industrialization etc water becomes unsuitable due to pollution and cannot be used and finally leads to water scarcity.

To mitigate the scarcity of water, it is essential to use various water sources. Rain water can be one of the major sources for getting usable water. Particularly in India, we have significant quantity of rain fall even though the amount of rainfall varies from state/ region to state/ region. The rain water is pure and suitable for human use before it reaches at the earth's surface. Once it reaches at the surface, it becomes impure and flows as surface water runoff.

Here is the opportunity to collect the rain water for human use. Rainwater harvesting is the accumulating and storing, of rainwater. It can be used to provide drinking water, water for livestock, and water for irrigation or to refill aquifers in a process called groundwater recharge. Rainwater collected from the roofs of houses, tents and local institutions or from specially prepared areas of ground can make an important contribution to drinking water. In some cases, rainwater may be the only available or economical water source.

Rainwater harvesting systems are simple to construct from inexpensive local materials and are potentially successful in most habitable locations. Roof rainwater can be of good quality and may not require treatment before consumption. Although some rooftop materials may produce rainwater that is harmful to human health which can be useful in flushing toilets, washing clothes, watering the garden and washing cars thereby reducing the water demand.

It is time to aware and sensitize people regarding the need of rain water harvesting. Efforts should be made to spread this idea at the grass root level where the water purification systems are not efficiently implemented. To achieve this objective, it is essential to involve the Panchayati Raj Institutions. The capacity of the officials of Panchayati Raj Institutions should be built through awareness, education and training. They in turn will be able to implement the idea successfully by increasing people's participation.

We are sure; this issue of the newsletter "PANCHAYAT" will sensitize the leading voluntary organizations and educate the masses about rain water harvesting methods.

Dr. Desh Bandhu
President

CLIMATE CHANGE AND ECOLOGY

The climate change is affecting various aspects of the human lives and ecology. Water resources are among the most vulnerable sectors to be affected by the climate change. Warming trend over India, reported to be 0.570 C per 100 years is likely to affect the hydrological cycle. Annual rainfall variability from one state to another stretches from 10% - 60% or even more characterized by heavy to low rainfall crucially affects crop production. The changes in water cycle would result in:-

- Reduction in frequency of rains but increase in intensity;
- More rainfall in lesser time;
- Increased glacial melt-runoff initially and then afterwards decrease;
- Increase in runoff but less ground water recharge;
- Increase in flood events particularly of flash floods;
- Increase in drought like situations; cyclones etc.

India's average annual rainfall is around 1170 mm. It varies from low in the deserts of western India to high in the hills of the North-East. It is essential to utilize the rain water wisely. In the perspective of Rural India where the water purification facility is

hardly available or not available, rain water can be of great importance which will provide safe water for human consumption as well as for livestock, agriculture and other uses.

Our observation and experiences revealed that promotion of traditional water harvesting structures through appropriate institutional mechanisms and financial arrangements would be the best intervention or adaptive mechanism to reduce the adverse impact of climate change on groundwater resources as well as farm economy based livelihood.

This turnaround in the region was due to revival of traditional water harvesting structures backed up by region specific institutional mechanisms. Thus the issue of water is not about scarcity but about its careful usage and its equitable distributed access. This will require reworking the paradigm of water management, so that it is designed to harvest, augment and use local water resources so that it leads to inclusive growth at all levels. It is evident that freshwater resources and ecosystems are under great threat from non-climate related demands and problems, and water managers are focused on finding sustainable solutions to these pressing challenges.

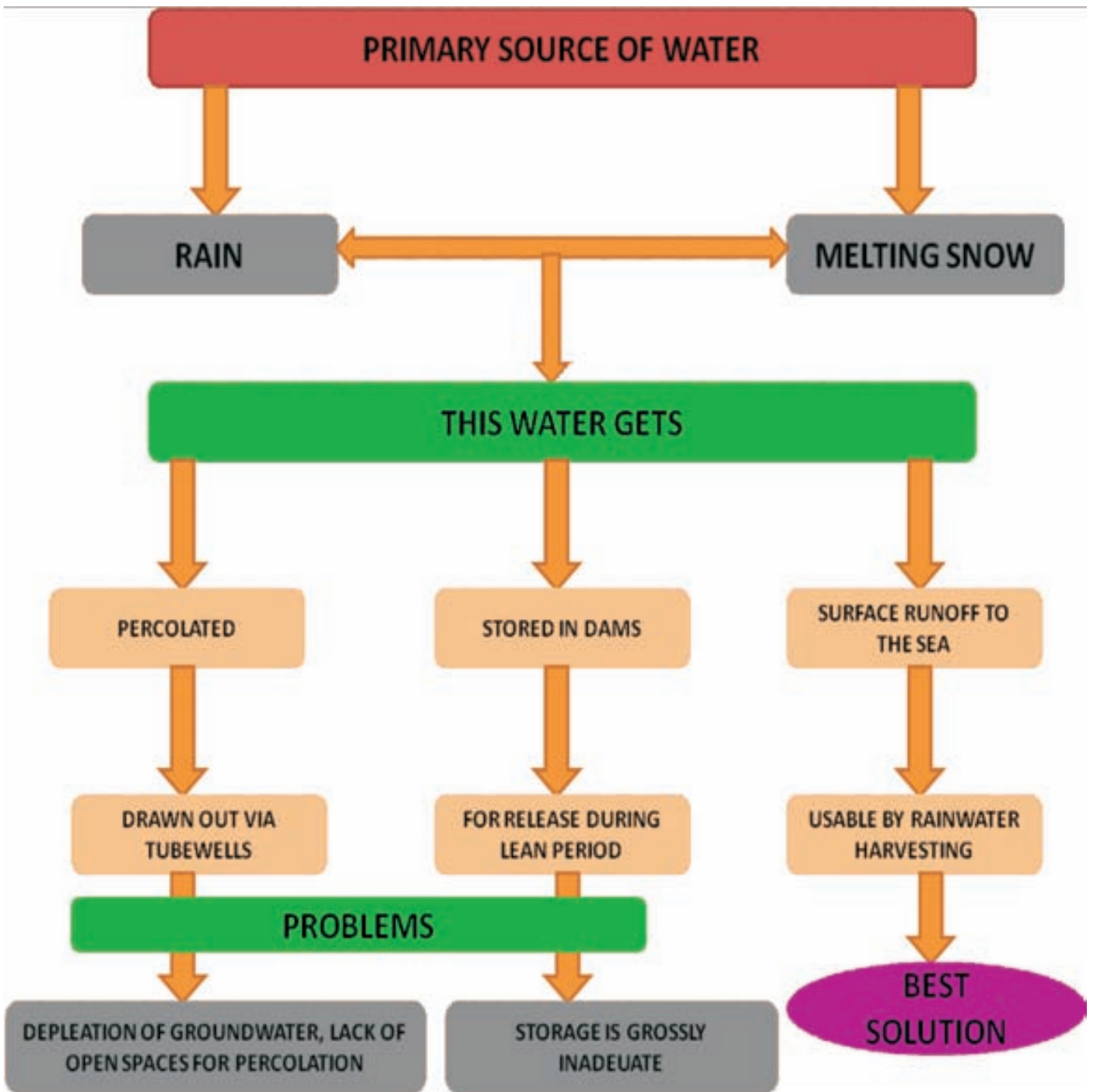
RAIN WATER HARVESTING

The most valuable natural resource on the earth's surface is water and most people are aware of its limited supply. The incessant use of water by humans has led to its depletion. Hence looking at the current rate of water depletion, a need has been felt to save water in order to sustain life. There are various methods to save water or avoid its wastage. Rain water which is one of the most important sources of water supply needs to be best utilized. The significance

of rain water harvesting in today's scenario is varied and must be encouraged. Rainwater is an economical, safe and sustainable source of quality water when it is captured and stored in a correct manner. Rainwater systems are simple to construct from inexpensive local materials, and are potentially successful in most habitable locations.

What is Rain Water Harvesting?

Rainwater harvesting is a technology used for collecting and storing rainwater from rooftops, the land surface or rock catchments using simple techniques such as jars and pots as well as more complex techniques such as underground check dams.



A Flow Chart-Identifying where Water Harvesting Comes in the Whole Picture

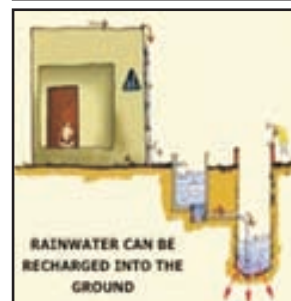
(Source-WWF Envis centre)

Components of Rain Water Harvesting

The six basic components of a Rain Water Harvesting system includes:-

- **Catchment** : roof surface to collect the rain.
- **Conveyance** : channels or pipes from roof or catchment area to storage.
- **Roof washing** : 'first flush' diverter system to filter and remove contaminants.
- **Storage** : cisterns or tanks where collected rainwater is securely stored – i.e. insect proof.
- **Purification** : includes filtration, ozone or UV light to purify the collected rainwater for potable use.
- **Distribution** : system that delivers the rainwater, usually including a small pump and pressure tank.

Commonly used systems are constructed of three principal components; namely, the catchment area, the collection device, and the conveyance system.



Structures from where to Harvest the Rain

Rainwater harvesting can be harvested from the following surfaces:-

- **Rooftops** : If buildings with impervious roofs are already in place, the catchment area is effectively available free of charge and they provide a supply at the point of consumption.
- **Paved and unpaved areas** i.e., landscapes, open fields, parks, storm water drains, roads and pavements and other open areas can be effectively used to harvest the runoff. The main advantage in using ground as collection surface is that water can be collected from a larger area. This is particularly advantageous in areas of low rainfall.
- **Water bodies** : The potential of lakes, tanks and ponds to store rainwater is immense. The harvested rainwater can not only be used to meet water requirements of the city, it also recharges groundwater aquifers.
- **Storm water drains**: Most of the residential colonies have proper network of storm water drains. If maintained neatly, these offer a simple and cost effective means for harvesting rainwater.

Whether to store rainwater or use it for recharge: The decision whether to store or recharge water depends on the rainfall pattern and the potential to do so, in a particular region. The sub-surface geology also plays an important role in making this decision. Delhi, Rajasthan and Gujarat where the total annual rainfall occurs during 3 or 4 months, are examples of places where groundwater recharge is usually practiced.

In places like Kerala, Mizoram, Tamil Nadu and Bangalore where there is rain fall throughout the year barring a few dry periods, one can depend on a small sized tank for storing rainwater since the period between two spells of rain is short.

Wherever sub-strata is impermeable recharging will not be feasible. Hence, it would be ideal to opt for storage.

In places where the groundwater is saline or not of potable standards, the alternate system could be that of storing rainwater. In Ahmedabad, which has limited number of rainy days as that of Delhi where traditional rainwater harvesting tanks are used to store rainwater even today in residential areas, temples and hotels.

(Source-Centre for Science and Environment)



Rainwater Harvesting

Significance of Rain Water Harvesting

Rainwater harvesting technologies are simple to install and operate. Local people can be easily trained to implement such technologies, and construction materials are also readily available.

Following are the advantages of Rain Water Harvesting:-

- Water is naturally pure.
- Water is naturally soft (no dissolved minerals).
- It's free for those who collect it.
- It's sustainable.
- Water is free of chlorine and its by-products.
- Water is free of pesticides and other man-made contaminants.
- Low operational and maintenance costs.
- Reduces run-off and erosion.
- Provides self-sufficiency to your water supply and to

supplement domestic water requirement during summer and drought conditions.

- To reduce groundwater pollution and to improve the quality of groundwater through dilution when recharged to groundwater.



Although regional or other local factors can modify the local climatic conditions, rainwater can be a continuous source of water supply for both the rural and poor. Water is precious to humans and hence its optimum use should be of primary concern for us in order to sustain our lives for today and tomorrow!

Collection Devices

Tanks for collecting rainwater harvested using guttering may be either above or below the ground. Various types of rainwater storage facilities can be found in practice. Among them are cylindrical ferrocement tanks and mortar jars. The storage capacity needed should be calculated to take into consideration the length of any dry spells, the amount of rainfall, and the per capita water consumption rate.

Rainfall water containers: As an alternative to storage tanks, battery tanks (i.e., interconnected tanks) made of pottery, ferrocement, or polyethylene may be suitable. The polyethylene tanks are compact but have a large storage capacity (1000 to 2000 liters), are easy to clean and have many openings which can be fitted with fittings for connecting pipes.

Catchment Areas

Rooftop catchments

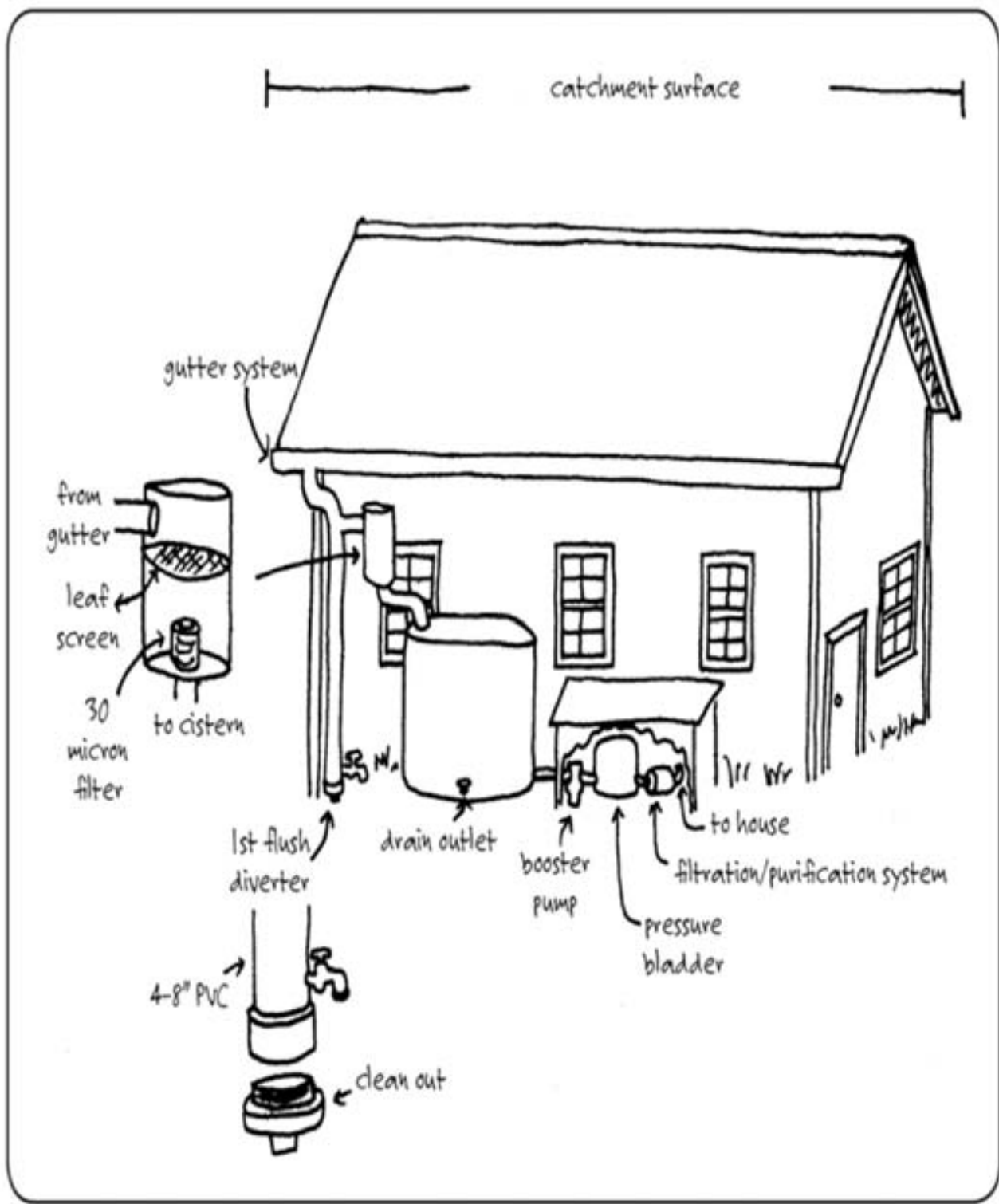
In the most basic form of this technology, rainwater is collected in simple vessels at the edge of the roof. Variations on this basic approach include collection of rainwater in gutters which drain to the collection vessel through down-pipes constructed for this purpose, or the diversion of rainwater from the gutters to containers for settling particulates before being conveyed to the storage container for the domestic use.

Land surface catchments

Rainwater harvesting using ground or land surface catchment

area is less complex way of collecting rainwater. It involves improving runoff capacity of the land surface through various techniques including collection of runoff with drain pipes and storage of collected water. By retaining the flows (including flood flows) of small creeks and streams in small storage reservoirs (on surface or underground) created by low cost (e.g., earthen) dams, this technology can meet water demands during dry periods. There is a possibility of high rates of water loss due to infiltration into the ground, and, because of the often marginal quality of the water collected, this technique is mainly suitable for storing water for agricultural purposes.

Components of a Rain Water Harvesting System



Role of Panchayats in Rain Water Harvesting

Role of Panchayati Raj Institutions is very important. Gram Panchayats should take lead role in organizing awareness campaign amongst people and get the community involved in watershed activities, required to implement the watershed satisfactorily. The village panchayats will play water conservation and rainwater harvesting works. Participation of young and old, students and teachers; community and panchayats can make such a campaign a movement in the country. The local bodies such as the gram panchayats should be particularly involved in the operation, maintenance and management of the water infrastructures/facilities at the appropriate levels

progressively with a view to eventually transfer the management of such facilities to the user groups/ local bodies.

Following activities should be undertaken:-

- Development of small water harvesting structures such as low-cost farm ponds, nallah bunds, check dams, percolation tanks, crescent shape structures, water absorption trenches and other ground water recharge measures.
- Rejuvenation of abandoned wells for domestic use.
- Maintenance of Natural spring.

Conveyance System

Conveyance systems are required to transfer the rainwater collected on the rooftops to the storage tanks. This is usually accomplished by making connections to one or more down-pipes connected to the rooftop gutters. When selecting a conveyance system, consideration should be given to the fact that, when it first starts to rain, dirt and debris from the rooftop and gutters will be washed into the down-pipe. Thus, the relatively clean water will only be available some time later in the storm. There are several possible choices to selectively collect clean water for the storage tanks. The most common is the down-pipe flap. With this flap it is

possible to direct the first flush of water flow through the down-pipe, while later rainfall is diverted into a storage tank.

RURAL INSTALLATIONS OF RAIN WATER HARVESTING

India lives in its 600,000 villages. Almost, 78% of the population is rural and agricultural related. As water is the most determining factor for agriculture, its optimum utilization becomes a must. Hence the significance of rain water harvesting in villages is very high. But, it is difficult to install urban rain water techniques in villages.

Methods of Rain Water Harvesting in villages

1. COMMUNITY WELLS

The best and simplest way to harvest rain water in a village is to dig community wells or restore existing wells. These wells could be spaced in the four corners of the village. It is important to construct soak pits to control the flow of dirty water and prevent them from flowing close to the open wells.

2. RESTORE WATER BODIES

Most of the water bodies have now become garbage dumping places. Desilting, dredging, and restoring these lakes is the key to restore rural water supplies.

3. CHECK DAMS

Check dams are small barriers built across the direction of water flow on shallow rivers and streams for the purpose of water harvesting. The small dams retain excess water flow during monsoon rains in a small catchment area behind the structure. Pressure created in the catchment area helps to force the impounded water into the ground.

4. CONTINUOUS CONTOUR TRENCHING

Construction of trenches on slope contours to detain water and sediment transported by water or gravity down slope generally constructed with light equipment. These are also known as contour terraces or contour furrowing lined with geo textiles and filled with rock, stacked or placed to form an erosion resistant structure.



Why to harvest the Rain?

Rain water is most suitable where:-

- Groundwater is scarce.
- Groundwater is contaminated.
- Terrain is rugged or mountainous.
- Seismic & flooding events are common.
- The aquifer is at risk of saltwater intrusion.
- Population density is low.
- Electricity & water prices are rising.
- Water is too hard or mineral laden.

Rainwater Harvesting Lessons from the Past

- **Harappan civilization** : A very good system of water management.
- **Ancient period** : In Tamil Nadu, rainwater was stored in public spaces separately for drinking and bathing purposes, which were called as Ooranies. Percolation tanks or ponds were also made for the purpose of recharge irrigation.
- **Pre-independence era** : Rainwater harvesting structures existed in low rainfall areas of Rajasthan; harvesting springs in hilly areas and mountainous regions; percolation ponds and tanks in Southern India.
- Villages in Thar Desert had an ingenious system of rainwater harvesting known as kund or kundis i.e. covered underground water tank.
- In Spiti valley of Himachal Pradesh, kul (diversion channels) irrigation is utilised to carry water from the glaciers to the village.
- Havelis in Jodhpur and Jaisalmer channel every drop of water into a container – usually under the courtyard, to store rainwater.
- The Viceregal lodge in Shimla, of 1880s, channels every drop of water from the roof of the building into two large tanks – one under the main front garden and the second next to the council chamber.

(Source-WWF, Envis centre)

EXAMPLES FOR SUCCESSFUL IMPLEMENTATION OF ROOF TOP RAIN WATER HARVESTING IN NORTH EASTERN STATES

North Eastern region, though endowed with high rainfall, suffers from water shortage during the dry months particularly in hilly areas and urban areas. Rainwater is considered to be a viable means to augment the water supply for domestic water needs. Considering this, roof top rainwater harvesting was taken in North-Eastern Region under Central Sector Scheme during IX Plan in Assam, Arunachal Pradesh, Meghalaya, Mizoram and Nagaland and under Fresh Water Year 2003 in Assam.

Rain Water Harvesting is a technique of collection and storage of rain water in surface or in sub-surface aquifer before it is lost as surface run-off. The augmented resource is used in the time of need. The methodology in harvesting the 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. The storage capacity has been decided on the daily requirement basis. The catchment area for the rooftop is taken as the plan area of the roof.

Estimation of the water available from roof top rain water harvesting is based on the catchment's area of the roof top. It requires a provision for flushing arrangement for the first showers to drain out the accumulated unwanted materials from roof top such as dried and fallen leaves, bird's droppings etc.

From the roof top, water is collected through semi-circular gutters fitted along the edge of the sloping roof. Water from these semi-circular gutters are channelized through down flow pipes to storage tanks kept at the ground/underground. The gutters are fitted in such a way that the slope is maintained towards the storage tank. A bigger diameter of the semi-circular gutter is preferred since it will have a higher carrying capacity and will not overflow during heavy rains.

Excess water may be routed to augment ground water resource. This may be achieved by diverting the excess water to abandoned dug wells or into a recharge pit. The size (or diameter) of the semi-circular gutters depends on the roof top/catchment area and the rain fall intensity. The number of structures constructed state-wise is in the table below:-

State wise Rooftop Rainwater Harvesting Structures

State	Scheme		Total structures	Cost (in Lakhs)
	Central Sector Scheme	Fresh Water Year 2003		
Assam	12	1	13	23.22
Nagaland	42		42	116.43
Arunachal Pradesh	5		5	20.0
Meghalaya	6		6	20.32
Mizoram	35		35	28.0
Total	100		101	207.97

Source : Central Ground Water Board, Ministry of Water Resource, Govt. of India.

Details of Roof Top Rain Water Harvesting Structures Implemented by NGO

Name of State	Name of NGO	No. of Schools covered				No. of students benefited
		Phase-I	District	Phase-II	District	
Assam	Bosco Reach out, Guwahati, Kamrup	5	N.C. Hills	--	--	NA
	Centre for Youth & Rural Development, Chirang.	6	Chirang/ Udalguri	--	--	NA
	Subungni Najanai, Kokrajhar	5	Kokrajhar	15	Kokrajhar	NA
Manipur	Volunteers for village development, Ukhrul	5	Ukhrul	10	Ukhrul	772
Meghalaya	Bethany Society, Laitumkhrah, Shillong	6	East Khasi Hills	2 1 1	West Garo Hills East Garo South Garo	836
Nagaland	Prodigals Home, Dimapur	5	Dimapur	10	Dimapur/ Peren	2068
	Naga Mothers Association, Kohima	5	Kohima	10	Kohima	NA
Total		36		45		3676

Source :- Central Ground Water Board, Ministry of Water Resource, Govt. of India.

Bhoomial Samvardhan Puruskar – 2007

Bethany Society, Meghalaya was the only recipient of 'Bhoomijal Samvardhan Puruskar 2007 in North Eastern States. Ten Rooftop Rain Water Harvesting Tanks have been constructed in ten schools located in the East Khasi Hills, East, West and South Garo Hills district, Meghalaya. Twenty low cost toilets have been constructed (two in each school). There are separate toilets for girl students.

Benefits Accrued

- A total of 3, 00,000 litres rainwater has been conserved in 10 tanks.
- 20 low cost toilets, 2 in each school.
- 836 students avails safe drinking water and sanitation facilities in the 10 schools.
- Village community came together to solve an urgent problem. Village community was trained to implement all aspects of a programme such as planning, purchase of materials, payment to workers, monitoring, social auditing, maintenance of records, share benefits according to norms set by the community.
- Awareness level regarding water and sanitation were raised and community demanded such services from their local representatives.
- Village community and school community were motivated to take charge of the programme and ensure its sustainability.

Type of innovative methodology/technology adopted

- Involvement of the community for the total implementation of the project.
- Gender sensitivity in formation of village level implementation committees.
- Transparency in all monetary transactions.

- Demonstration of both underground and above ground rainwater harvesting tanks.
- Use of rooftop rainwater harvesting technology.
- Use of two-pit low cost sanitation toilets.
- Use of social audit for monitoring.
- Collaboration among Ministry of Water Resources, CGWB, National Level NGO, Local NGO and local community to implement the programme.
- The scheme is under the direct charge of the Headmaster and Managing Committee of the respective school.

Benefit-cost ratio

- Approximately Rs. 80,000/- was spent on the construction of the tanks. Hence, the cost of per litre of water conserved has been worked out to be Rs. 2.66.
- The maintenance cost is almost negligible.

Sustainability

- The tanks have a life of 20 years and the only maintenance required is to ensure that the channels from the rooftops are well maintained and the tanks are cleaned and necessary chemicals are used for purification.
- The school and village communities were made the primary stakeholders.

Awareness Generated

- Awareness has been generated in all the ten villages and also some of the neighboring villages on the value of rainwater harvesting, importance of portable drinking water and sanitation.
- Bethany Society has been approached by many villages and local community groups to expand the programme

(Source:

http://www.karmayog.org/rwrrural/upload/28878/NE-States_RWH.pdf)

From Print Media

'Water harvesting a must for buildings'

Geeta Gupta, THE INDIAN EXPRESS, NEW DELHI

Wednesday, July 16, 2008

ALL NEW building plans in the Capital will now be cleared only if they have rainwater harvesting system installed. Lieutenant Governor Tejendra Khanna has directed the Municipal Corporation of Delhi and the Delhi Jal Board to make installation of rainwater harvesting systems mandatory 'in spirit' before clearing any new building plans.

The Ministry of Urban affairs and Poverty Alleviation had made

rainwater harvesting mandatory in June 2001 for all new buildings with a roof area of more than 100 sq meters and in all plots with an area of more than 1,000 sq meters. In most cases, however, the directive was being implemented only on paper.

In order to implement the directive seriously to promote water conservation and put a check on the rapidly depleting watertable in Delhi, L-G Tejendra Khanna has directed the MCD to be

vigilant and not clear any new building plans without a rainwater harvesting system.

“Rainwater harvesting has not been taken up very seriously till date. As per directions of the L-G, new building plans, specially for commercial complexes, will be cleared only if they have rainwater harvesting systems installed, said Ranjan Mukherjee, Officer on Special Duty to the L-G.

Khanna has also directed the DJB to monitor the RWH structures from time to time to achieve its desired goal. Simultaneously, the DJB and the Central Ground Water Board (CGWB) would also provide technical guidance for proper maintenance of such structures, wherever necessary.

According to K S Mehra, MCD Commissioner, the system has been put in place for some time now. “Since the idea is to conserve water and building more public awareness about the

same, the MCD will now follow the directive very scrupulously,” he said.

There are already many buildings in the city that have installed water harvesting systems, but they have now gone defunct. DJB will act as the neutral body in ascertaining the systems installed in the establishments. “While the MCD will monitor clearance of any building plans, the DJB will ascertain the technicalities of the system installed,” clarified Arun Mathur, CEO of DJB.

Mathur said that once the clearance was made, people usually didn't bother to maintain their systems. “Rainwater harvesting is an important means of conserving water by capturing is an important means of conserving water by capturing the city's rainfall to recharge its groundwater, which is depleting at a very fast rate,” he said.

रीसाइक्लिंग से मिलेगा खूब पानी

गर्मियों में पानी की किल्लत न हो , इसके लिए जल बोर्ड ने समर एक्शन प्लान पास कर दिया है इसके तहत पानी की कमी से निपटने के लिए उसे रीसाइकल किया जाएगा और घर-घर तक पहुंचाया जाएगा । रीसाइक्लिंग से 20 एम जी डी अतिरिक्त पानी उपलब्ध होगा । यानी गर्मियों में दिल्लीवालों का गला सूखेगा नहीं ।

178 किमी लंबी पुरानी व टूटी फूटी पाइप लाइनों को बदला गया ।

1275 टैंकर पहुंचाएंगे जल संकट वाले क्षेत्रों में पानी ।

नई दिल्ली (एसएनबी) अगले माह से पड़ने वाली चिलचिलाती गर्मी के मद्देनजर दिल्ली जल बोर्ड ने आज अपना समर एक्शन प्लान 09 घोषित कर दिया । अबकी गर्मी में दिल्ली जल बोर्ड दिल्लीवासियों की बढ़ी प्यास को रीसाइकल पानी से बुझाने की तैयारी कर रहा है । इतना नहीं घरों में सही से पानी पहुंचे इसके लिए बोर्ड ने पुरानी और टूटी फूटी पाइप लाइनों को बदला । गर्मियों में लोगों को पानी की समस्या न हो इसके लिए बोर्ड ने अपनी सभी वाटर इमरजेंसियों को अधिशासी अभियंताओं के हवाले कर दिया है । बोर्ड पानी की शिकायतों को दूर करने के लिए चार हेल्पलाइन सेवा भी शुरू कर रहा है ।

मुख्यमंत्री व बोर्ड की अध्यक्ष शीला दीक्षित को आज बोर्ड के मुख्य कार्यकारी अधिकारी रमेश नेगी ने बोर्ड का समर एक्शन प्लान को स्वीकृति दी । समर एक्शन प्लान में इस बार सबसे बड़ा काम पानी की क्षमता बढ़ाने का है बोर्ड ने अपने चल संयंत्रों में रीसाइकल करने का काम शुरू किया है । जिसके तहत हैदरपुर जलसंयंत्र से 16 एम जी डी का जलशोधन शुरू किया । इसके अलावा गर्मियों में भगीरथी और वजीराबाद

से 20 एम जी डी अतिरिक्त पानी और मिलना शुरू हो जाएगा । जबकि चौथे जलसंयंत्र चन्द्रावल से साल के अंत तक पानी मिलना शुरू हो जाएगा । जबकि चौथे जलसंयंत्र चन्द्रावल से साल के अंत तक पानी मिलना शुरू होगा । गर्मियों से पहले जल बोर्ड ने अपनी उत्पादन क्षमता को 770 एम जी डी से बढ़ाकर 810 एम जी डी कर लिया और अब जून तक इसमें 20 एम जी डी और बढ़ा लिया जाएगा ।

बोर्ड ने इन गर्मियों के लिए जलसंकट क्षेत्र में पानी पहुंचाने के लिए 1275 टैंकरों को तैयार कर रखा है जिसमें जल बोर्ड के 600 और 675 प्राइवेट टैंकर हैं । पेयजल सही दबाव में घरों तक पहुंचे इसके लिए जल बोर्ड ने बीते साल ही अपनी लाइन नेटवर्क की 341.44 किलोमीटर पानी की लाइनों को बदल दिया था । इसके अलावा अभी तक 177.83 किलोमीटर पुरानी और टूटी फूटी लाइनों को भी बदल दिया गया है । जिससे कई इलाकों में पानी का दबाव भी सही हुआ है । जल बोर्ड ने संकटग्रस्त क्षेत्रों को भी चिह्नित किया है । जहां पानी की जरूरत पूरी करने के लिए अपनी 25 वाटर इमरजेंसियों को चुस्त-दुरुस्त किया है । बोर्ड ने प्रत्येक इमरजेंसी को अपनी अधिशासी अभियंताओं के अधीन कर दिया है ।

बोर्ड ने अब तक अपनी 53 भूमिगत जलाशयों में से 22 निर्माण पूरा कर लिया है इसके अलावा 11 और भूमिगत जलाशयों के निर्माण का कार्य पूरा में लगा है । बोर्ड ने अपने इंजीनियरों को निर्देश जारी किए हैं कि वे अप्रैल के मध्य में दिल्ली के सभी बोरवेल और ट्यूबवैलों का निरीक्षण करेंगे कि वे ठीक से काम कर रहे हैं या नहीं । इसके अलावा संकटग्रस्त क्षेत्रों में लगे वाटर हार्डड्रेटस को 15 अप्रैल तक जांच करने और उसे प्रमाणित करने के भी निर्देश दिए हैं ।

कैसे बचाएं पानी

स्टोर करें बारिश का पानी

पानी की कमी है लेकिन उसका हल मारे पास है प्रकृति तो कमी को पूरा करने के लिए मुफ्त पानी हर जगह बांट रही है । सिर्फ आपको संरक्षण भर करना है स्टोरेज टंक बनाकर । घरोंम छत से आते पानी को नीचे स्टोरेज टैंक बनाकर इकट्ठा करके उसे वॉशिंग, सफाई, टॉयलेट व गार्डनिंग में इस्तेमाल कर सकते हैं । अलग -2 घरों में खपत के हिसाब से काफी समय तक इस्तेमाल किया जा सकता है । गुजरात और नॉर्थ ईस्ट के कुछ हिस्सों में तो इसका इस्तेमाल पीने के लिए भी हो रहा है । इसका इस्तेमाल इंडस्ट्री में हो सकता है ।

रेन वॉटर हसर्वेस्टिंग

पानी बचाने का दूसरा तरीका है कि बहते पानी को वापस जमीन के नीचे पहुंचा दिया जाए ताकि रीचार्ज होने से ग्राउंड वॉटर का लेबल ठीक हो जाए । इसके लिए घर के नीचे पक्के गड्डे बनाकर उनमें रेत, पत्थर, बदरपुर आदि डाल दें । इन गड्डों को छत से आते पानी से कनेक्ट कर दें । बारिश पानी गड्डे से सीधा फिल्टर होकर नीचे जमीन में जाकर रीचार्ज हो जाएगा । ये गड्डे एक से डेढ मीटर चौड़े व एक डेढ मीटर गहरे हा सकते हैं । नई बिलडिंग बनाते वक्त ही इनकी योजना बना लेनी चाहिए । वैसे एसा पुरानी बिलडिंगों में भी किया जा सकता है । चेन्नई में सूखे जैसे हालात पैदा होने के बाद यह तरीका वहाँ तो आज कुछेक एरिया के अलावा वहाँ के भूमिगत जल के लेवल में काफी सुधार आ गया है । वॉटर रीचार्ज करने के कई और फायदे हैं । मसलन बरसात में जगह-2 पानी भरने की समस्या से निजात पाई जा सकती है क्योंकि जब पानी जमीन में उतरा दिया जाएगा तो यहाँ वहाँ जमा होने के लिए पानी रहेगा ही नहीं । पानी इकट्ठा होने से होने वाली सडकों की टूट फूट कम हो जाएगी । पानी भराने से मच्छर मक्खी के पनपने और डेगू आदि बीमारियों पर रोक लग जाएगी । दिल्ली की जमीन की नेचर ऐसी है । कि ज्यादातर एरिया के ग्राउन्ड वॉटर में नाइट्रेट, फरोराइड और कैल्शियम मैग्नीशियम सोडियम खारीपन व भारीपन अमोनिया और अपायरन आदि केमिकल अधिक है । इससे धीरे धीरे दांतों व हड्डियों का टढ़ापन ,पेट की, जोड़ों के दर्द और नर्वस सिस्टम की बीमारियाँ पापने करने लगती है । ज्यादातर लोग पानी साफ करने के आर ओ और वाटर प्योरफायर जैसे सिस्टम लगा रहे हैं । लेकिन वॉटर रीचार्ज के जरिए जब हम बारिश का पानी जमीन में पहुंचाने लगेंगे तो ये रासायनिक तत्व भी कम होते जाएंगे क्योंकि बारिश के पानी में ये तत्व नहीं होते । बारिश का जल अमृत होता है । शुरु की दो तीन बारिशों का पानी इकट्ठा न करें क्योंकि तब उसमें अशुद्धियाँ भी होती हैं ।

वेस्ट वॉटर रीसाइकलिंग

घरों में इस्तेमाल हो चुके पानी का करीब अस्सी फीसदी पानी सीवेज में बदल जाता है जिसे लोग बहा देते हैं । लेकिन कुछ ट्रीटमेंट के बाद बाथरूम और किचन से आने वाले इसी पानी को गार्डनिंग फलशिंग और घर की सफाई आदि कामों में दोबारा आसानी से इस्तेमाल किया जाता सकता है । ऐसा करने से भूजल और सरकारी लाइनों से आते पानी पर दबाव कम हो जाएगा । यह एक लंबी अवधि का हल है जिसे साल भरन इस्तेमाल किया जा सकता है । इससे पानी की कमी पूरी होगी ही नदियों में गंदा पानी जाने से बच जाए तो यमुना को साफ करने का अभियान भी आसान हो जाएगा ।

कुछ और कारगर नुस्खे

अगर हम अपने इस्तेमाल के तरीकों में बदलाव करके वॉटर एफिशियंट मकनीकों का इस्तेमाल शुरू कर दें तो पानी की काफी बचत की जा सकती है । गाँवों में शहरों के मुकाबले कम पानी यूज होता है । वहाँ चालीस लीटर प्रति व्यक्ति खर्च है तो कस्बों में सत्तर लीटर जबकि शहरों में एक सौ पैतीस लीटर प्रति व्यक्ति रोजाना । दिल्ली में यह आकंड़ा दौ सौ ग्यारह का बताया जाता है । सबसे ज्यादा खर्च टायलेट फलशिंग , कार वाशिंग और गार्डनिंग आदि में होता है इसके अलावा बाथटब और शावर के इस्तेमाल नलकों और पाइपलाइन में होती लीकेज से सभी सबसे ज्यादा पानी वेस्ट होता है । एक एक बूंद टप-टप करके कई लीटर पानी बह जाता है ।

अगर हम बाल्टी से नहाएँ, ब्रश और शेव के वक्त नल बंद रखें, कार को पाइप की बजाय बाल्टी से साफ करें पानी की काफी बचत हो जाती है । किचन में डिश वॉशर भी खर्च करते हैं । पानी, उन्हें बाहर करें । कई नलों में फुल स्पीड से पानी आता है । पर कम प्रेशर वाले नल या टैप यूज करने से ऑटोमेटिकली खपत कम हो जाती है । फलश के लिए कम स्टोरेज वाली टंकी इस्तेमाल की जानी चाहिए । अगर आपके यहाँ फलश का टैंक बड़ा है तो उसमें ईट या पानी की बोतल डाल दें तो उससे टैंक में कम पानी ही भर जाएगा । घर की सफाई के काम में भी बचत कर सकते हैं । गार्डनिंग में पाइप की जगह ड्रिप इरिगेशन का इस्तेमाल पानी बचाता है ।

Messages

This magazine is quite informative regarding the progress done by the panchayats in their respective areas.

Mahesh Kumar Verma, Secretary, Nehru Yuva Mandal Akarra Rasalpur Samiti, Shahjanpur

यह पत्रिका संस्था कार्यकर्ताओं के पंचायत सम्बन्धी कार्यों के लिए मार्गदर्शक है।

राजकुमार जखारा, संस्थापक, सर्व विकास मंडल शिक्षण संस्थान

This magazine is a collection of knowledge and development on the whole.

Sanjay Singh Chauhan, Ex. Secretary, Parivartan Samiti, U.P.

Magazine gives a lot of works for the panchayat level announced by the government of India and the State of India.

Satya Ranjan Raut, Secretary, Society for Community Organisation and Training

This magazine is a useful source to the social workers as well as voluntary organizations.

A. Mariadoss, Mulipurpose Community Development Society

Panchayat special issue is very useful for NGO sector related to environmental education.

Dr. A. Noor, Assoc. PROFESSOR Erthonology and Master Trainer, Agricultural Research Station, Jodhpur

पत्रिका में प्रेषित लेखों द्वारा पर्यावरण संरक्षण की दिशा में किए जा रहे कार्यों का पता चलता है।

शंकर सिंह शेखावत, अध्यक्ष, ग्राम सुधार एवं विकास समिति, खेजरोली

Role of Panchayats in Environmental Management

ENVIS Newsletter

Glimpse of the Website

www.iesenvis.nic.in

ENVIS CENTRE ON ROLE OF PANCHAYATS IN ENVIRONMENTAL MANAGEMENT

The website has compiled all the relevant data and comprehensive information on different components of Panchayati Raj and Environment. The website contains information on databases developed; geographical distribution of Panchayats; success stories, areas of Panchayati Raj co-operation; elections, finance, query services; bibliography; resource repository etc.

We hope that the information contained in the website will suffice your requirements.

We would appreciate your comments & suggestion about the website so that we can update it as per the requirements of our browsers.

Wish you a Happy browsing on www.iesenvis.nic.in

The Centre invites for Publications :

- Reports on Panchayati Raj (specially related to environment) and rural development
- Short report on seminars/workshops on the related topics are also invited. Those found suitable will be published in the newsletter.
- Articles for the newsletter "Panchayat" are invited.

Forthcoming Events

- **GLOBE Teacher's Training Program**, at Conference Room, Delhi Secretariat, Delhi during February 17-19, 2011.
- **Celebration of World Forestry Day**, on March 21, 2011
- **Celebration of World Water Day 2011**, on March 22, 2011
- **GLOBE Teacher's Training Program**, at Conference Room, Delhi Secretariat, Delhi during April 18-20, 2011.
- **GLOBE Teacher's Training Program**, at Shimla, Himachal Pradesh during May 2011.
- **Celebration of World Environment Day**, on June 5, 2011
- **Second Ecology Learning Expedition to Kathmandu**, Nepal, Kathmandu, Nepal during June 9-12, 2011.
- **Conference on Earth Science and Climate Change Research**, at the International Centre, Goa, India during September 25-28, 2011.
- **Train the Trainer Workshop on Carbon Cycle**, at Delhi during August 17-19, 2011

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To
