

## *ABSTRACT*

### *Water is the Elixir of Life*

Underground water is one of the key earth resources. Unfortunately, this resource has been depleting at an alarming rate. It is a matter of great concern. Water is indispensable for not only human beings, but for animals and environment as well. Due to increasing use of water for various domestic, commercial and agricultural purposes, water table of all over the world is going down at an alarming rate. People are not aware that the decreasing level of water is also one of the reasons of global warming. Scientists are of the opinion that the world will soon become a desert due to the lack of proper management of underground water resources. In some parts of the country like Punjab, Himachal Pradesh in India it has been reported that due to the decreasing underground water level the trees and forests have been destroyed. Protecting water resources is vital for the conservation of all species which are extincting very fast.

Considering the gravity of the situation, I have innovated some useful techniques/ideas of rainwater harvesting to increase the underground water resources, which is useful not only to India but to the entire world. The techniques/ideas which I have highlighted in my project “Increasing Underground Water Resources”, have been recognized by the government of India, UNEP and other organizations worldwide. Some of the eco-friendly techniques are Funnel System, Polythene cover System, Less Water for Plants-Growing plants in sand, gravel, liquid without adding soil, Pits/ recharge well system, etc. These techniques/ideas are universally applicable, globally novel, cost effective, eco-friendly, and utilitarian. I am the innovator and working on the project since 2006 and creating awareness for the conservation and preservation of precious water in the world through my innovations. I have highlighted the devastating impact of the decreasing level of the underground water level and succeeded in bringing this burning issue to the public notice and received worldwide appreciations and awards. My project was displayed in the International Project Gallery-2007 by the UNEP (Volvo adventure) at Goteburg, Sweden. The Pogo channel has telecasted it on November 12, 2006 and it has been displayed in the [smk.org.uk](http://smk.org.uk) and TakingITGlobal Website. The project has been sent to UNO, UNDP, UNICEF, WB, Water aids UK, and international organizations and countries with the appeal to adopt these useful technologies to save precious water. Recently my paper has been selected by the Working Group on Global Warming for their international conference & Expo10 at, London, UK to present at the conference in Nov 2010 .

*“Even Small Tips can do wonders to conserve water”*

*By: Priya*

PROJECT ON  
HOW TO INCREASE THE GROUND WATER LEVEL  
BY:- PRIYA



*Model*

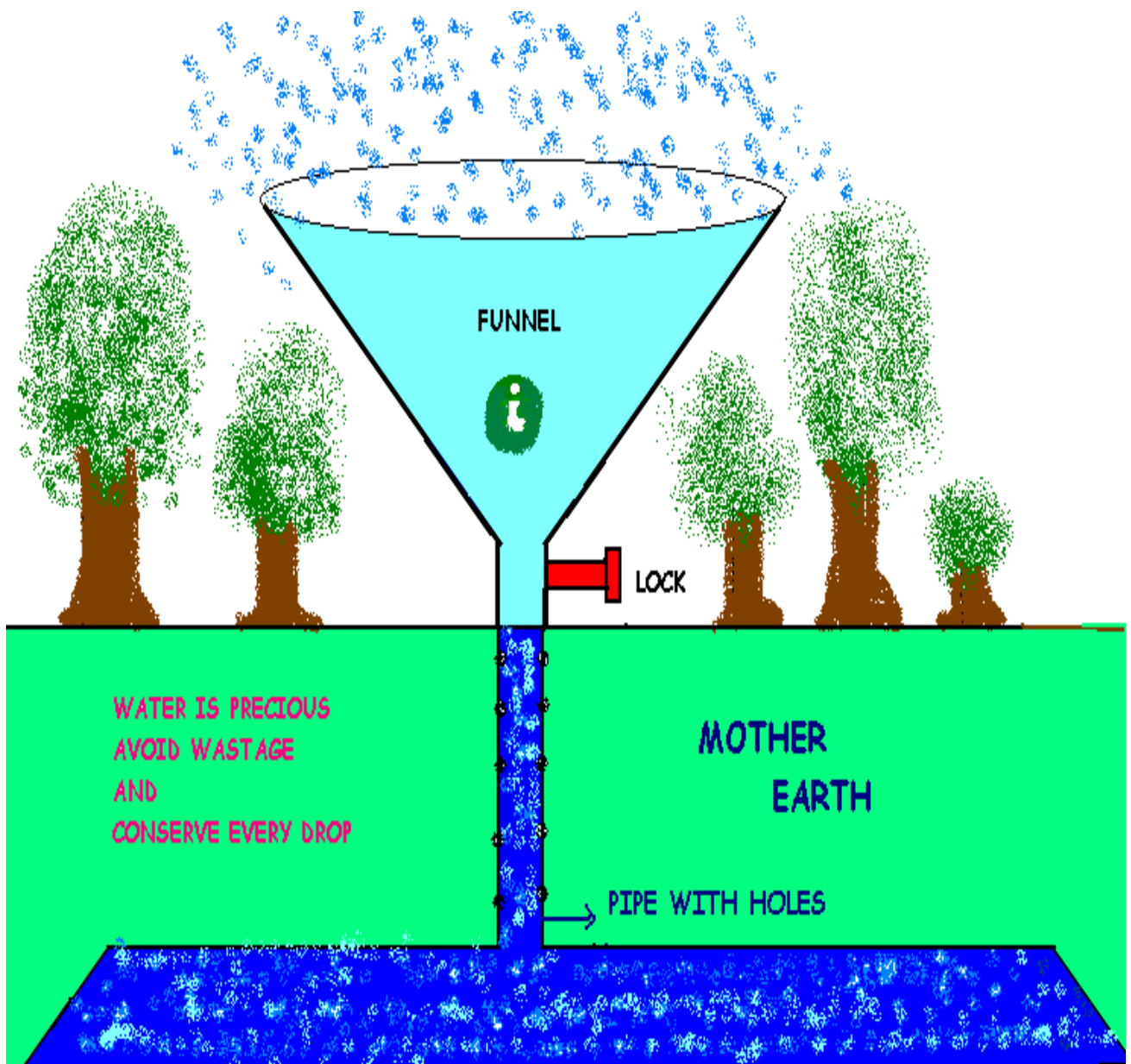
**THE FUNNEL/BEAKER SYSTEM:** *This unique and simple system of Rain Harvesting is developed by me.*

Our Water Resources are limited. Due to over pumping and wastages the groundwater level is decreasing day by day which will have a devastating effect on the earth and our water resources. We should take all precautionary measure to save our groundwater resources. I would like to give a few suggestion/ method which will be useful to preserve the ground water level as well as useful for rain harvesting if implemented seriously. This system is known as the **FUNNEL/BEAKER SYSTEM** as shown in the above picture.

In this system large funnels are constructed in the areas to collect the rain water to increase the ground water levels. The funnels are permanently connected with single pipes or with multiple pipes with holes dig deep inside the earth. When rain water is collected in the funnels it automatically goes inside the earth through the pipes/holes and absorbed

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## *FUNNEL/BEAKER SYSTEM OF RAINWATER COLLECTION*



**INCREASING UNDERGROUND WATER LEVEL**

Concept / Model By PRIYA

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into the ground or the water can be discharged directly from funnels to the bore wells 100'-200' or more deep specially constructed for this purposes. This method is cost effective and can be applied any where in the world. Once huge funnels are constructed, it can be used as a useful source of collecting rain water which can be used to increase the ground water level and can also be used as a water storage tanker when there is no rain. This method can be used every year for the rain water harvesting and the funnel can be used for many years without any extra cost. Concrete structure is durable, useful and cost effective. This system is also useful for the collection of rain water from the roofs of the houses and buildings to minimize the wastage of rain water and helps the preservation of the water. Small funnels can also be constructed on the top of the buildings to collect rain water and can be connected with the huge funnels to store water. If this method/idea is put up into use to preserve our water resources in different areas it will definitely help for a better rain harvesting system and better use of water management in our country and unused bore wells/ abandoned wells can be reused with out any extra costs. This is a useful and non polluted method to increase the underground water resources in the world.

Refer for model at Page 1 & 2.

This is another method to increase the ground water resources:-

SEE NEXT PAGE-->

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# RAIN WATER

## POLYTHENE SHEET/ WATER PROOF TARPULIN'S METHOD OF WATER CONSERVATION- A USEFUL AND SIMPLE METHOD

This technique is very simple, useful, cost- effective and can be applied by the common people to conserve rain water. In this method four poles/ bamboos are installed in the open ground and at the top of the poles polythene sheets/water proof Tarpaulins of big sizes are loosely tied with the corners of the four poles for the collection of rain water in the polythene sheets/ tarpaulins during the rainy season. As soon as the rain starts the rain water collected in the covers is directly discharged to the nearby bore holes measuring 60 ft. or more deep specially constructed for this purpose through the rubber pipe of the hanging cover/tarpaulins as shown in the picture/ model in the next page which will definitely increase the under ground water level and also avoid the wastage of rain water during the rainy season or this water can be poured in to the pits/ wells/tanks for domestic use. This method can be used again and again or permanently to collect rain water during the rainy season. This is a cheap and suitable method of rain water collection and can be adopted by the people to meet the requirement of the water for their household and other daily needs. Govt. and other agencies should provide adequate water proof covers/ tarpaulins to the people and encourage them to adopt this cheap and suitable technique to conserve rain water everywhere. Besides this all unused/abandoned bore wells/wells can also be reused by the people to collect water and to increase the underground water resource which is again cost effective. This method is useful to:

1. Where rainfall is uneven and effective during the rainy season.
2. This method is useful in the Desert and Hilly areas.
3. Where the underground water is significantly low.

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4. This is a useful & Cost- effective method and for the common people.
5. This method can be applied anywhere in the world.
6. This method reduces the wastage of f rainy water and increases the Under- ground water resources.
7. This method is useful to the area where other method is not feasible i.e. hilly areas etc.
8. This is a cost effective and useful method to the poor people to conserve water at their homes.
9. This is a useful method of rain water harvesting.
10. Reduce ground water pollution.
11. Improve quality of underground water.

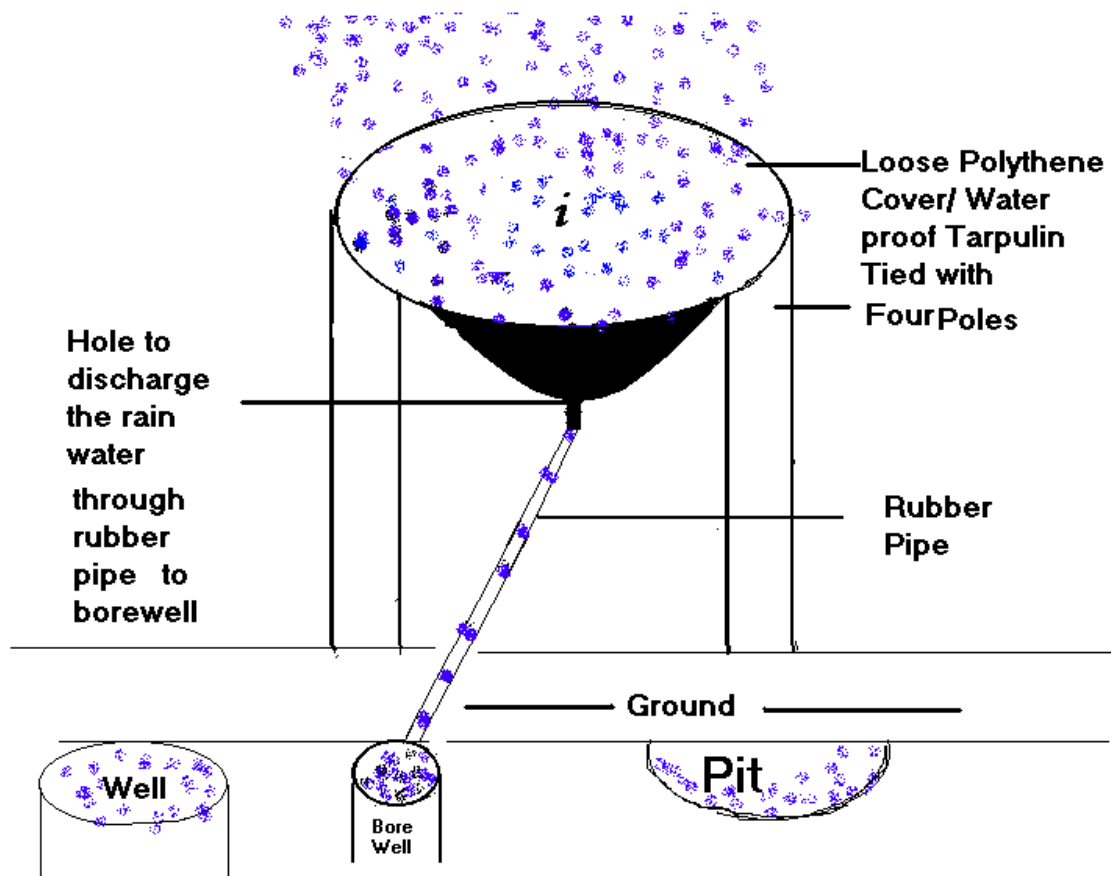
No uniform prescription can be made for all areas. The approach to development and management of water resources has to be area specific and must involve local people.

*Refer for model/ Picture in the next Page-→*

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# RAIN WATER

Collection Through Polythene Sheet/ Water Proof Tarpaulin  
A useful and Cost -effective Method to Conserve Water  
Model



Concept / Model by PRIYA

This is another method of conserving underground water:

### **PITS/RECHARGE WELL SYSTEM**

A large pit should be constructed together with an injection well water flow from the fields is directed towards the pit. The decanted water is directed to flow into the injection well. The injection well is bore of 8" dia or 10" dia perforated by a pipe. The water passing through the bore holes will be immediately absorbed into the ground. The depth of the pipe injection bore depends upon the water strata available under the ground and it is normally 100' to 200' or more. This procedure can also be adopted in the rain water harvesting of the water stored in the roofs and the verandahs of the buildings. The same way the water is directed towards the pit holes and recharged through the injection well in the underground strata of water.

This procedure can be adopted in the cities where a large amount of water collects during the rainy season and are wasted without proper water management. Pits should be constructed near roads where water collects without proper drainage system. The water passing through the pipe/bore holes will be immediately absorbed into the ground which will definitely increase our ground water levels. This technique is very useful in towns and cities having many roads and causes traffic jams frequently during rainy season. Besides using the waste water effectively it will also solve the drainage problems in the cities near roads

### **New method reduces water for Agriculture:**

This is another method of water conservation for growing plants:

A new method of growing plants by a US-based lab could reduce freshwater consumption dramatically as it require only one-hundredth of the water usually needed, signaling new hope for an increasingly parched world.

According to the US Department of Energy's National Nuclear Security Administration Laboratory Sandia Corporation, the method of hydroponics- growing plants in sand, gravel or liquid without adding soil with nutrients- would help to reduce freshwater consumption by using roughly one-hundredth the fresh water customarily needed for plants.

This would leave the rest for human consumption, as well as for residential and the industrial uses. Water saving is of particular interest in



New Mexico, Southwest America, Mexico and water parched region like Middle East, India and Pakistan.

In addition there are like drip irrigation and sprinkler irrigation results into watering the plants as its grass root level and there is lot of saving of water, as the water is not wasted due to penetration in the ground. Similarly, open drains should be avoided and all the water should be passed through the pipes to avoid the seepage of the water and proper utilization of the water for the crops. This system will also avoid unnecessary weed.

This process can be achieved by the involvement of gram panchayats in the towns, villages and by the local bodies in the cities with the active cooperation with the peoples and the govt. and by educating people the proper use of water management at the grass root level. Besides these tips like efficient use of drinking water and avoid wastage of water such as direct taps should not be used for washing of clothes, running of water in tapes while not in use, bucket should be used while washing of utensils, clothes etc. Taps should not be left running without use otherwise this slogan will come true "***WATER WATER EVERYWHERE NOT A DROP TO DRINK ANYWHERE***".

Due to global warming and the green house effect the climate of the world is changing fast and has a bad effect on our eco system and our water resources. We should chalk out strict plan to control the pollution to save the environment and water resources.

Such plants and trees should be grown which requires less water consumption.

Rivers, lakes over flooding during rainy seasons should be identified and overflow should be controlled with proper mechanism to avoid loss s water, life and the property of the people around the world. Flood water should be preserved by constructing Dams, Lakes, Water Tanks, Water- sheds and should be recharged into the bore wells to increase the ground water levels.

The ground water table is dropping in the almost Indian States due mostly increased ground water abstractions. The largest volume of the abstraction is directed to the agricultural sector for irrigation. Yet at present there are neither legal nor economic controls nor political will to

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address the situation. There are neither licensing arrangements for bore hole drillings nor requirements for obtaining a water for abstracting groundwater. The situation is in desperate need of the *Blue Revolution*, an integrated approach to water management.

The main feature of India's water reserves is unequal distribution, leading to floods, draughts. The much maligned river linking project is one answer to the problem. From past experience within the country and abroad water professionals have been insisting on creation of major, medium and minor storage and inter-basin transfer of water from surplus to deficit basins to even out the variations of water availability in space and time, and to facilitate equitable distribution and optimal utilization of his precious resources.

The critics of large projects seems to be unaware of the fact that in a scenario of unlimited duration, small storages would dry up unless these are supplemented by major/ medium projects. The skeptics are also forgetting that long- distance water transfer is a mean to end human sufferings from frequent drought and floods. Huge quantity of water are being allowed to get lost (evaporation, deep percolation etc.) or wasted (excessive, Irrigation, rising water table/ water logging) at the farm level, mainly because negligible awareness or realization (water illiteracy) of the farmers to properly adopt recommended site/ crop specific water management practices, which in turn result in rather low water- use efficiency. Surprisingly while we are fighting generating additional water resources (by putting in a huge expenditure) hardly any concern is expressed about the conservation of existing water resources necessity of their efficient utilization at the farm level.

The first line of attack should be to create a huge movement on water literacy by increasing awareness of the people, imparting training and skills to the farmers improving irrigation schedules (when and how much to irrigate) and technologies for improving water use efficiency under different crops or cropping system are available, yet their adoption at the farmer level is rather inadequate. The technologies for water (rain) harvesting and moisture, conservation in the soil has also remained grossly un-adopted in rain-fed areas. Similarly technologies for efficient management of poor quality saline/ alkali (blackish) ground water have not been properly understood and adopted by the farmers.

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Drip system, Sprinkle system and shower system is a effective system of water conservation in watering pots, gardens farms Etc. Need for artificial recharge to augment fresh water resources, which is becoming scarce every year due to the falling water levels and deterioration of discharging untreated effluents and sewage waste. Increasing irrigation efficiency is one of the best alternative to save water and modern irrigation methods like Drip system, Sprinkler and Shower system is Recognised as the most efficient methods of irrigation , which save water and at the same time enhance the quality and quantity of fruits and vegetables. This system is suitable for irrigation of plants grown in rows like horticulture and vegetables and cereal crops and 30 -40 % of water can be saved.

The apprehension of a drought and the depleting water table has revived an interest in our time tested technique of water Conservation. Some of the popular techniques in the regions are: Zings, Kuls, Nawa, Khatri, Khuls, Khuds, Zobo, cheo-Ozihi, Bamboo drip irrigation, Dongs Dungsor, Jampois, Ahar Pynes, Dignis, baolis(step wells),Apatani, Vidras, Katas/ Mundas/ Bandas, Surangam, Korambus, Jackwells, Kunds, Kundis, Kuis/ Beris, Baoris/Bers, Jalaras, Nadis, Tobas, Tanks, Khadin, Vavdi/ baoli/ Bavadi, Paar and choe systems are used in the different part of India. These local techniques should be encouraged to conserve water.

### **INCREASING THE UNDER GROUND WATER LEVEL SOME MORE IDEAS/SUGGESTIONS**

- 1. Govt. Should make a ground water preservation board at national, regional and local level.**
- 2. Whose primary duty is to advise, guide, preserve and maintain the minimum ground water level of a area.**
- 3. Ground water levels should be measured at different intervals at different areas.**
- 4. Meters should be installed at different locations for measurement of water levels of different areas.**
- 5. People help should be taken to preserve the minimum water levels of the area.**
- 6. Awareness should be created among the masses to preserve the under ground levels.**
- 7. Regular static's may be collected and information may be disimented to all concerned/ public.**
- 8. Satellite based information system should be developed**

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to collect the statistics of the ground water levels of the different areas.

9. A close coordination is required with the local weather departments with the ground water preservation authority.

10. Excessively boring and pumping of water should be stopped.

11. Instead of pumping of water other means of irrigation should be adopted and encouraged.

12. Rain water harvesting should be adopted and encouraged in hilly and desert areas.

13. Rain water should not be wasted it should be collected and used wisely.

14. Areas of low ground water levels should be identified and master plan should be drawn to increase the level

of ground water levels to the specific areas.

15. Rain water harvesting and artificial recharge is a very effective techniques for ground water management.

the main benefits of rainwater management are:

- \* Raise the ground water levels.
- \* mitigates the effects of drought, makes land drought proof.
- \* reduces the soil erosion
- \* ideal for areas having inadequate water resources.
- \* reduces choking of storm water drains and flooding of roads.

16. Govt. Should make rain water harvesting mandatory.

17. As per the study ground water level is dropping at the rate of 3 meters and more every year.

18. The ground water level could be raised through rain water harvesting. Govt. Should make a provision in the

building by laws making the rain water harvesting compulsory in roof tops of all buildings.

19. Dual piping system, providing separate pipes for water to be used for drinking and other purposes like bathing

washing etc. For later surface water can be tapped using shallow water tube wells.

20. Rain water movement should be launched in the country. Workshops, seminars conferences should

organised and people should make aware of the importance of preservation of the water.

21. Efficient storm water drainage systems should be built

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in cities, towns and villages to stop flooding of rain water .

22. Water is indispensable for satisfying the basic needs, health , food production, energy and maintenance of

regional and global ecosystems. The need of the hour is to conserve the water resources, improving

- irrigation efficiency by using innovation, low cost small technology, recycle waste water management, pollution free water management, avoiding waste dumping in rivers, ponds, streams etc. And rain water harvesting are some the measure taken on a war footing. So as to conserve this precious and resources for use on a sustainable basis and preserve it for prosperity.
23. Man should individually and collectively should resort to the traditional rain water harvesting systems and harmonize them with new technologies and knowledge.
24. With the falling ground waterlevel and on going global weather changes water has become scarce commodity. This has made the availability of water resources even more important. In a country like india where rainfall pattern is variable, water resources like underground tanks serves a boon.
25. Adoption of water management techniques for higher agricultural output through lesser use of water.
26. Dew harvesting should be adopted in the desert areas.
27. Snow harvesting should be encouraged in snow bound areas.
28. Ground water monitoring system should be adopted which should monitor the surface water, rivers, rain water and glaciers etc.
29. Ground water should be the property of the nation and strict laws should be enforced for its use by the govt.

### SOME USEFUL TIPS/ METHODS TO CONSERVE WATER

- \* AFTER USING TAP CLOSE IT TIGHTLY.
- \* HAVE A BATH WITH A BUCKET INSTEAD OF HAVING A SHOWER OR USING A TUB.
- \* DO NOT LEAVE THE TAPS RUNNING WHILE WASHING CLOTHES,UTENSILS WHICH WILL SAVE 10 TO 20 LITRES OF WATER.
- \* DO NOT USE DRINKING WATER TO CLEAN YOUR VEHICLES.
- \* DO NOT LEAVE TAPS RUNNING WHILE BRUSHING AND SHAVING. IT WILL SAVE 20 TO 30 LITRES OF WATER.

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- \* NO WATER TAPS/PIPES SHOULD BE LEFT LEAKED IT SHOULD BE GET REPAIRED TIMELY.
- WATER RESOURCES ARE UNDER TREMENDOUS PRESSURE BECAUSE AVAILABLE WATER RESOURCES ARE SHRINKING AND DEMAND FOR WATER IS INCREASING. THEREFORE EFFICIENT MANAGEMENT AND UTILIZATION OF AVAILABLE WATER IS THEREFORE OF CRUCIAL IMPORTANCE. THE NEED OF THE TIME IS TO

**DEVELOP AWARENESS INTO A MASS MOVEMENT SO THAT THE ELIXIR OF LIFE IS AVAILABLE TO THE FUTURE GENERATIONS FOR THEIR SUSTENANCE AND PROSPERITY.**

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***"DON'T PLAY WITH WATER, WATER IS PRECIOUS  
CONSERVE EVERY DROP, WATER IS LIFE GIVER".***

**MADE BY:**

**Copyright with Priya  
PRIYA (INNOVATOR &  
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**Note:-**

**This project has been recognized worldwide and posted in SMK.org/uk, TakingITGlobal, teen for planet earth, JaneGoodall's Institute etc. and displayed in Project Gallery of UNEP at Sweden.**

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