

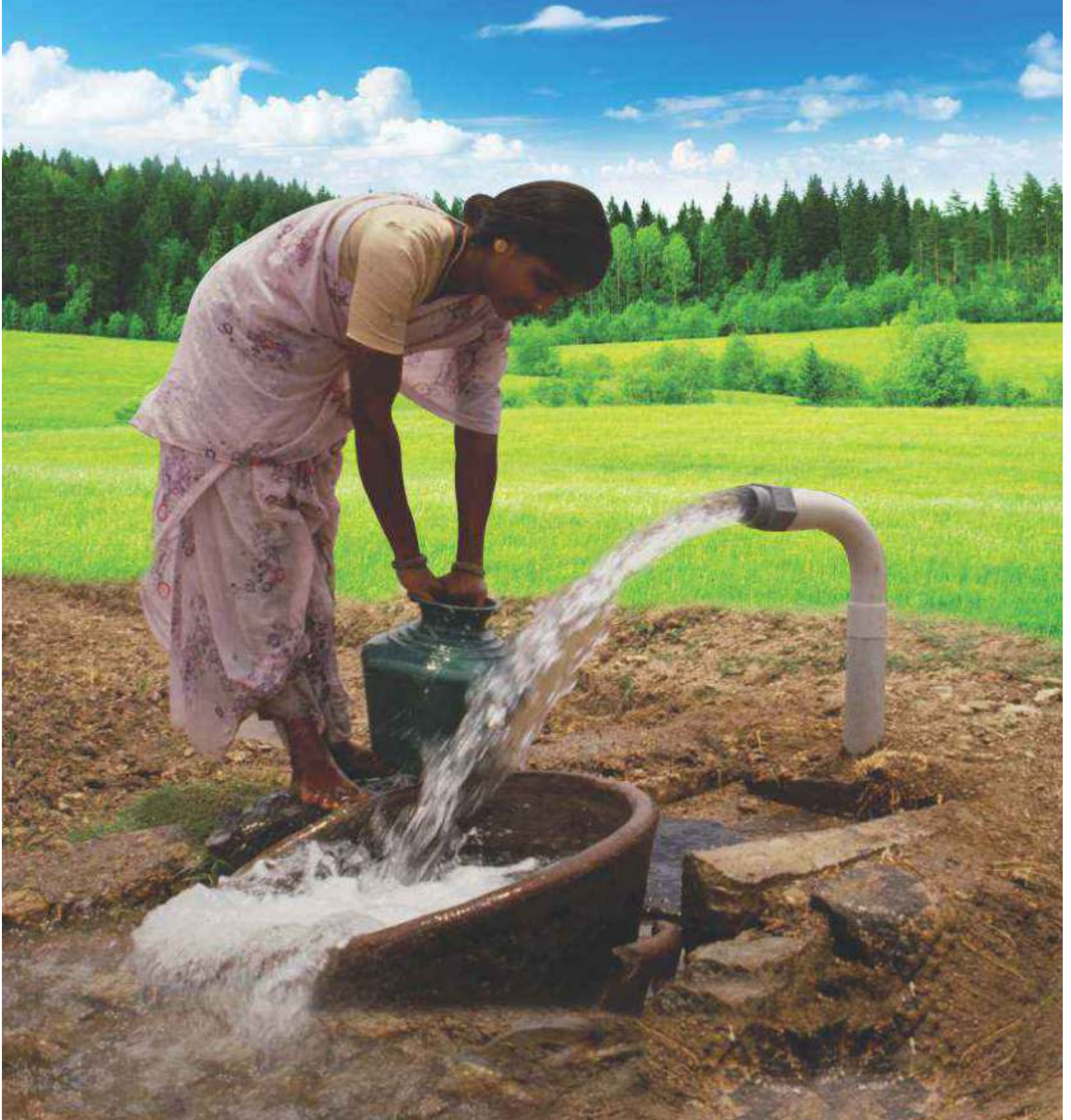


AQUALINE BHUNGRU

पानी की खेती



Founders : Rathin Bhadhra & Raja Bagchi



BACKGROUND OF AQUALINE BHUNGRU

"AQUALINE BHUNGRU" A GOVERNMENT OF JHARKHAND REGISTERD CONCERN & GOVERNMENT OF INDIA RECOGNITION UNDER "NITI AAYOG", MSME deals in geo hydrology based unique scientific technology for storing rain water into subsurface zone of earth for augmentation of groundwater & return it back in lean periods for DOMESTIC, AGRICULTURAL & INDUSTRIAL USES. FOR ITS uniqueness JHARKHAND GOVERNMENT HAS CHOSEN IT UNDER JHARKHAND INNOVATIVE FORUM & GOVT. OF INDIA IN NITI AAYOG.

The word "AQUALINE BHUNGRU" is derived from BHUNGRU MAHADEV or BHUNGRU DEVTA, an ancient God of Adivashis. BHUNGRU MAHADEV is another name of LORD 'SHIVA'.

According to Hindu Mythology, Goddess river Ganga originates from matted hair of LORD 'SHIVA' and flows through Indo-Gangetic plain of India to bay of Bengal. Pure and holy water of river Ganga brings prosperity to millions of Indians who live along its course and depends on it for their daily need.

In the same way, fresh, clear and light water from "AQUALINE BHUNGRU" also brings prosperity to people living in it's surroundings.

It is well tested environment friendly disaster alleviation technology that purifies, injects and reserves rain water or excess farm water or storm water below the surface of earth for lean period uses.

"This technology helps in disaster mitigation"

"It guaranties irrigation, as it ensures adequate water for irrigation during lean periods"

"AQUALINE BHUNGRU" requires minimum 6 feet x6 feet surface area to percolate excess rain water into suitable subsoil strata of earth to preserve rain water with help of 4 to 10 inch diameter pipes.

Each unit of this technology ensures adequate amount of water during lean period for domestic, agricultural and industrial uses, starting from one to five million liters of water each year depending upon Geological condition of particular place.

This technology provide two dimensional supports to farmers, first, ensure more water for standing crops in summer, second, de-flood the farm land during monsoon.

NECESSITY OF AQUALINE BHUNGRU

Fresh water accounts for only 2.5% of total Earth's water. Of this fresh water, 68.9% is in the form of ice and permanent snow cover in the Arctic, the Antarctic, and mountain glaciers. 30.8% is in the form of fresh groundwater. Only 0.3% of the fresh water on Earth is in easily accessible lakes, reservoirs and river systems.

The dependence on ground water as a reliable source for meeting the requirements for irrigation, drinking and industrial uses has been rising rapidly during the last few decades in India. Ground water development has occupied an important place in Indian economy because of its role in stabilizing agriculture and as a means for drought management.

The rapid urbanization and deforestation have considerably reduced the groundwater recharge in many parts of the world. The reduction in groundwater recharge and over exploitation of groundwater due to increasing demands, the groundwater table has been depleted into critical stage in many parts of the world.

Over- dependency on ground water resources results in declining of ground water levels and acute scarcity of the resource, shortage in water supply, intrusion of saline water in coastal areas.

For example, the groundwater table in some parts of Delhi has been depleted by 20 to 30 meters in a span of 60 years. Same is the condition in other major cities in India and other parts of the world.



This will have serious implications on the sustainability of agriculture, long-term food security, livelihoods, and economic growth. It is estimated that over a quarter of the country's harvest will be at risk. There is an urgent need to change the status quo.

"HERE COMES AQUALINE BHUNGRU IN PICTURE"

WHY AQUALINE BHUNGRU

"AQUALINE BHUNGRU" plays a very significant role FOR augmentation of ground water level in particular area, as each unit of Bhungru preserves the amount of rain water that can provide irrigation water for 15-20 acres of farm land for 3-6 months, provided that the area should have the annual rainfall in between 500 mm to 2100 mm.

Delayed or insufficient rain as well as critical groundwater conditions many times results in high crop failures with big financial losses to farmers and these situations several times compel farmers either to commit suicide or to migrate to cities and towns as daily laborers. "Aqualine Bhungru" (भुंगरू) helps enormously in reducing migration and suicides of farmers.

WORK DOMAIN OF AQUALINE BHUNGRU

"AQUALINE BHUNGRU" delivers services in waterlogged areas, drought prone areas as well as in areas affected by erratic rainfall. It also works in salt affected soils as well as seasonally eroded soil.

"AQUALINE BHUNGRU" can work in those areas where annual rainfall is between 500 -2100 mm. It is tailor made solution based upon different geophysical conditions of particular area.

"AQUALINE BHUNGRU" needs minimum 5-6 inch of water height at its suction level to function appropriately. "Aqualine Bhungru" provides maximum storage of water where subsoil formation is permeable and hungry within depth of 125 meters.

Around 6.5 million hectares of land in India are affected by salinity and seasonal water-logging and 5 millions of small and marginal farmers are adversely affected due to that.

"AQUALINE BHUNGRU" not only provides relief from seasonal water-logging, but also provides same stored water back for lean periods. Multiple Bhungru can work wonder in flood situation.

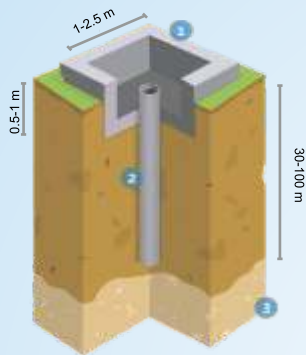
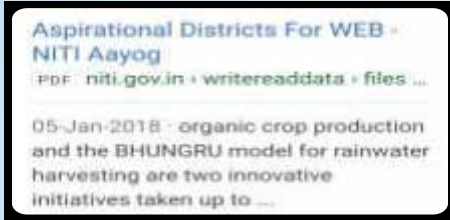
OTHER ADVANTAGE OF AQUALINE BHUNGRU

1. No land is wasted for storage purpose and No population displacement is involved.
2. Groundwater is not directly exposed to evaporation and pollution.
3. Reducing groundwater salinity in agricultural areas.
4. Easier access to water when it is nearer to the surface—reduces pumping costs.
5. Reducing land subsidence caused by high pumping rates.
6. Recharge methods are environmentally attractive, particularly in arid regions.
7. It reduces flood hazards.
8. Recharge can increase the sustainable water yield of an aquifer significantly.
9. Mitigates effects of drought.
10. Reduces soil erosion.
11. preventing seawater intrusion by creating freshwater barriers.
12. It reduces hardness of groundwater.
13. The cost of recharge to sub-surface reservoir is lower than Surface reservoir.



RECOGNITIONS : "Aqualine Bhungru" has won many awards/recognitions and laurels like - Environment Protection Award from Rotary, Environment Benefit Award from BDPA, Recognized for Climate change mitigation by Bengali Association, Govt. of Jharkhand under Innovative Jharkhand and Govt. of India under "NITI AAYOG", MSME.

THE AQUALINE BHUNGRU : The technology is open source so that is scalable in other places. Bhungru (भुंगरू) does have a non-negotiable principle, however that the technology should be used by poor people only.



1. the land on which the unit is made has a slight tilt or gradient to ensure drainage through the pit. The cemented area of the pit is usually 1 to 2.5 meters in depth.
2. The pipe has a diameter of 10 to 15 centimeters, and goes to a depth of 30 and 100 meters.
3. The subsoil strata must have a coarse sand soil layer within a depth of 120 meters.



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