



Clean Water Supply in Rural India - Initiative

The lack of safe drinking and electricity in rural areas in India is extremely alarming and together with processing climate change and political conflicts, increasingly impairing economic development. Water supply for drinking and domestic uses is an essential basic requirement for households and communities. Unlike in large urban settlements, for small communities in rural and outback areas conventional methods of water sourcing, extraction, and supply are not cost effective. Especially so in the rural areas of developing countries, which need simple, alternative methods to satisfy their domestic water needs. Water supply to such rural communities can be sourced from rainwater, groundwater or spring/surface water. Through simple rainwater harvesting techniques, household as well as community needs for water in arid and semi-arid regions, where no other water sources are available or feasible, can be met. Groundwater is, by far, the most practicable choice for safe water supply. In areas where groundwater is not available in adequate quantities, the next best available option for water supply is from surface water sources. Often, surface water sources are more contaminated than groundwater, which necessitates treatment of water and hence increases the costs of water supply projects. There are simple treatment methods available to provide minimal levels of treatment to produce safe water free of microbial contamination. Depending on the quality of raw water, a treatment method can be selected from a limited choice of low-cost treatment methods to achieve better water quality .

Less than 50 per cent of the population in India has access to safely managed drinking water. 200,000 people in India die every year because over 70% of water that's available to them is contaminated. Chemical contamination of water, mainly through fluoride & arsenic, is present in 1.96 million dwellings. The ground reality is that of the 1.42 million villages in India, the water resources of 195,813 villages are chemically contaminated. The quality of ground water that accounts for more than



providing drinking water to rural populations in the habitation are: 40litres per capita per day (lpcd), 30 lpcd additional for cattle in Desert Development Programme (DDP) areas, one hand pump for every 250 persons, potable water sources within 1.6 km in plains or 100 meters elevation in hilly areas.

Approximately 78 of the 138 million rural households do not have access to electricity services. Power supply in rural areas mostly relies on fuel-based power generators, and shortage of diesel, due to fluctuating costs or transport and delivery problems. Energy features play a dominant role in the water value chain, from (ground) water pumping for irrigation for food production and provision with drinking water and disinfection technologies

Sustainable concepts for solar energy driven drinking water supply

Solar water pumps are a relatively new concept in mechanics. A solar water pump system is commonly seen in residential and commercial uses, as well as for irrigation of agricultural land. Through solar panels, the pump can eliminate the cost of energy and provide a more feasible option that uses energy from the sun (and not fuel- burning mechanisms) for pumping water.

The first advantage of solar pumps is that they are reliable in regional and remote areas. A perfect example for the State of Punjab, most dominant region when it comes to most days of sun in the year. Deploying solar water pumps in Africa is, therefore, the perfect alternative to any other fuel-based sources.



Easy to transport and relocate, solar water pumps can be organized as per the needs of the farm and have extremely low operating costs. Both of these are major advantages, paired with their cost-efficiency in the long run, show that a solar water pumping system is the perfect solution for regions with sunny days.

A photovoltaic system, backed up by a battery will power the water tank , which has a maximum electricity demand of 10 kW/ 2500 habitants, provided by minimum of 8kW system delivering electricity all over the year.

So, the objective is to provide minimum One Splar Water Pump in each village which can provide drinking water supply for minimum of 2500 persons to maximum of 5000 persons in rural areas of Punjab.

To support this initiative,one can provide financial assistance to procure,setup and operate the solar Pumps .All are welcome to be part of this and support up in calling up and covering each village by setting up these Solar Pumps.