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Watershed Developments for Sustainable Food Production and Improved Rural Health in India
The Role of "GROWNET" - UNESCO-IUGS-IGCP Project no. 523)

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India –which has 16 per cent of the world's population, 2.45 per cent of the world's land area and 4 per cent of the world's water resources, already has a grave water crisis for irrigational and domestic use. The water availability per capita per year has dropped to 2,200 cubic meters. As a result, India is fast approaching a phase of stressed water availability. Watershed development through soil and water conservation techniques, through rain water harvesting recharge augmentation and through forestation of degraded watersheds is now closely related to the survival of about 162 million farmers, village labors and an equal number of cattle, living in the semi-arid hard rock terrain in central, western and southern India. Here the Monsoon rains are restricted to a few rainy days between June and September. It is therefore, necessary to harvest the monsoon runoff at farm bunds, farm ponds, stream bunds, underground bunds on streams and in artificial aquifers created by blasting of hard rock.

For harvesting runoff in rainy season and for percolation in the dry season it is necessary to construct small Percolation Tanks in mini- catchments or mini-watersheds. These are formed by constructing earthen bunds on small streams for impounding runoff and allowing the stored water to percolate and recharge the ground water body. The residence time of water in the mini-watersheds is thus increased from a few days (as surface water) to a few years (as ground water).It is then possible for the farmers to dig wells and give supportive irrigation to the crops in their small farm plots. The efficiency of the percolation Tanks is hampered by the silt, which accumulates in the tank bed, year after year. It is therefore, necessary for the beneficiary farmers to remove silt from the tank bed when the tank dries in the summer season. Soil conservation practices should also be followed in the watershed of a percolation tank in order to reduce the amount of silt coming into the tank. NGOs have an important role to play in this field.

Recharge augmentation through watershed management & construction of percolation tanks is one of the 'best practices' included in the UNESCO-IGCP Project no.523: GROWNET, for which the Author is Project Leader. The website of www.igcp-grownet.org has received over 29520 visits so far, indicating its

role in dissemination of knowledge. In areas where ground water salty or is contaminated by Fluoride or Arsenic dug wells near such percolation tanks give drinking water of improved quality. The Nexus between water availability, food production, rural economy, rural employment and rural health is thus completed through watershed management. Although the Paper is based on Authors experience in India, the conclusions are applicable to other low-income countries having semi-arid, hard-rock regions.