Use of rainwater harvesting for alleviating poverty in rural areas. ACSAD experience in the Arab region

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Abstract:

Water scarcity is considered one of the key challenges to agriculture and rural development in the Arab region. Freshwater share per capita has greatly reduced from 3300 m³ in 1960 to around 1000 m³ in 2005. Of the ten most water scarce in the world, 8 of the Arab countries top the list. Many countries in the region are facing severe pressures due to limited opportunities for the exploitation of new water resources and most of them are over-exploiting their available water resources (mainly groundwater). These pressures are expected to increase in the face of expanding populations and the increased per capita water use associated with economic development. Frequent drought events occur in the region and increase pressure on available water resources. The effects of drought are generally serious for the poor, because they are the most dependent on natural resources for their basic livelihoods and they have the least means to avoid or cope with the consequences. Since the water resources are severely depleted in several areas, the optimal use of precipitation is warranted. Rainwater harvesting is considered crucial for rural development.

In the light of these challenges this paper attempts to show how by implementing an adequate rainwater harvesting structures in rural areas (to ensure that the water harvested remains available after the rain or the rainy season), it is possible to overcome the shortage in water and improving the livelihoods of local communities. The challenges with this issue is to ensure that rainwater harvesting structure is managed in such away that it is sustainable and that it provide an equitable water share to all the poor.

The paper describes also the ACSAD package intervention in the study area by building a hill reservoir of 7000 m³ for providing the local farmers with water during dry seasons and for use in supplementary irrigation and summer crops. New varieties of ACSAD wheat seeds which support the local climatic conditions (mainly freezing) and have early maturing and with high productivity rate have also been delivered to them in addition to scientific advice. The paper describes also the benefits obtained by the farmers from such intervention. In conclusion the paper gives some research results regarding the use of modeling technique and GIS for calculating runoff coefficient.