

Rainwater harvesting: a lifeline for human well-being



RAINWATER HARVESTING: A LIFELINE FOR HUMAN WELL-BEING

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FOREWORD



In 2008 the world witnessed multiple crises including a food one which resulted in unrest in many areas of the world. These tensions may well foreshadow future challenges as they relate to providing sufficient food for six, rising to nine billion people. Unless we get more intelligent in the way we manage agriculture, the world is likely to head into deeply challenging times.

Water and the good and services provided by ecosystems are part of this urgent need for an intelligent management response not least in relation to food production.

The Millennium Ecosystems Assessment report, in which UNEP played an important role, demonstrated the links between healthy ecosystems and food production. These include providing food, water, fiber, genetic material; regulating soil erosion, purifying water and wastes, regulating floods, regulating diseases and pests; and supporting the formation of soil, photosynthesis and nutrient recycling.

Water is an integral part of ecosystems functioning. Its presence or absence has a bearing on the ecosystems services they provide. Relatively larger amounts of water are used to generate the ecosystem services needed to ensure provisioning of basic supplies of food, fodder and fibers. Today rainfed and irrigated agriculture use 7,600 of freshwater globally to provide food. An additional 1,600 km³ of water is required annually to meet the millennium development goal on hunger reduction which addresses only half of the people suffering from hunger. This figure does not include water required for

domestic, industrial and environmental (environmental flows. With renewable accessible freshwater globally limited to 12,500 km³, the managing of water is a great challenge facing humanity. This makes it essential to find sustainable methods for managing water which incorporate all water users (environment, agriculture, domestic and industry) by promoting ecosystems management, resource efficiency, and governance and climate change adaptation.

There are numerous positive benefits for harvesting rainwater. The technology is low cost, highly decentralized empowering individuals and communities to manage their water. It has been used to improve access to water and sanitation at the local level. In agriculture rainwater harvesting has demonstrated the potential of doubling food production by 100% compared to the 10% increase from irrigation. Rainfed agriculture is practiced on 80% of the world's agricultural land area, and generates 65-70% of the world's staple foods. For instance in Africa more than 95% of the farmland is rainfed, almost 90% in Latin America.

The biggest challenge with using rainwater harvesting is that it is not included in water policies in many countries. In many cases water management is based on renewable water, which is surface and groundwater with little consideration of rainwater. Rainwater is taken as a 'free for all' resource and the last few years have seen an increase in its use. This has resulted in over abstracting, drastically reducing water downstream users including ecosystems. This has introduced water conflicts in some regions of the world. For the sustainable use of water resources, it is critical that rainwater harvesting is included as a water sources as is the case for ground wand surface water.

This publication highlights the link between rainwater harvesting, ecosystems and human well being and draws the attention of readers to both the negative and positive aspects of using this technology and how the negative benefits can be minimized and positive capitalized.

Achim Steiner

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