

Managing rain: the key to eradicating poverty and hunger

We scientists and experts, joining the 2014 World Water Week in Stockholm, are deeply concerned that sustainable management of rainwater in dry and vulnerable regions is missing in the goals and targets proposed by the UN Open Working Group (OWG) on Sustainable Development Goals (SDGs) on Poverty (Goal 1), Hunger (Goal 2) and Freshwater (Goal 6).

We commend the OWG for setting ambitious and aspirational global development goals of eradicating poverty and hunger and promoting equity, ensuring peace and transparent global governance, within the context of global sustainability for climate, oceans, and ecosystems.

Our concern arises from the failure to recognize the ominous congruence between, on the one hand, poverty, malnutrition, rapid population growth and economic reliance on agriculture, and the water challenges and predicament in semiarid tropical and subtropical climates on the other. These drylands are the most water vulnerable inhabited regions of the world, hosting the world's poorest countries.

This is a challenge of global importance. Drylands cover 41 percent of the world's land surface, host 44 percent of the world cultivated systems and are home to 2.1 billion people in nations with the world's highest population growth rates. Here, food production and human livelihoods rely on limited, highly variable, unreliable and unpredictable rain. When it rains, it often pours in intense convective storms that generate flash floods with eroding surface runoff, making fruitful rainfed agriculture and traditional irrigation extremely challenging. However, even in these areas there is generally enough rainfall and thus potential to drastically improve food production, if only we can guide more of the water to beneficial, productive uses.

By 2050, business-as-usual will mean 2 billion smallholder farmers, key managers and users of rainwater, eking out a living at the mercy of rainfall that is even less reliable than today due to climate change. Setting out to eradicate global poverty and hunger without addressing the productivity of rain is a serious and unacceptable omission. The proposed SDGs cannot be achieved without a strong focus on sustainable management of rainwater for resilient food production in tropical and subtropical drylands.

Sustainable development for the poorest dryland farmers depends on the ability to build resilience and raise agricultural production within the capacity of local and severely underutilised rainwater. Management practices and techniques, such as rainwater storage, efficient supplementary irrigation, and integrated management of water, land, crops and nutrients, can provide significant productivity gains and sustainable intensification of smallholder agriculture for livelihood improvements, community development and food security. This could also open the possibility for investments, stimulating further agricultural development, benefitting from experiences in mid- and high-income countries.

We therefore call upon the United Nations General Assembly to add in any Hunger Goal a target on sustainable and resilient rainwater management for improved food production, through the adoption of sustainable watershed management practices at all scales aiming for an increase of over 50% in the yield of food per unit of rainwater.

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