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Food security in the face of climate change: impossible without water

By Waltina Scheumann
and Elke Herrfahrdt-Pähle,
*German Development Institute /
Deutsches Institut für Entwicklungspolitik (DIE)*

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Bonn, 21 October 2016. Friday marked the end of the COP 22 conference in Marrakesh, which addressed the implementation of the climate agreement signed in Paris one year ago. The accord at long last recognised that climate change adaptation is equally as important as greenhouse gas reduction. The conference subsequently set out to breath life into the target agreements. Adaptation of African Agriculture to Climate Change (AAA), an initiative of host country Morocco, is particularly noteworthy in this context. It aims to help position the African agricultural sector at the heart of debates on climate change adaptation and to mobilise finance for adaptation measures. This venture is as welcome as it is overdue. Just five percent of the funding available for climate change mitigation and adaptation efforts flows to Africa, despite the continent being one of the parts of the world most severely affected by the consequences of climate change.

The growing world population can only be fed if we have an efficient agricultural sector. However, in sub-Saharan Africa, the uncertain food situation is directly linked to the quantity of food produced, unlike in South Asia, for example, where food insecurity is primarily a result of weak purchasing power and distribution issues. The agricultural ministers of the 20 leading industrialised nations and emerging economies had already committed in Istanbul in 2015 to ensuring food security for a world population set to rise to nine billion people by 2050. They are now receiving support from the aforementioned adaptation initiative.

The agricultural sector in particular has a great deal to do when it comes to adapting to climate change. We are already seeing marked fluctuation in annual and longer-term rainfall in sub-Saharan Africa. In many regions, rainfall levels are simply insufficient and droughts common. Consequently, it is not possible to properly adapt agricultural practices without water storage facilities, irrigation systems and a corresponding system of adapted soil and water management.

A key approach in this context is to expand irrigation farming activities in order to make food production independent of unreliable rainfall levels and compensate for the existing low levels of soil fertility and water retention in many parts of sub-Saharan Africa especially. While irrigation could boost agricultural yields by up to 50 percent, the region's food crops are grown almost exclusively using rain-fed meth-

ods, which are dependent on extreme weather events. In Zambia and Tanzania, for example, only between 5 and 10 percent of cultivated fields are irrigated; the figures in Asia and Latin America are 37 and 14 percent respectively. While increasing yields is in and of itself a compelling argument, switching to irrigation also boosts incomes, for example, by 50 and 86 percent in Ethiopia and Tanzania respectively.

The AAA initiative can raise the profile of the issue of water in agriculture and imbue it with fresh dynamism. It is necessary to close the widespread investment gaps in water storage facilities, modernise ailing infrastructure, invest in irrigation schemes and technologies with geographical advantages and implement measures for improving water-use efficiency. Nonetheless, agricultural water use and a professional water management system adapted to the consequences of climate change must form part of an overall package which promotes the productivity of farms. This package should include access to loans, inputs, stable markets etc.

The Marrakesh climate conference has delivered considerable impetus in this regard. For the first time, the event devoted a whole day to climate change and water, an issue raised one year ago in Paris. New initiatives have been launched, including Water for Africa and the Blue Book on Water and Climate, which advocates among other things for integrated, sustainable water resources management and an action agenda for water. The nationally determined contributions (NDCs) of many developing countries, much discussed at the conference, also give priority to agricultural sector adaptation and water management alike.

Consequently, German development cooperation should continue to intensively promote the water sector, while also giving the issue of water in agriculture greater prominence on the agenda. They need to abandon their reticence towards infrastructure projects, that is, water storage facilities and irrigation systems. This also means that there is a need to establish properly functioning water institutions and transparent procedures for approving water use rights in order to respond flexibly to changing needs and climate fluctuation. Only in this way can the agricultural sector join forces with water management institutions to respond appropriately to the demands of climate change and play its part in ensuring food security.