

Drought conditions and management strategies in Tanzania

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Background

The outcome of climate change are manifest through increases in extreme climatic conditions such that drought, changes in rainfall season and intensity (IPCC, 2007, 2013). The United Republic of Tanzania is among the 49 Least Developed Countries (LDCs) in the world. Its economy mainly relies on rain-fed agriculture with the result that it has a low capacity to adapt to climate changes.

Drought condition is coupled with rainfall deficit and poor rainfall distribution. Drought is the major reason for both water and food shortage. Drought worsens agricultural development and unsustainable land use. In Tanzania, drought condition is observed more frequently in the northern and central portion (Arusha, Manyara, Shinyanga, Simiyu, and Dodoma) of the country. In the recent decade Tanzania experienced severe drought 1999/2000 which extended to 2005 (Kijazi & Reason 2009). This condition was associated with low crop yield, food crisis, and water shortage and hydro-power outage. In the recent decade 2010/11 drought condition which occurred in the Great Horn of Africa (Dutra et al. 2013) impacted about million people in the northern portion of Tanzania which were left with shortage food and water (Report et al. 2013).

Drought monitoring and early warning systems

It is very clear that drought condition has impact not only to water sources and agriculture but also to the social-economical development. Therefore drought monitoring and early warning require rigorous effort in order to establish the strategies for the adaptation and mitigation measures. Currently there is no drought policy in place. However, the government and its various Ministries and Institutions have already made some efforts to address drought issues. For example, there are several projects which directly/indirectly involve drought monitoring. For example, CLIVET project under Danish Development Agency through Geographical and Geological Survey in collaboration with various institutions in Denmark and Tanzania. Moreover, Climate Change Impacts,

Adaptation and Mitigation project (CCIAM) in collaboration with the Norwegian Universities and Research Institutions in Tanzania.

Tanzania Meteorological Agency (TMA) is the main government authority which provides daily, monthly and seasonal weather forecast. It also monitors drought condition and issue early warning in collaboration with various stakeholders, government institutions and NGO's at a local and national level. For example, TMA collaborates with the Ministry of Agriculture and Food Security, Ministry of Water and Energy, Prime Minister's Office (Disaster Management) and Vice President's Office (Environment).

The general purpose of TMA is to provide quality and reliable meteorological services to meet public and stakeholders expectation thereby contributing to the protection of life and property, environment and national poverty eradication goal. TMA also provide update of the previous weather/drought outlook which is released through various media of communication. For example, daily weather forecasting, seasonal outlook of rainfall and drought outlook condition in the country. Furthermore, recently TMA launched a bulletin, 'TMA statement on the status of climate in Tanzania'. This bulleting will be released every year. The aim of this bulletin is to ensure public awareness on weather, climate and climate change is enhanced and that the Government, Policy makers, scientific communities and all stakeholders are provided with up-to date and reliable information about the status of the National Climate.

Moreover, the National Environment Management Council (NEMC), established a unit called Drought and desertification control unit. More recent, the Early Warning Project which is collaborated by various institutions including TMA, Ministry of Agriculture and Food Security, Prime Minister's Office and Vice President's Office under the United Nations Development Program (UNDP) was launched. All these and other ongoing government efforts have direct/indirect impact in the drought management and early warning in the country.

Vulnerability assessment:

The most vulnerable sectors include agriculture and food security, water, health, environment and industrial sector. Various reports including a recent speech given by the President of Tanzania, Honourable Jakaya M. Kikwete indicate that, food security vulnerability in Tanzania remains high with national level Self Sufficiency Ratio (SSR) as low as 103% as compared to desired threshold ratio of 120% amidst of which 10 regions contain vulnerable areas. Currently, 63 districts

(approx. half of the country) in 17 regions have been earmarked to be food security vulnerable areas. The most vulnerable group includes women and children who travel long distances to look for water for domestic uses. Moreover, children and old people suffer from hunger and even die during drought condition. Furthermore, small farmers are more vulnerable than large scale farmers (Maganga 2003).

Emergency relief and drought response

The drought assessment conducted by the Security Information Team coordinated by the Ministry of Agriculture and Food Security and Prime Minister's Office identify the area, population and a type of emergency relief required. The Tanzania Disaster and Relief Coordination (TANRED) who provides short term, mid and long term relief. For example, short term relief could be food and seed.

Acknowledgement

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Reference

This information is the accumulation of various reports from the Tanzania Meteorological Agency, Ministry of Agriculture and Food Security Office (Food Security Office and Prime Minister's Office (Disaster Management)).

Moreover, some few studies on the impacts of drought in the country. For example, Maganga, F.P., 2003. Incorporating customary laws in implementation of IWRM: some insights from Rufiji River Basin, Tanzania. *Physics and Chemistry of the Earth, Parts A/B/C*, 28(20-27), pp.995–1000. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S1474706503001621> [Accessed September 30, 2013]