



Climate Change in sub-Saharan Africa

Introduction

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. In 2018, in response to an invitation by the signatories to the Paris Agreement, the IPCC issued a Special Report on the impacts of global warming of 1.5 and 2°C above pre-industrial levels. The Report highlighted that climate change is occurring much faster than previously estimated, and even half a degree of warming will make a huge difference in terms of impacts (Climate Action Network International, 2018).

Climate change has been identified as one of the greatest challenges of our time, and the associated adverse impacts will undermine the ability of all countries to achieve sustainable development (Food and Agriculture Organization of the United Nations/ FAO, 2018; IPCC, 2018; UN 2030 Sustainable Development Goals Preamble). Climate change threatens the ability to achieve the Sustainable Development Goals of reducing poverty, ending hunger, achieving food security, improving nutrition and sustainable agriculture, health and well-being, clean water, and decent work. Populations currently at risk economically, politically, or otherwise, are especially vulnerable to the impacts of climate change. Increasing environmental sustainability is one of Canada's cross-cutting themes for international development (FIAP, 2018).

The FAO, in their 2018 report "The State of Food Security and Nutrition in the World", identified climate variability and extremes as key drivers behind the recent rises in global hunger and one of the leading causes of severe food crises. They report a rise in world hunger over the three year period between 2015 and 2017. Unless action is taken now to make agriculture more sustainable, productive and resilient, climate change impacts will seriously compromise food production in countries and regions that are already highly food-insecure, and will jeopardize progress toward the key Sustainable Development Goals of ending hunger and poverty by 2030 (FAO, 2018).

All African nations were signatories to the Paris Agreement in December 2015. Developed countries pledged \$100 billion a year by 2020 through 2025. Canada has begun delivering on their commitment of \$2.65 billion over five years in collaboration with a number of partners. As of November 2018, Canada has pledged \$1.5 B with approximately \$184 million dedicated to climate adaptation in developing countries (<https://climate-change.canada.ca/finance/RecentAnnouncements-AnnoncesRecentes.aspx>).

In a report released at the UN Climate Change Summit in Poland in 2018, the UN Environment Programme warned of a widening gap between the cost of adaptation in developing countries and what wealthier nations have promised

(<http://www.thenewhumanitarian.org/news-feature/2018/12/13/nowhere-go-front-lines-climate-change>).

Climate extremes in sub-Saharan Africa

Sub-Saharan Africa (SSA) has experienced the dramatic consequences of climate extremes becoming more frequent and more intense, “with risks to health, livelihood, food security, water supply, human security and economic growth” (IPCC, 2018). Western Africa has been identified as a climate hot spot where climate changes are being seen earlier than in other parts of the world. It is projected that sub-Saharan Africa will continue to experience increasing number and intensity of weather and climate extremes, including large increases in the frequency of heat extremes in West and Central Africa, increasing frequency of droughts in the south-west, and increased rainfall and risk of flooding in Eastern Africa (IPCC, 2018). In January, 2017, the Brookings Institution released its report, *Foresight Africa*, in which climate change was identified as one of the top 10 issues facing Africa. They reported that, in a sample of 30 African countries, two-thirds are warming faster than the world as a whole -- a trend expected to continue in coming decades.

Impact

Africa is particularly vulnerable to changes in weather patterns due to the high reliance on rain-fed crops and the high proportion of smallholder farmers. The impacts of a changing climate in SSA are many, the most fundamental of which is the lack of food sustainability. In sub-Saharan Africa, an estimated 23.2% of the population experienced chronic food deprivation in 2017 (FAO, 2018). An increase in the prevalence of undernourishment has been observed in all sub-regions of SSA, except for East Africa. The FAO reports that the number of undernourished people in SSA rose from 181 million in 2016 to almost 222 million in 2017, an increase of 22.6%.

In 2018 there were 53 countries in the world that experienced food crises requiring urgent food, nutrition and livelihood assistance (Food Security Information Network, 2019) with more than half of the food insecure people living in 33 African countries. High levels of acute malnutrition and stunting of growth in children under age five were evident in many countries in SSA. The main drivers of food insecurity were identified as climate shocks (notably droughts), conflicts and economic turbulence. These drivers often occur in a complex interplay. For example, 90% of Lake Chad has disappeared, devastating the livelihood of fishers and the major economy of the region. Young men, having no source of income, are easy targets of Boko Haram recruitment. Included in Appendix A is detailed information for 18 countries in SSA.

Local food sustainability is a core issue and a root cause of poverty, and vulnerability to disease. Climate shocks (droughts and flooding) are a main driver of displacement and migration away from the rural setting. Climate change is a factor in early school departure (especially for girls) and a significant contributor to conflicts (FAO, 2018; USC Canada, 2018). Undernutrition is forecast to be the largest health impact of climate change in the 21st

century, making it a subject of key humanitarian concern (MSF, 2018).

Other negative impacts of climate change in sub-Saharan Africa include:

- increase in climate sensitive vector-borne infectious disease including malaria and dengue, and an increase in water-borne illnesses related to flooding;
- risks to economic security, described as a poverty multiplier forcing more people into extreme poverty mostly through impacts on agriculture and food prices;
- water stress, with droughts compounded by population growth;
- an increase in HIV infections related to increases in violence against women, increases in women selling sex, and decreased access to treatment services with migration out of home communities (FAO, IPCC, USC Canada); and
- exacerbation of current levels of childhood undernutrition and stunting, and an increase in mortality across all age groups (FAO, 2018).

Women, children, the elderly and the socially isolated are particularly vulnerable to climate variability and extremes. Women and girls are particularly at risk when it comes to the lack of clean drinking water, coupled with a gender-based imbalance in household responsibilities, as they have to spend more time and effort attending to basic needs, such as growing food and collecting water and fuel (FIAP, 2018). In addition, their vulnerability is increased due to their restricted access to finances, land, education, health and other basic human rights (FAO, 2018; USC Canada, 2018).

Smallholder farmers, the majority of whom are women, produce 70% of the world's food, with most of the harvests going to local and within country markets. Smallholder farmers are the source of valuable knowledge and experience related to maintaining crop biodiversity, and are at the forefront of the fight against climate change. The knowledge and experience of smallholder farmers has become devalued with the focus on the economic/industrial model of large-scale farming that supplies large volumes of food to global markets but leaves rural populations hungry, and trade agreements that prevent the saving and planting of indigenous seeds. Food sustainability and the livelihoods of smallholder farmers is further threatened by land and resource grabs, human rights abuses, and forced displacement (USC Canada).

Adaptation Strategies

It is important that there be equitable achievement of the Paris Agreement's 1.5C goal, and safeguards for food security, the rights of indigenous peoples and local communities, gender equality, environmental integrity and human rights (CAN 2018). Achieving gender equality for smallholder farmers is a key strategy in curbing climate change. Empowering women smallholder farmers could increase food production by 20-30% and eliminate much of world hunger (Wilkinson, 2018). In addition, providing women and girls with access to education and high quality reproductive health care will provide choice for women and curb the burden of population growth.

Drivers of success in supporting smallholder farmers include using a bottom-up approach by including them in building solutions and valuing their knowledge and experience. Also im-

portant are access to subsidies and loans by individual farmers and communities, farming education focused on adapting to climate change, encouraging young people to stay on the land, and inclusion of climate adaptation strategies in school curricula. At the political level there is the need to change oppressive seed laws and patents that prevent smallholder farmers from saving and using traditional seed varieties and trade agreements that categorize local indigenous seeds as lower-quality or non-standard (USC Canada).

There is a need for the Government of Canada to increase both climate adaptation funding and general international assistance. There is a call for international assistance for agricultural development that strengthens local and regional markets where smallholder farmers operate, and for more aid to be channeled directly to civil society, in particular to local organizations led by women, youth, Indigenous people and communities (USC Canada). Such assistance would build entrepreneurial skills, strengthen local biodiversity, innovation and culture, and sustain livelihoods and food sustainability. Canadian climate networks are asking Canada to increase international assistance for climate change adaptation to reach 50% of all climate related funding, with long-term and accessible funding for civil society organizations.

APPENDIX A
MAJOR FOOD CRISES IN SUB-SAHARAN AFRICA 2018
Food Security Information Network, Global Report on Food Crises, 2019

| COUNTRY | POPULATION AFFECTED BY ACUTE FOOD INSECURITY | DRIVERS Climate/ Conflict/ Economic | | |
|--|---|--|---|---|
| Burundi | 1.7 million/ 16% | x | x | |
| Central African Republic | 1.9 million/ 43% | | x | x |
| Democratic Republic of Congo | 13.1 million/ 23% | x | x | x |
| Ethiopia | 8.1 million / | x | x | |
| Kenya | 2.6 million/ | x | x | x |
| Lake Chad Basin (Cameroon, Chad, Niger, Nigeria) | 3.5 million / 17.3% | x | x | x |
| Madagascar | 1.5 million / 6.1% | x | | x |
| Malawi | 3.3 million / 17.9% | x | | x |
| Mozambique | 1.8 million / 5.9% | x | | x |
| Somalia | 2.7 million / 19.4% | x | x | |
| South Sudan | 6.1 million / 55.5% | x | x | x |
| The Sudan | 6.2 million / 14.1% | x | x | x |
| Uganda | 1.1 million / 2.8% | x | x | x |
| Zambia | 1.2 million / 6.8% | x | | x |
| Zimbabwe | 1.9 million / 13.7% | x | | x |

References

Brookings: Foresight Africa Priorities for 2017
https://www.brookings.edu/multi-chapter-report/foresight-afri-ca/?utm_source=FB&utm_medium=BPIAds&utm_campaign=forafricLP&utm_term=NoNoCtyNG-18%25252525255e65-F-Internation-al%2525252520DNoCAnoBHV&utm_content=116874660

Climate Action Network (CAN) International, 2018; CAN Annual Policy Document, Full Version: Katowice - Spurring the Paris Agreement to Action;
<http://www.climatenetwork.org/publication/can-annual-policy-document-full-version-katowice-spurring-paris-agreement-action>

International Panel on Climate Change 2018; <https://www.ipcc.ch>

Food and Agriculture Organization (UN) 2018 The State of Food and Agriculture; Climate Change, Agriculture and Food Security <http://www.fao.org/3/I9553EN/i9553en.pdf>

Canada's Feminist International Assistance Policy, 2018;
https://www.international.gc.ca/world-monde/issues_developpement-enjeux_developpement/priorities-priorites/policy-politique.aspx?lang=eng

Food Security Information Network, 2019. The Global Report on Food Crises.
http://www.fsinplatform.org/sites/default/files/resources/files/GRFC_2019-Full_Report.pdf

Food Security Policy Group, 2017, Is Private Investment in Agriculture the Solution? An Evaluation of the New Alliance for Food Security and Nutrition in Senegal.
https://inter pares.ca/sites/default/files/nafsn_final_report.pdf

Government of Canada - Climate change in developing countries.
https://www.international.gc.ca/world-monde/issues_developpement-enjeux_developpement/environmental_protection-protection_environment/climate-climatiques.aspx?lang=eng

Medicines San Frontières (MSF), 2018. Climate change and health: an urgent new frontier for humanitarianism. The Lancet, November 2018.
<http://www.lancetcountdown.org/media/1422/2018-lancet-countdown-policy-brief-msf.pdf>

The Guardian (2016), European parliament slams G7 food project in Africa.
<https://www.theguardian.com/global-development/2016/jun/08/european-parliament-slams-g7-food-project-in-africa>

UN Framework Convention on Climate Change; [_https://unfccc.int/process-and-meetings/conferences/past-conferences/marrakech-climate-change-conference-november-2016/marrakech-climate-change-conference-november-2016](https://unfccc.int/process-and-meetings/conferences/past-conferences/marrakech-climate-change-conference-november-2016/marrakech-climate-change-conference-november-2016)

UN Sustainable Development Goals,
<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

USC Canada Policy Statement, Draft February 11, 2019

Wilkinson, Katherine, (2018), Climate and gender equity. Ted Talks.
https://www.ted.com/talks/katharine_wilkinson_how_empowering_women_and_girls_can_help_stop_global_warming?utm_campaign=tedsread&utm_medium=referral&utm_source=tedcomshare