

SBSTA 39 WORKSHOP ON AGRICULTURE IN WARSAW, POLAND.

12TH NOVEMBER, 2013

Questions to guide the statements and facilitate discussions:

(1) What are climate change impacts on agriculture observed in your country?

Projections of future climate change impacts on agriculture vary in LDCs. For example, a review of multiple studies that assessed impacts on different crops suggests that in Africa and South Asia, crop yields may decline by 8 per cent by the 2050s (Knox et al., 2012). Yields of other major crops (such as sorghum and millet) are expected to decline significantly (Knox et al., 2012). Extreme climate events, such as droughts, extreme heat, and floods also have severe impacts on agriculture production. For example, frequent and erratic rainfall leads to drought (ex. a case study in The Gambia (Yaffa, 2013) on the impacts of drought on crop production in 2011 reported that crops were the most impacted as a result of the drought; short and heavy rainfall leading to flooding in some growing areas in The Gambia in October, 2013 has delayed rice transplanting by women in a particular region in the country by two months). Of 24 countries identified as highly exposed to these climate hazards and also having high numbers or proportions of poor people, 17 are LDCs (Shepherd et al., 2012).

In addition to crop production, many LDCs are also relatively dependent on fisheries, a sector that is also potentially vulnerable to climate change (Allison, 2009), but there is greater uncertainty with regard to the specific impacts of climate change on that sector (Brander, 2007). For these reasons, climate change is likely to exacerbate the challenge of increasing food production and eradicating poverty in LDCs and in consequence increase LDCs' dependence on food imports.

(2) What experience does your country have with practices and approaches for dealing with adaptation of agriculture to climate change impacts?

- LDCs have little experience with practices and approaches for dealing with adaptation of agriculture to climate change impacts. Food security is already a key issue in LDCs, many of which have agriculture-based economies. **PRACTICES:** (a) Climate seasonal forecasting in The Gambia through an early-warning system, (b) Rainwater harvesting for irrigation in Burkina Faso, (c) Introduction and popularization of planting an upland rice (NERICA) in The Gambia, Senegal, and Guinea Conakry that is early-maturing and drought-tolerant. **APPROACHES:** (a) Development of National Adaptation Plans in many LDC countries, (b) Synergies between climate change and agriculture policies and strategies in most LDC countries, and (c) Index based crop insurance schemes.

(3) What experience does your country have with the application of scientific knowledge for enhancing the adaptation in agriculture while promoting productivity and taking into account co-benefits?

LDCs have a very low experience with the application of scientific knowledge for enhancing the adaptation in agriculture while promoting productivity and taking in to account co-benefits because of the low capacity of scientists and technicians. However, small strives are being undertaken to fill that gap. For example, (a) Agroforestry that diversifies food production and serves as sink for GHGs, (b) Conservation tillage that increases soil health and fertility and stores more carbon in the soil, and (c) Rainwater harvesting technologies. Agriculture in LDCs in the context of ongoing climate change faces multiple challenges of producing more food, more efficiently, under more volatile production conditions, with reductions in GHG emissions from food production and marketing (Lybbert and Sumner, 2010). Meeting these challenges will require more research and technological development and transfer as well as enhanced systems to promote technology adoption in LDCs. In general, investments are required in public agricultural research capacities in LDCs that target improvements in agricultural productivity, resilience in the face of increasingly variable growing conditions, improvements in water use efficiency and reduced input intensity.

REFERENCES

- Allison, E. (2009). Vulnerability of national economies to the impacts of climate change on fisheries. *Fish and Fisheries*, 10(2), 173-196.
- Brander, K. (2007). Global fish production and climate change. *PNAS* 104(50), 19707-19714.
- Knox, J., Hess, T., Daccache, A. & Wheeler, T. (2012). Climate change impacts on crop in Africa and South Asia. *Environmental Research Letters* 7(3), 034032.
- Lybbert, T. & Sumner D. (2010). *Agricultural Technologies for Climate Change Mitigation and Adaptation in developing Countries: Policy Options for Innovation and Technology Diffusion*, ICTSD–IPC Platform on Climate Change, Agriculture and Trade, Issue Brief No.6, International Centre for Trade and Sustainable Development, Geneva, Switzerland and International Food & Agricultural Trade Policy Council, Washington D.C.
- Shepherd, A., Mitchell, T., Lewis, K., Lenhardt, A., Jones, L., Scott L. & Muir-Wood, R. (2012). *The geography of poverty, disasters and climate extremes in 2030*. Overseas Development Institute, London.
- Yaffa, S. (2013). Coping measures not enough to avoid loss and damage in the North Bank Region of The Gambia. *Int. J. of Global Warming. Volume 5, No. 4, 2013*.