

Climate and Impacts on Food Security

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Given that the population of the Sahel depends largely on rain-fed agriculture and transhumant livestock rearing, there is a growing concern about the future climate of the region as global warming may alter the availability of water resources (IPCC, 2007). However, climate projections produced by a wide range of modelling groups for the IPCC Assessment Reports show little consensus over West Africa (IPCC, 2007). This lack of consensus results partly from the inability of climate models to capture the basic features of present-day climate variability in the region.

Even selecting the rainfall projections coming from the two models which best reproduce current climate patterns (Miroc and GFDL (Geophysical Fluid Dynamics Laboratory) models) it is not possible to identify a unique trend. The bottom line is that approaching the problem from a climate provide point of view you means ending up with something that cannot directly inform a decision: “there is nothing we can say!”

On the other hand our climate model provides very robust projections for other parameters that, whilst not of direct relevance to today’s farming practice, can become important in the future. For example hard thresholds exist for wheat, corn and most other crops. There is also another reason why not to despair. Whilst climate projections for rainfall are all over the place, climate predictions in the tropics are highly skilful and can be used to predict user-relevant parameters. The African RCOF (Regional Climate Outlook Forum) should be taken as an example of how climate information can be made relevant to decision makers; attempts are currently being made to also use this information in resource planning for food security management.

Whilst there is certainly a connection between climate variability and change and food security, there are also underlying reasons why we should be looking at these regions. Some of these communities are fragile to any sort of stress and at times the direct impact climate change will have on food production is not the mechanism driving the impacts. In recent years an attempt to analyse the food security issue in its entirety began by looking only at sub-component of the issue in isolation, which may lead to maladaptation. A system thinking approach that starts from the analysis of the interactions between different sub-competent can lead to more robust results.

This Copernican revolution is at the basis of an important shift within the climate community, namely the climate service. Second-guessing what the users or more generally the society needs is likely to lead to maladaptation. There is no simple way around. Climate information products need to be user led, an operation that takes time and energy but which is required to maintain the relevance, the saliency and the legitimacy of the information. We do have a technology now that for the first time in our history allows us to make quantitative predictions about future climate risk. We have so far pushed this technology onto people stressing how uncertain we were about our own predictions. But our models are very rich of interesting information that we simply don’t know is relevant. We need to start tackling the fourth quadrant of Donald Rumsfeld proposition namely the things we don’t yet know we know or to say better that we don’t yet know are relevant.

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More info at:

https://www.wmo.int/pages/prog/wcp/wcasps/clips/outlooks/climate_forecasts.html

<http://www.gfdl.noaa.gov/climate-modeling>