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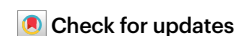
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National assessments highlight links between climate and nutrition policy

Daniel Mason-D'Croz



The application of an integrated assessment framework in four countries in sub-Saharan Africa demonstrates how anticipatory governance and decision support tools can help inform policy-making at the national level in the face of looming climate and nutrition crises.

Current food systems are facing severe challenges due to cascading shocks from conflict and extreme events, as well as longer run dynamics of population growth, and climate change. At the same time, the population who are overweight and obese has increased even as the prevalence of hunger also has risen¹. The food system both contributes to and is detrimentally impacted by a changing climate, and the burden of our unbalanced diets is among the leading causes of premature death globally. While all of these factors have contributed to several calls for radical changes to food systems^{2,3}, the slow progress towards the United Nations Sustainable Development Goals and the goals of the Paris Agreement raise doubts about our ability to respond appropriately to the climate and nutrition crises faced today⁴.

Writing in *Nature Food*, Jennings et al.⁵ engaged with national stakeholders in Malawi, South Africa, Tanzania and Zambia to develop a series of nationally relevant scenarios that allowed them to explore different climate-smart transitions and their potential food security implications. The authors then quantified these narratives in iFEED, an integrated assessment framework, to help consider key linkages within each country's food system – highlighting potential challenges to achieving desired policy objectives.

Across all four countries, the modelling exercise suggested that low-ambition scenarios were unlikely to ensure healthy diets for the entire population and that achieving nutrition and health outcomes in the food systems would require a break with current business-as-usual practices. While increasing staple productivity is important, the hyperfocus particularly on maize is unlikely to lead to desired nutritional and health outcomes. Jennings et al. underscore the need to diversify food production, with a greater emphasis on increasing fruit and vegetable production, which are not only rich in micronutrients but are under-consumed in the four countries assessed. Increasing crop diversity not only could be a win nutritionally but would increase climate resilience, by reducing the overreliance on a small number of crops. Nevertheless, it is critical to not ignore investing in improving crop productivity in the four countries. Their modelling suggests that due to growing populations, without substantial increases in crop productivity, future food demand will have to be met with increased land expansion, at the cost of biodiversity and environmental



objectives, or through increased imports, a perceived political risk. The availability of arable land for expansion varies substantially across the four countries, suggesting that some, such as Malawi, will have more limited options if they are not able to increase agricultural productivity.

This work responds to a serious need for scenario development and modelling at the national scale in low- and middle-income countries. There is a growing body of analysis in high-income countries, and there have been efforts to bridge between global and regional scenarios^{6,7}. However, modelling and scenario design still tends to be too top down, focusing primarily on global objectives, with much less focus on the complex policy challenges at the national and local scales in low- and middle-income countries, which are more food insecure and exposed to the risks of climate change. This is a problem that is compounded by the fact that decision-makers in these contexts tend to have less access to integrated assessment models and other decision support tools.

It is imperative to find ways to democratize access to these decision support tools. While these tools do not ensure positive outcomes, they help decision-makers better understand complex systems and provide rigorous frameworks to consider the intended and unintended consequences of different strategies⁸. This facilitates a more intentional approach to policy design that helps to align public action with desired economic, nutritional, health and environmental objectives and more holistically consider trade-offs between these multiple objectives. Given that political action happens at the local level, future modelling needs to be done at the policy-relevant spatial (that is, cities, provinces, and so on) and temporal (that is, years not decades) scales. Many more efforts like those illustrated by Jennings et al. will be necessary to help bridge the gap between current and needed actions to drive sustainable transformations of food systems.

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Competing interests

The author declares no competing interests.