Ceres2030
Sustainable Solutions to End Hunger

Ceres2030: Sustainable solutions to end hunger is a joint initiative of Cornell University, the International Food Policy Research Institute (IFPRI) and the International Institute for Sustainable Development (IISD). By combining state-of-the-art economic modelling techniques with insights derived from analyzing expert research, our project aims to determine the costs and effective solutions for tackling the objective laid out in SDG 2: how to end hunger sustainably by the year 2030.

The project is running from January 2018 to December 2020 with support from the Federal Ministry for Economic Development Germany (BMZ) and the Bill & Melinda Gates Foundation.

This Ceres2030 update brings you the highlights of a busy and productive six months. Past updates and further background on Ceres2030's approach, vision, and mission can be found on our revamped website.

Highlights

Evidence Synthesis Articles for Nature

Ceres2030's ambitious literature-based research on effective interventions in agriculture that will support the objectives of ending hunger, raising incomes for small-scale producers, and improving environmental performance is well underway.

We decided on our eight areas for evidence review in late 2018, and have since built our author teams and refined our research questions for the evidence syntheses being published in *Nature* in January 2020. The eight research questions are, in brief:

1. What leads farmers in climate-vulnerable countries to grow climate-resilient crops?
2. Which farm-level interventions lead to higher incomes and productivity in water-scarce regions?
3. What is the impact of ruminant feed strategy interventions on sustainability and livelihoods among small-scale and pastoral livestock keepers in Africa and Asia?
4. Under what conditions do modern marketing channels improve small-scale producer welfare?
5. Which measures can small-scale producers in low- and middle-income countries adopt to sustainably reduce post-harvest losses along nutritious crop value chains?
6. What is the effect of skills training on rural young people's engagement in agribusiness, agricultural value chains, and contract farming in Africa, Asia, and Latin America?
7. What are the incentives for farmers to adopt environmentally sustainable practices?
8. What is the range of strategies that farmer organizations use, and what are the impacts of those strategies on small-scale producers' livelihoods and the environment?

Each question was developed by the lead author of that topic area at a Ceres2030 meeting in Seattle hosted by the Bill & Melinda Gates Foundation. Lead authors also learned how to conduct an evidence synthesis and met and worked with some of the librarians involved in the project.

Each research team is assigned two experienced research methods experts, who guide the researchers through the process of evidence selection and categorization. In early May, the librarians and data scientists engaged in Ceres2030 met for a week at Cornell University to develop the search strategies for each research question. Their work produced a total of 90,000 articles taken from over 50 repositories of agricultural research.

This highly inclusive approach is critical to Ceres2030's success, including important evidence from policy-makers and practitioners who do not publish in academic presses.

In June, Ceres2030 welcomed the author teams for a week of intense work in Rome, hosted at FAO headquarters, where they finalized their research protocols and began their review of article abstracts. The research protocols establish publicly accessible guidelines that the author teams use to ensure the rigour and validity of their synthesis review, including how to include or exclude articles. Sixty-one of the 75 researchers, who come from 23 countries, attended the Rome event in person.

Author meeting in Rome. Photo Credit: Trevor Butterworth

Modelling Update

The modelling team has finalized two key components of the Ceres2030 project. First, the detailed greenhouse gas (GHG) emissions accounting module was implemented and tested. This is important for monitoring SDG2.4 and will be integrated into the model, allowing Ceres2030 to track individual GHG sources in the agricultural sector in a way that is consistent with the UNFCCC guidelines and compatible with FAO's statistical database (FAOSTAT). It will allow for monitoring emissions by source and product, as well as specific

interventions involving changes in agricultural practices. The model will run using existing interventions and again after incorporating the results from the evidence syntheses.

Second, the team integrated the issue of post-harvest losses into the dataset and modeling framework. The model will track post-harvest losses in terms of the quantity of discarded agricultural product, as well as how much farmers and operators lose in price along the value chain.

This modelling innovation is essential to integrate new interventions that focus on post-harvest losses, which has been an important area of interest for donors and will be the subject of the 2019 issue of The State of Food and Agriculture (SOFA) report.

Ceres2030 has a side event on post-harvest losses planned at the Committee on World Food Security (CFS) in early October to present its work on this critically important issue.

Linking Evidence and Model

The Ceres2030 team explored the feasibility of various methodologies to extract information from the evidence syntheses that could inform the modeling framework. This will ensure that the parameters and details about the type and effectiveness of interventions included in the syntheses can inform the estimates generated by the Ceres2030 cost model.

Ceres2030 is watching how each author team advances in order to develop a tailored approach for collecting the information the modelers need from the individual papers reviewed in the evidence synthesis process. The expectation is that this information will include data extracted from the articles and reports included in the evidence syntheses, as well as the final articles themselves.

Talking to Farmers About Their Priorities

In June, Ceres2030 piggy-backed on an IISD/FAO joint workshop in Kigali that brought approximately 25 farmers together to discuss the challenges and opportunities of contract farming in agriculture. Ceres2030 staff used the occasion to host a 2-hour conversation with participants, most of whom were members of the East African Farmers' Federation. We presented the project and asked the farmers what their priorities for public foreign investment in agriculture were.

Their list of priority interventions included: strengthening farmers' organizations; creating links between farmers and consumers; focusing on women's roles in agriculture and ensuring funding reaches them; providing opportunities for knowledge-sharing and education among farmers; promoting regional market integration (including through e-storage schemes); improving access to new technologies; and developing irrigation infrastructure to lessen weather-related risks.

Ceres2030 Communications

Our communications team has been working on a full overhaul of the Ceres2030 site, updating existing content and preparing a suite of new pages that will capture progress to date and provide a home for upcoming materials, including new publications and event announcements and recaps.

The team is translating the material on the website into French and updating the suite of communications tools, outputs, and plans for when new Ceres2030 publications are released in in late 2019 and early 2020. They are also refining their media and outreach strategy accordingly.