Reducing food insecurity and malnutrition in Guatemala

The challenge

Roughly one-quarter of Guatemalans don't have enough to eat. Children under five fare the worst: almost half — 49% — are chronically malnourished, the highest rate in Latin America. The result is stunted growth, increased risk of infection and disease, and lower IQ scores, compromising their future income-earning potential and quality of life.

Food insecurity and malnutrition also pose serious challenges to sustainable development and to achieving the United Nations' Millennium Development Goals in Guatemala. The problem is particularly acute in poor, rural areas — in the Western Highlands and the so-called "dry corridor" of eastern Guatemala — where the population is overwhelmingly indigenous and 90% of children are severely malnourished.

To solve this problem, the Guatemalan government, international donors, NGOs, and the private sector have funded hundreds of initiatives to better understand and combat malnutrition. In 2012 alone, international agencies spent US150 million on 200 projects to improve food security and foster rural development. But food security and poverty indicators in Guatemala have not improved in 20 years, suggesting that past investments have been ineffective. For the most part, these have focused on food distribution and income transfers, but have neglected the role of agriculture in reducing food insecurity and poverty, as well as the importance of science in informing effective policy choices.

The research

A three-year project funded by Canada's International Development Research Centre and led by researchers at Guatemala's Instituto de Agricultura, Recursos Naturales y Ambiente at the Universidad Rafael Landívar, in collaboration with scientists at the Faculty of Agricultural and Environmental Sciences at McGill University in Canada, are hoping to change that. Working with the Inter-American Institute for Cooperation on Agriculture, the researchers will measure and compare the effectiveness of different food security and nutrition initiatives in Guatemala.

Four agriculturally and culturally diverse regions have been selected for study. The researchers will map these using key municipal level indicators such as household consumption, income distribution, and poverty rates, in addition to measures for food security, forest cover and land use, and public expenditure to compare how the regions have fared over time.

Using systems dynamic modeling — a rigorous tool developed to help understand complex systems and predict outcomes — the various food security policies and practices within the test regions will be assessed to identify those that have proven most effective in improving small-scale farming.

Expected outcomes

Recommendations resulting from the research will be shared with key food security actors in forums, through publications, and other communications platforms to help influence public discussions, inform decision-making on food security, and ensure that national and international investments are put to best use. The findings are expected to inform future food security efforts by the Guatemalan government and other national and international development actors.

Lead researchers:

Dr Juventino Gálvez, Universidad Rafael Landívar, Guatemala

Dr Humberto Monardes, McGill University, Canada

Collaborating partner leads:

Dr Keith Andrews, Inter-American Institute for Cooperation on Agriculture (Guatemala)

Dr Audia Barnett, Inter-American Institute for Cooperation on Agriculture (Canada)

Funding: $450,000

Duration: November 2012 – November 2015

Canada