



# Weighing pros and cons of biofuels on food security

**WORKING FOR** countries developing bioenergy sectors

**WORKING TO** ensure bioenergy needs blend with food security and environmental needs

**WORKING WITH** Governments of Peru, Tanzania, Thailand

**WORKING THANKS TO** German Federal Ministry of Food, Agriculture and Consumer Protection

## BIOFUELS AND FOOD SECURITY

The landscapes across Peru vary dramatically – from the drylands along the coast to the heavy vegetation of the Amazon rainforest to the fragile ecosystems of the Andes. This type of diversity needs to be factored into decision-making processes by countries evaluating the potential impact of bioenergy production on their national food security. The FAO Bioenergy and Food Security Project has developed a comprehensive assessment tool specifically for helping countries analyse the pros and cons of establishing or supporting bioenergy sectors. The tool also assesses critical areas such as poverty levels, competitiveness and potential for economic growth. FAO piloted the tool in Peru, Tanzania and Thailand which have already incorporated its findings into their bioenergy policy and management plans. As a result of this initial success, developing countries on three continents have requested FAO's support in implementing the same analysis in their bioenergy sectors (Botswana, Malawi, Sierra Leone, Zimbabwe, Bolivia, Indonesia).

Bioenergy production holds great potential to revitalize rural economies and, at the same time, help countries increase energy independence and reduce greenhouse gas emissions. However, countries also worry about the risks to biodiversity and food security. The three countries chosen to pilot FAO's new methodology for assessing the pros and cons of developing and managing a biofuel sector – Peru, Tanzania and Thailand – all faced these dilemmas but also had their own specific problems to solve.

Peru had a policy calling for increasing use of bioenergy, but worried that meeting the water needs of bioenergy would take away from food crops. Tanzania's bioenergy sector was in its infancy, and

the government wanted to ensure that bioenergy production would not have a negative impact on the country's poor by increasing competition for land. Thailand had committed to increasing biofuel output but wanted to limit any harmful land use changes associated with feedstock production.

FAO specifically chose these three countries to pilot the methodology – an analytical framework developed by FAO's Bioenergy for Food Security Project (BEFS) – because of their differing goals for bioenergy use and differing capacities to support a bioenergy sector. The kinds of dilemmas they faced are typical of those faced by dozens of other countries around the world.



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The tool includes, but goes beyond, assessing the impact of bioenergy production on food availability and household food security. It consists of a series of step-by-step evaluations that help policy-makers make informed decisions about the viability of bioenergy development. But it doesn't stop there. If determined viable, the tool also can be used to identify policies that will maximize benefits and minimize risks. It is a flexible instrument, designed to adapt to individual countries' specific situations, including their varying terrains and natural resources, while also factoring in social, environmental and economic realities.

## Biofuel potential

On the pro side, biofuel production has the potential to increase investment in the agricultural and rural development sectors of developing countries. Private investors seek investments that will pay dividends, such as biofuel production. Thus, if getting better returns also requires their investment in improving a country's rural or transportation infrastructure, the entire agriculture sector will benefit.

Countries that fear investing in bioenergy will lead to food insecurity often only consider the "production" dimension of food security. The assessment helps them include the "ability to purchase" or "access" dimension. For example, if the bioenergy sector creates opportunities for smallholders to grow or process biofuel feedstocks or leads to jobs in transport or marketing of biofuel, it becomes a pro-poor proposition. The people who take those jobs may be better off than they were as subsistence farmers.

No one knows with certainty what will happen to the market for maize or sugarcane or other crops used for biofuels in the next decades, so policy-makers need to be aware of the various potential scenarios. Thus, the assessment tool helps countries determine how households will be affected if commodity prices increase or decrease. This includes evaluating the technological capacity of a country, including what is needed for the biofuel sector to run smoothly from the planting through the processing, transporting and marketing of feedstock, and determining if the country has the capacity to process feedstock into fuel that will help power its own energy sector.



## Multi-sectoral benefits

This tool approaches bioenergy development as the multi-sectoral issue that it is – involving agriculture, finance, trade, transportation and environment as well as energy. Members of FAO's Bioenergy for Food Security team spend time in each country, meeting with the relevant government ministries and institutions as well as related international organizations, NGOs and private sector industries – to ensure that all who have an interest in the development of a bioenergy sector take part in preliminary discussions to ensure the assessment will address and answer their questions.

In the three pilot countries, the assessments have already made a contribution. Peru's assessment foresaw potential competition between food and bioenergy for water resources, indicating the need to include both land and water in bioenergy policy. Tanzania has formulated interim guidelines as it works on a bioenergy policy and the project is currently providing a production cost analysis for biodiesel from sunflower. Thailand is looking to work with FAO to improve the productivity of bioenergy feedstock producers, particularly in the cassava sector.

In 2011, the G20 agriculture ministers recognized and recommended that countries use the FAO's tool as a basis for designing national bioenergy policies in line with their national poverty reduction, rural development, energy and food security strategies.