2008 Agency Reports

Food and Agriculture Organization of the United Nations

As part of FAO Bioenergy and Food Security (BEFS), FAO staff at the Trade and Markets Division (ETS) are currently developing a modified version of the GTAP-E model to incorporate biomass and bioenergy (first and second-generation sectors) to carry out macro- and market impact analysis of bioenergy production in selected developing countries. The modeling effort will focus on Tanzania, Peru, and Cambodia, and will examine the interface between bioenergy development and food security implications in these countries.

While the simulations exercise target specific developing countries, model development follows a global, multi-region perspective given the global nature of bioenergy developments. The modeling effort within BEFS project consists of three parts:

PART 1 - Creating a database and modified model that incorporate the following:

(a) new biomass sectors used for bioenergy including maize, cassava, palm oil (first generation), and agricultural biomass and wood biomass (second generation)
(b) new biofuels: sugar-ethanol, starch ethanol, cellulosic ethanol, and biodiesel
(c) new bio-power: green electricity (biomass-using electricity as separate from conventional electricity)

Currently we are near completion of data collection to make the necessary data aggregation adjustment (in collaboration with Mark Horridge)

PART 2 – Once the new model and database is operationalized, we plan to run simulations in the case of Tanzania, a poor developing country that is contemplating launching biomass and bioenergy development initiatives. The simulations will generate estimated changes in incomes, employment, prices by sector and the resulting production changes due to the additional production of biomass. In addition, the model scenarios will look at the price changes of food and energy that drive additional biomass production or additional biomass production as defined in the scenario.

PART 3 - Linking the model with household data and running micro-simulations to assess the implications for food security by household category. Household data work for the target countries is generated separately through this project (lead staff: David Dowe and Irini Matsoglou)

The ultimate goal is to provide a basis for policy recommendations about the suitability of suggested bioenergy proposal currently contemplated taking into account the likely food security criterion.