

FAO GTAP Report

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Land and Water Division, Natural Resources Management and Environment Department

The FAO IIASA GAEZ data portal is available online at www.fao.org/nr/gaez since May 25, 2012. FAO and IIASA launched the new GAEZ data portal(v3.0) with global, regional and local geospatial and tabular information on agricultural resources and potential.

The GAEZ modeling framework for crop potential assessment uses detailed agronomic-based knowledge to assess land suitability, potential attainable yields and potential production of crops for specified management assumptions and input levels, both for rain-fed and irrigated conditions.

GAEZ database outputs include thousands of global datasets. The tabular outputs are aggregated for current major land use/cover patterns and by administrative units, and land protection status.

These outputs provide key data, knowledge and information related to availability of natural resources used in a number of applications including land evaluation, agricultural production potentials, sustainable management of natural resources, ecosystem services and ecologic and economic modeling.

GAEZ Data Portal provides information at three basic levels of inputs (high, intermediate, low) on:

- agro-ecological zones
- agro-climatically attainable yields
- yield constraints
- crop calendars
- agro-ecological suitability and productivity assessment
- potential production estimates
- actual yield and production
- yield and production gaps

Additional information on GAEZ may be found on the flyer:

http://www.fao.org/fileadmin/user_upload/gaez/docs/Flyer_EN.pdf and the website.

In addition, our unit uses GIS/RS for land cover and land cover change, land evaluation, assessment and monitoring and land accounts. We have developed and implemented methodologies, using standards and tools to strengthen national capacity to undertake land assessments.

Briefing prepared by John Latham, Senior Environment Officer

Animal Production and Health Division, Agriculture and Consumer Protection Department

Our GTAP activities revolve around both in-house work in AGAL and collaboration with Purdue to extend the GTAP-AEZ-GHG, which has a special focus on land use sectors. Over the past year we've done the following:

- Improved the allocation of livestock land rents by AEZ, using spatial information on pasture productivity.
- Disaggregated the standard GTAP livestock sectors
- Created a multiproduct dairy sector, producing both meat and milk. The rationale here is that meat from the dairy sector has dramatically lower emission intensities than the beef sector. Our policy simulations show large substitution away from beef to dairy meat when a carbon price is introduced.
- Included soil carbon sequestration as an abatement option, albeit in a very rudimentary way. We plan to expand on this using marginal cost curves developed in house.
- With the help of Purdue, we've also done quite a bit of analysis on carbon border tax adjustments.

Briefing prepared by Benjamin Henderson, Livestock Policy Officer

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The Global Perspectives Studies Team is working on integrating the Envisage Model (jointly developed with the World Bank) into the standard projections work of this unit at the FAO. In this context, Envisage is in the process of being upgraded to the latest release of the GTAP database. The eventual aim is to achieve close convergence of the different projection approaches at least in some of the key outcomes such as global distribution of production and consumption, evolution of prices, etc. Eventually, the team also aims to integrate some of the other in-house analysis including better and more comprehensive modeling of land-use, incorporation of mitigation instruments in agriculture and a focus on long-term policy issues.

The team has been actively involved in the Agricultural Modeling Intercomparison and Improvement Project (AgMIP) an international network of modelers that includes both crop and economic models. One component of AgMIP is the comparison of economic models of global agriculture—both partial and general equilibrium. At the moment, this component of AgMIP incorporates some 11 modeling teams. The next round of comparisons will occur in Washington towards the end of August and the annual meeting—that also includes the crop modelers—will be hosted by FAO in Rome in October.

Briefing prepared by Dominique van der Mensbrugge, Senior Economist