

➤ OPTIMIZATION

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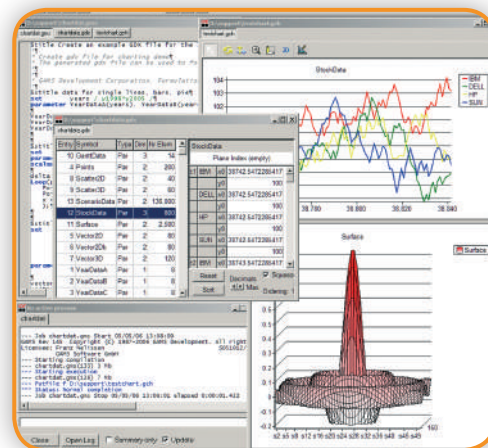
GAMS

High-Level Modeling

The General Algebraic Modeling System (GAMS) is a high-level modeling system for mathematical programming problems. GAMS is tailored for complex, large-scale modeling applications, and allows you to build large maintainable models that can be adapted quickly to new situations. Models are fully portable from one computer platform to another.

State-of-the-Art Solvers

GAMS incorporates all major commercial and academic state-of-the-art solution technologies for a broad range of problem types.



GAMS Integrated Developer Environment for editing, debugging, solving models, and viewing data.

IMPACT - Modeling the Effects of Climate Change and Water Availability on Food Security

The International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) examines alternative futures for global food supply, demand, trade, prices, and food security. IMPACT-WATER integrates the primary IMPACT model with a water simulation module that balances water availability and uses within various economic sectors at the global and regional scale.

- divides the world into 281 food production units and covers 40 different agricultural commodities
- incorporates a system of supply and demand elasticities into a series of linear and nonlinear equations to approximate the underlying production and demand functions
- examines the impact of water availability on food supply, demand and prices
- generates annual projections for crop area, yield, and production

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IMPACT Spatial Resolution

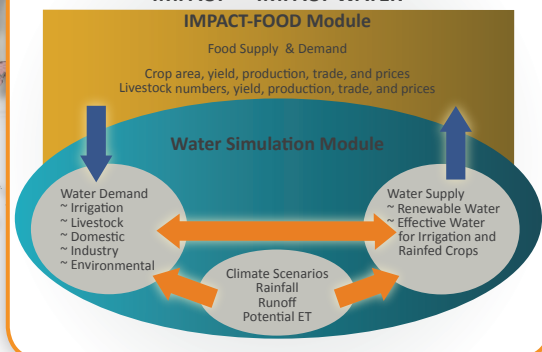
115 Regions X 126 River Basins



281 Food Producing Units



IMPACT → IMPACT-WATER



IMPACT and IMPACT-WATER have been developed at the International Food Policy Research Institute (IFPRI); for further information about this application please visit: <http://www.ifpri.org/themes/impact.htm>