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| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Definition** | **Technical Description** | **Units** | **Resolution** | **Data Source** |
| **Area** | Represents harvested area, which is the total area planted and harvested within a year, and may include multicropping or multiple harvests and differ from total arable land or reported physical area | The total cropland supply grows over time driven by exogenous trends on the availability of area for agriculture as well as endogenous responses to changes in area demand. Each year, the amount of total crop area is fixed, and it is efficiently allocated to different crops based on crop area demand, a function of crop price, and the price of land. | thousand hectares | national, FPU†, SPAM\* | FAOSTAT commodity balances |
| **Yield** | Measure of productivity, amount harvested per area (ha). Differentiates rain fed from irrigated. | Crop yields are a function of commodity prices, prices of inputs, available water, climate, and exogenous trend factors. | mt/ha | national, FPU†, SPAM\* | FAOSTAT commodity balances |
| **Production** | Represents area harvested \* yield | Modeled at subnational FPU level through area and yield response functions. Land used for crop production is divided into irrigated and rainfed systems, capturing the significant differences in yields observed across these cultivation systems and linking directly with the water models, which treat irrigated and rainfed water supplies separately. Production is the product of area and yield, with national production equal to the summation of individual FPU production. | thousand mts | national, FPU†, SPAM\* | calculated |
| **Net trade** | Represents amount traded, where positive values indicate greater exports than imports | Commodity trade by country is a function of domestic production, domestic demand, and stock change. | thousand mts | national | FAOSTAT commodity balances |
| **Household food demand** | Represents the demand for, or availability of, food in domestic sector | Function of the price of the commodity and the prices of other competing commodities, per capita income, and total population. | thousand mts | national | FAOSTAT commodity balances |
| **World Price** | Price at which global production is satisfying global demand | The world price of a commodity is the equilibrating mechanism for traded commodities—when an exogenous shock is introduced in the model, world price will adjust to clear world markets, and each adjustment is passed back to the effective producer and consumer prices via the price transmission equations. | 2005 USD/mt | global | OECD Agricultural Market Access Database |
| **Kilocalories per person** | Availability of calories per person | Derived from the amount of calories from commodities in IMPACT. | Kcal/person/day | national | FAOSTAT food supply |
| **Population at risk of hunger** | Population at risk of suffering from malnourishment | Calculation based on empirical correlation between the share of undernourished within the total population and the relative availability of food. | millions | national | Calculated, adapted from Fischer et al. 2005 |

**IFPRI Food Data: Maize, Rice, Soy, Wheat from 2005, 2010-2050** (unless otherwise indicated)

\*SPAM = 10km by 10km grid cell, 2005 only

† FPU = food production unit, or water basins within national boundaries (n = 320)