

The Global Dynamics of Food Consumption: Opportunities for U.S. Agricultural Cooperatives

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Research Problem

- Global agricultural markets have changed dramatically over the past few decades.
 - Economic development and income growth
 - Population growth and demographic shifts
 - Agricultural production technology
 - Transportation technology
 - International trade regulations
- Agricultural exporters must understand the dynamics of the ever changing marketplace.

Research Objectives

- Identify potential future agricultural export markets for U.S. producers.
- Generalize the dynamic relationship between food consumption and income growth (economic development).
- Generalize the dynamic relationship between the consumption of specific commodities and commodity sub-groups, and income growth (economic development).
- Explain the relationship between agricultural self-sufficiency levels and income growth, land endowments, and technology.

Research Hypothesis

- Food consumption growth is a non-linear function of income and has a limit.
- The composition of food diets, as measured by major food groups, is similar among countries with similar income levels.
- Agricultural self-sufficiency is a non-linear function of income, land endowments, and production technology, and can be characterized by three distinct phases.

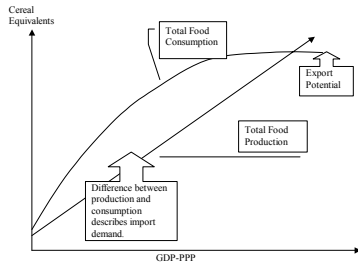
Data

- U.N. Food and Agriculture Organization
 - Food Production and Supply
 - Population
 - Land
- World Bank
 - Economic Development Data (GNI-PPP)
 - Gross national income converted to international dollars using purchasing power rates.
 - Serve as a proxy for country-specific levels of economic development.
- Sample of 101 countries, 1975-1999

Variables

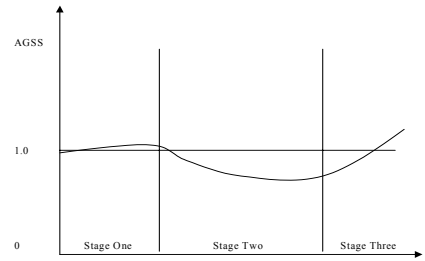
- Cereal Equivalents,
 - Similar in value to the calorie measure for basic vegetables, fruits, and grains,
 - Assign resource based values to foods that require more primary agricultural inputs for their production,
 - Incorporate the diet changing affect on food demand but exclude non-agricultural services.
- Gross National Income adjusted for purchasing power parity
- Arable land per capita
- Urbanization rates
- Technology- proxy by total agricultural yields per hectare.

Food Consumption vs. Food Production



General behavior of total food consumption and food production for a typical country at different levels of economic development.

Agricultural Self-Sufficiency



Three stages of agricultural self-sufficiency.

Emerging Agricultural Export Markets

