Value of a Food Systems Approach:

- Identifies interactions of global change with food systems
  - ✓ focus on multiple vulnerabilities within the food system
  - ✓ highlights underemphasised aspects of the food system such as storing, processing, packaging, trading and consuming food
  - ✓ analyses feedbacks to the earth system from the food system (GHG, biodiversity)
  - ✓ provides a framework for adaptation planning
- Allows analysis of multiple food system outcomes
  - ✓ food security
  - ✓ ecosystem services
  - ✓ social welfare

Global Environmental Change and Food Systems (GECAFS) is an international, interdisciplinary research project focussed on understanding the links between food security and global environmental change. Its goal is to determine strategies to cope with the impacts of global environmental change on food systems and to assess the environmental and socio-economic consequences of adaptive responses aimed at improving food security.

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A Food Systems Approach
to Food Security and Global Environmental Change Research

Food security: *'all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life'* (FAO, 1996).

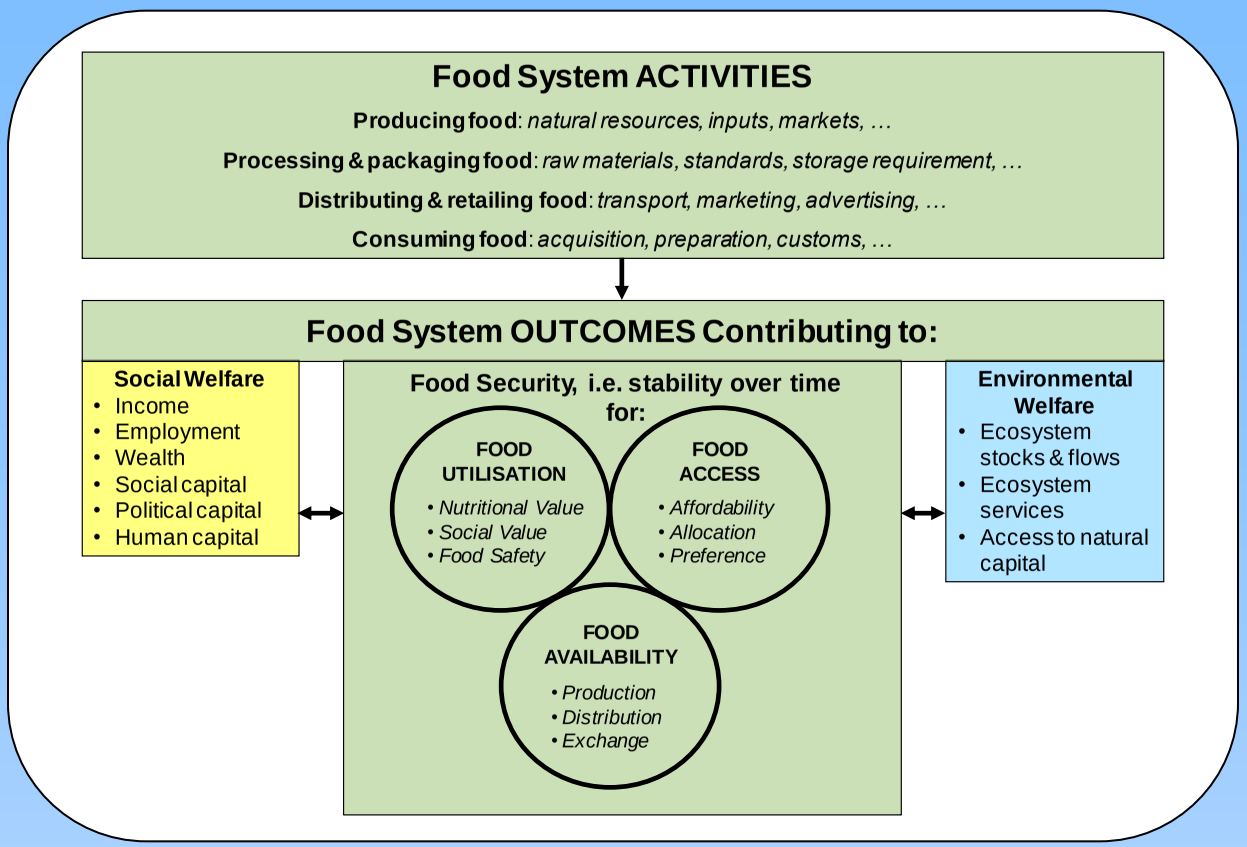
Food security is underpinned by **food systems**.

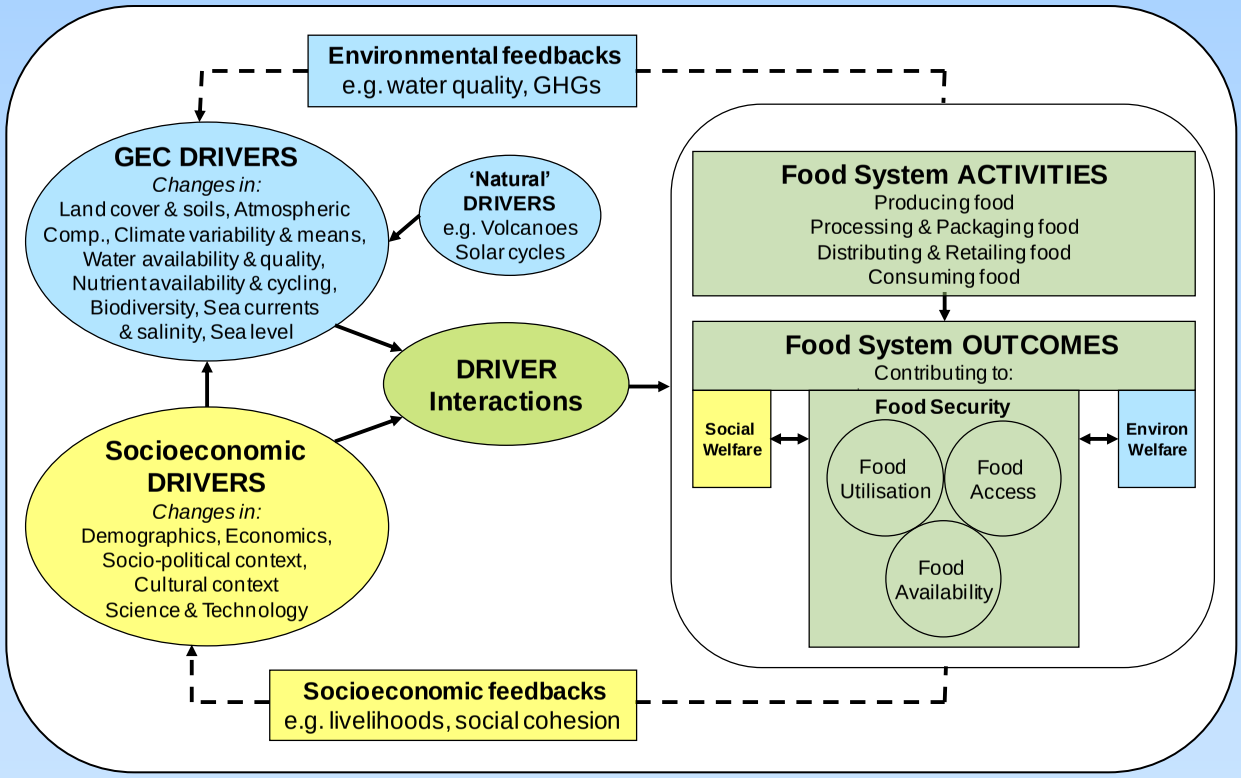
Food systems encompass (i) a set of *activities* related to the producing, processing, distributing, marketing, preparing and consuming of food; and (ii) the *outcomes* of these activities contributing to food security (food availability, food access and food utilisation).

Food systems also contribute to a range of other socioeconomic (e.g. wealth) and environmental (e.g. greenhouse gas emissions) issues.

GECAFS Global Environmental Change and Food Systems
Earth System Science Partnership

The GECAFS "Food System" concept integrates a set of Food System *Activities* and the *Outcomes* of these activities (see figure below adapted from Ericksen, 2008).





Interactions between and within biogeophysical and human environments influence both the activities and the outcomes. Food system activities and outcomes both feedback to socioeconomic and GEC drivers.