Integrating Nutrition into Food Life Cycle Assessment:

Creating a nutritionally and environmentally conscious food production system

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Importance

- Future sustainable development is dependent on the dual maximization of environmental health and nutritional food security for human health.
- Global importance with implementation of SDGs.

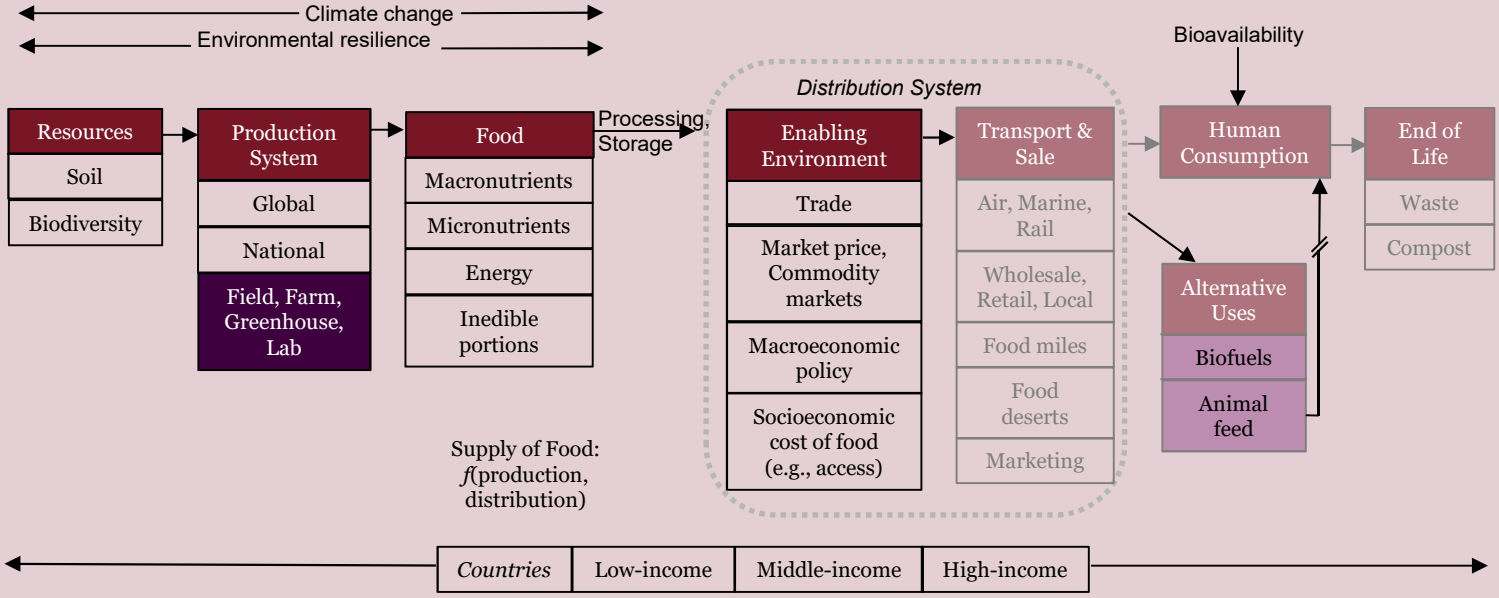
Possible Methods

- Scenario analysis
- Case studies
- Statistical data analysis
- GIS

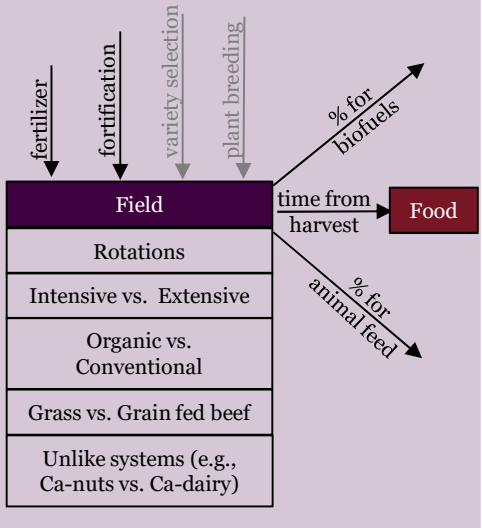
Envisaged Research Questions

- What method(s) are currently suitable or can be developed to better integrate nutrition into LCA?
- What nutritional indicators, proxies, and metrics are currently used?
- What types of tradeoffs exist between maximizing environmental and nutritional performance?
- Which (i) foods within food groups and (ii) production systems can positively contribute to environmental and nutritional impacts?
- What role can substitute products (e.g., minor crops —quinoa —) play in maximizing nutritional and environmental performance?
- How can we quantify the nutrients available for human consumption?
- Which, if any, agricultural practices maximize nutrition?
- What are the political implications of the studied interventions?

Nutritional Flows in the Food System: Boundaries of Study



Nutritional Flows at the Field/Farm Level



Role of Sustainable Food Systems

- provide nutrition and energy
- ensure access to food
- protect the environment now and in the future (e.g., ensure resilience)
- provide culturally appropriate foods/ satisfy food preferences
- ensure animal welfare
- protect human health (mental and physical)
- optimize natural and human resources
- ensure appropriate socioeconomic costs
- provide safe food

Adapted from FAO, 2010, Sustainable Diets and Biodiversity and FAO, 2014, Towards a concept of Sustainable Animal Diets

Outlook

- Global need to increase supply of and access to nutritious foods, while protecting the environment.

This project aims to:

- contribute to the nutritional/ environmental debate from a supply side perspective;
- contribute to a more holistic integration of nutrition into LCA;
- provide actionable data in support of policy and other interventions.

Directly included in study

Partially included

Out of scope

Agroscope good food, healthy environment

ETH Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich

SFP SUSTAINABLE FOOD PROCESSING

Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra

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