

## Creating a nutritionally and environmentally conscious food production system through Life Cycle Assessment Methods

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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.

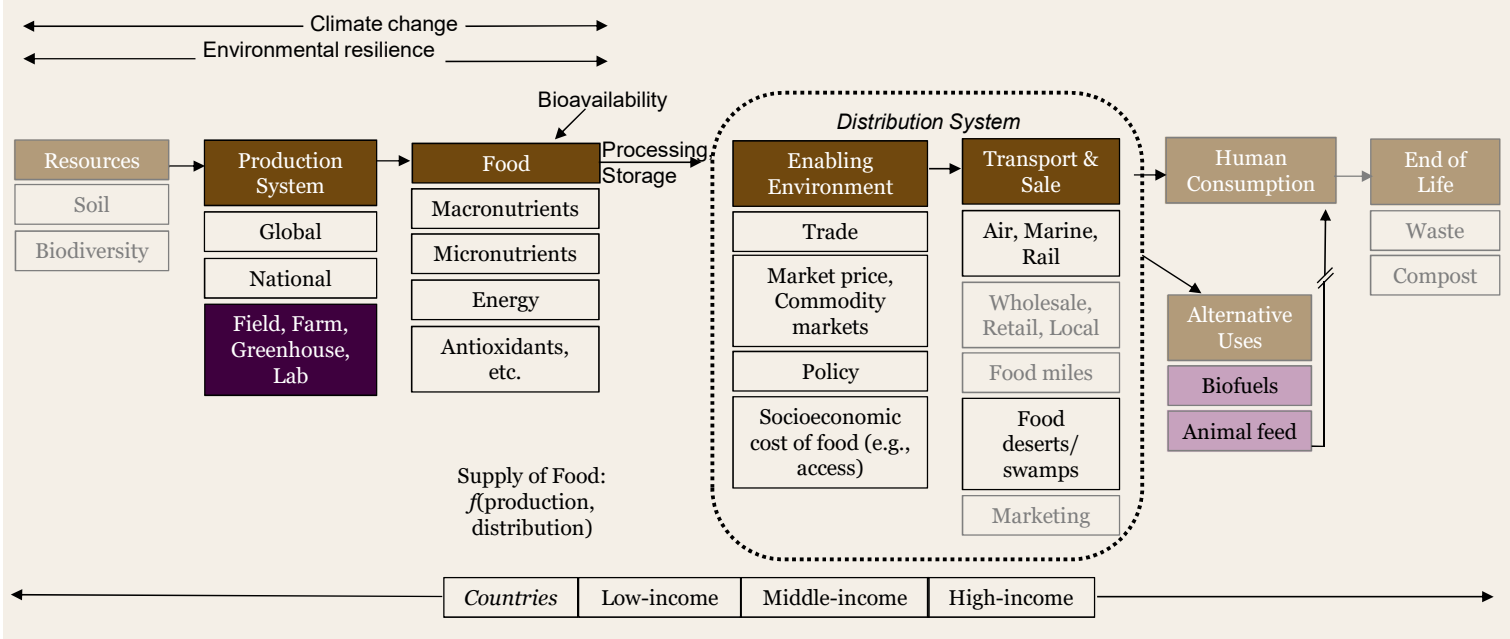
### Envisaged Research Questions

- What method(s) are currently suitable or can be developed to better integrate nutrition into LCA?

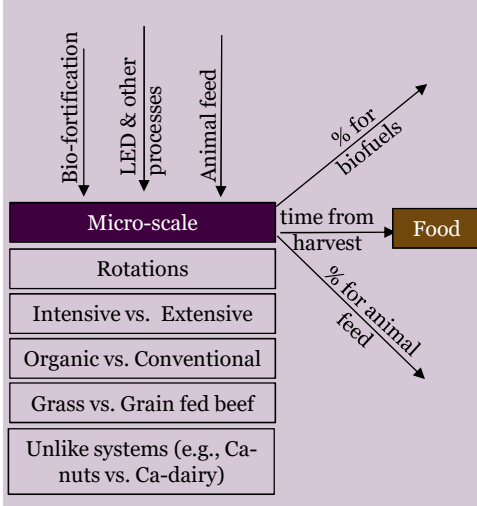
- How can we quantify the nutritional flows in our food system?
- What role can substitute products (e.g., quinoa, algae, insects) play in maximizing nutrition in our food supply?
- Which agricultural practices (e.g., organic vs. conventional) contribute most to nutritional and other sustainability outcomes?
- What metrics can we develop or establish to better assess nutrition?



### Nutritional Flows in the Food System: Boundaries of Study



### Nutritional Flows at the Micro-scale



### 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

### 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.

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