Food and Land Use
Inefficiencies across food and land use systems

Input materials
Current irrigation efficiencies are often below 50%, with large losses occurring in the conveyance system or through inefficient application to plants.

Production
Pests and diseases cause yield losses of between 17-40% on average for the world's major staple crops.²
Globally, 4% of food loss and waste occurs at the production stage.³

Livestock
Farm animals consume around 35% of total crops produced, but convert less than a quarter of this to calories for human consumption.
For every 100 calories fed to animals in the form of human-edible crops, we receive just 15-30 calories in the form of meat and milk.⁴

Processing
In the EU, nearly 40% of food losses occur during food processing, partially due to inefficiencies in the processing system and production management.⁵
Globally, 4% of food loss and waste occurs at this stage.¹

Handling, storage and transportation
Eating officially green food for one year could save the GHG equivalent to driving 1,000 miles, while eating a vegetarian meat one day a week could save the equivalent of driving 310 miles.²
21% of food loss and waste occurs at this stage of the value chain.³

Consumer waste
Every year, consumers in rich countries waste almost as much food as the entire net food production of sub-Saharan Africa.⁶
30% of food loss and waste occurs at this stage of the value chain.⁷

Distribution & Market
The US produces almost double the amount of nutrition required by its population. Despite this, around 20% of the population lacks access to affordable fresh food for a healthy diet.¹
15% of food loss and waste occurs at this stage.⁸

Over consumption
There are significant inefficiencies associated with consuming too much and the wrong kind of food needed for human nutrition.⁸
Over-eating was found to contribute more than 40% to food system losses, as much as consumer food waste.⁹

Only 10-20% of the nitrogen and phosphorus applied to crops in fertilizer actually reaches consumer's plates.¹⁰
In cities, less than 3% of valuable nutrients from organic waste gets recycled back to productive use.¹⁰

⁶ Buchner et al. (2013), Food waste: Causes, impacts and proposals, Panta Rhei Centre for Food & Nutrition.