

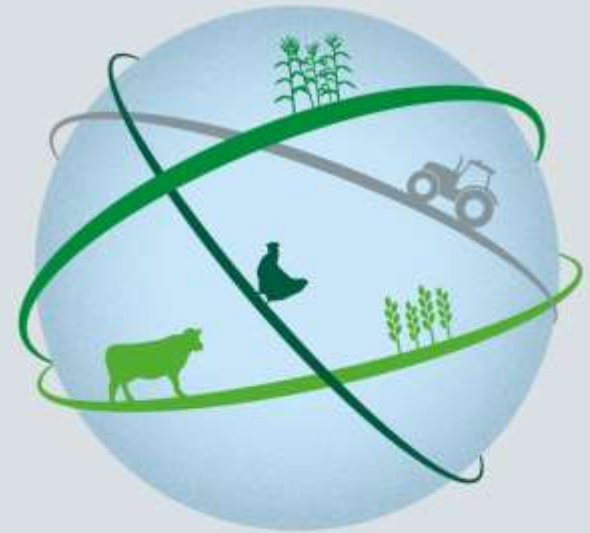


Federal Ministry  
of Food  
and Agriculture

GLOBAL  
FORUM FOR  
FOOD &  
AGRICULTURE



# Quantifying climate change impacts of food loss and waste



Dr Chanjief Chandrakumar

[bmel.de](http://bmel.de)   

**One third** of food produced for human consumption is either **lost or wasted, annually.**

Personally, **each of us, wastes** around **121 kg** of food **every year** – **74 kg** at home.



What does that  
mean in terms of  
greenhouse gases  
and climate change?

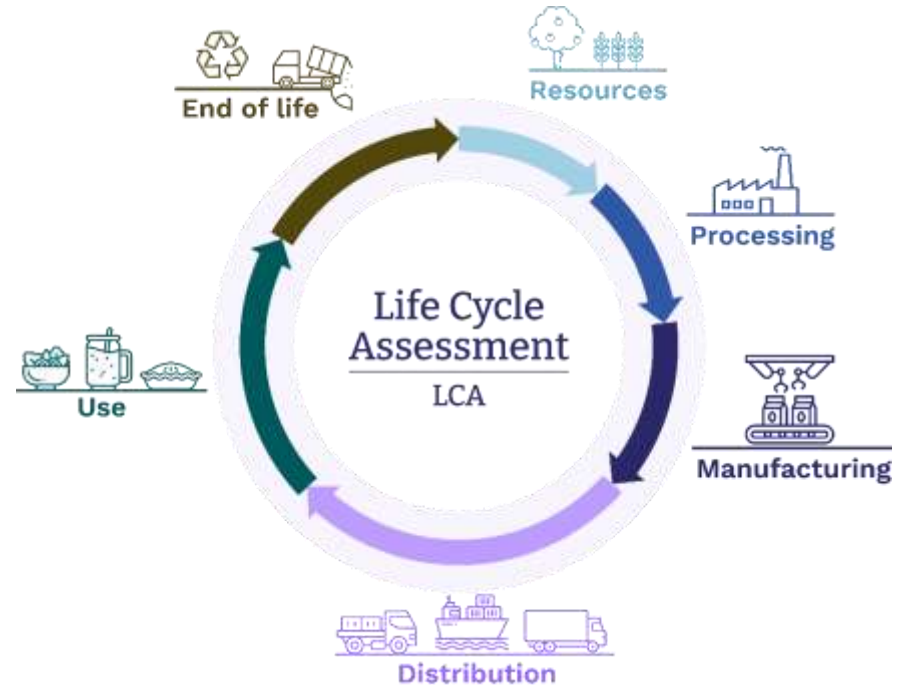


Our food system is **complex** and involves **multiple processes** and **stakeholders**.



# Methods

- Several tools/methods exist to quantify the environmental impacts related to food loss and waste.
- Life Cycle Assessment (LCA) is one of them.
- LCA evaluates the environmental impacts of a product through its entire life cycle.



Hundreds of LCAs exist  
– from product to global  
food systems.



# Beef has the biggest carbon footprint - but...



Gold Standard  
for the Global Goals  
1 ton of  
CO<sub>2</sub> offset

One Earth  
Primer

a Savoir  
faire

C. Basset-Mens, A. Avadi, C. Bessou,  
I. Acosta-Alba, Y. Biard, S. Payen, eds



Life Cycle Assessment

## Life Cycle Assessment of Food Systems

And many **MORE.**

to us  
Zeal  
com  
first  
of us

review

ELSEVIER

Life cycle assessment of food loss and waste  
in the food supply chain

Yetunde Omolayo <sup>a</sup>, Beth J. Feingold <sup>a</sup>, Roni A. Neff <sup>b</sup>, Xiaobo Xue Romeiko <sup>a</sup>  

Modelling of food loss within life cycle  
assessment: From current practice towards  
a systematisation

U

Kilograms <sup>c</sup> Sara Corrado <sup>a</sup>, Fulvio Ardente <sup>b</sup>, Serenella Sala <sup>b</sup>, Erwan Saouter <sup>b</sup>  

 Federal Ministry  
of Food  
and Agriculture

GLOBAL  
FORUM FOR  
AGRICULTURE

# Some JUICY Insights.





# Global insights

<b>2.5 billion</b>	Food loss and waste generated annually = 2.5 billion tonnes
<b>4.4 GtCO<sub>2</sub>-eq</b>	Total greenhouse gas emissions = 4.4 GtCO <sub>2</sub> -eq
<b>10%</b>	Roughly 10% of all human-caused greenhouse gases are related to food waste and loss
<b>3<sup>rd</sup></b>	If food loss and waste were a country, it would be in third place for greenhouse gas emissions behind China and US
<b>1/3</b>	One-third of total global greenhouse gas emissions come from agriculture
<b>1</b>	Food waste is the world's top contributor of methane into the atmosphere

## Regional insights - EU

<b>88 million</b>	Food waste generated annually = 88 million tonnes
<b>170 MtCO<sub>2</sub>-eq</b>	Total greenhouse gas emissions = 170 MtCO <sub>2</sub> -eq
<b>10%</b>	~10% of the 88 million tonnes of food waste are somehow linked to date labelling
<b>53%</b>	53% of consumers don't know the meaning of 'best before' labelling
<b>60%</b>	60% of consumers don't know the meaning of 'use by' labelling

## Regional Insights - US

**60 million**

Food waste generated annually = 60 million tonnes

**40%**

Food waste is almost 40% of the entire US food supply

**975**

This is equivalent to every person in America throwing 975 average- sized apples into the rubbish — or landfills

**22%**

Food is the single largest component taking up space inside US landfills: 22% of municipal solid waste

Food loss and waste is now being targeted globally to reduce resource use and mitigate impacts.



Finding **solutions** for food loss and waste must be a **priority**.



We need a **range** of **localised** but **coordinated efforts** at each stage of the agri-food supply chain. **Everyone** has a **role** to play.



Thank you

Chanjief Chandrakumar

LCA Team Lead, thinkstep-anz

[Chanjief.Chandrakumar@thinkstep-anz.com](mailto:Chanjief.Chandrakumar@thinkstep-anz.com)