

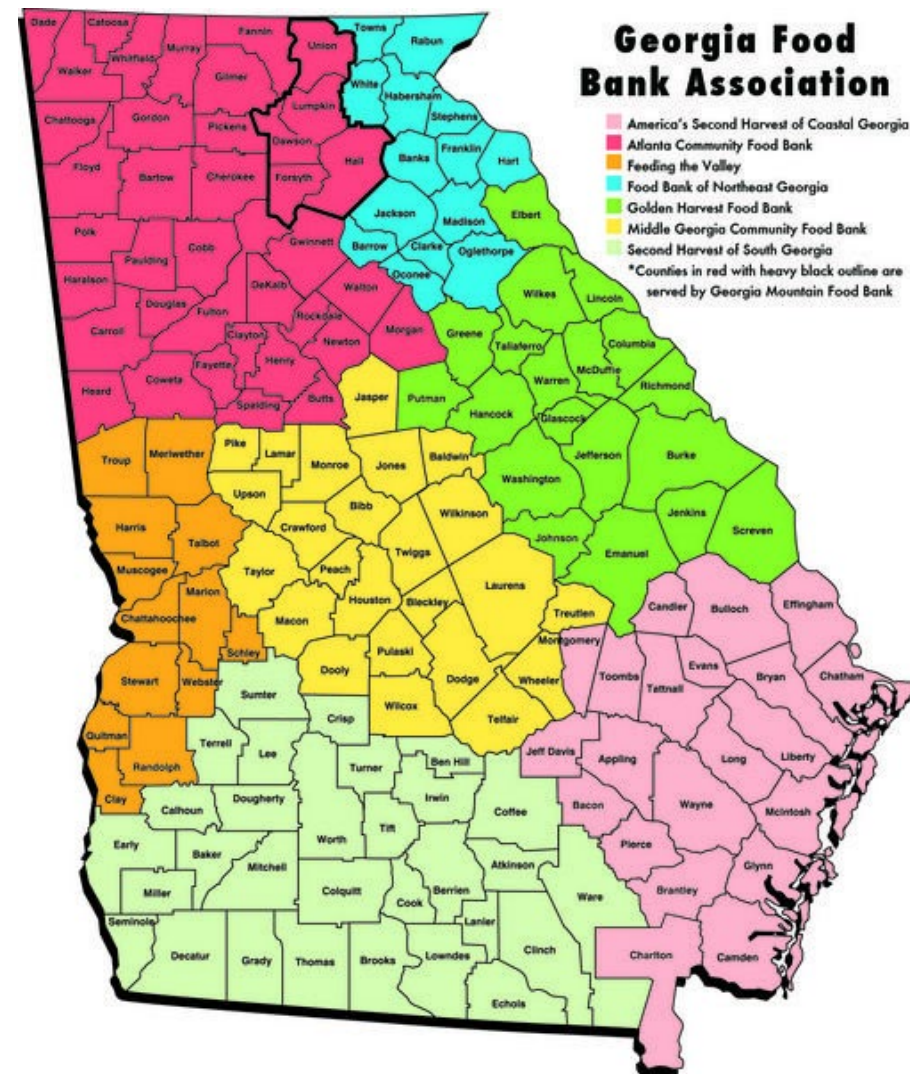
Reduced Food Waste

Current Food Waste:
2.1 million tons

Technical Potential:
Reduction of
4.5 Mt CO₂ in 2030

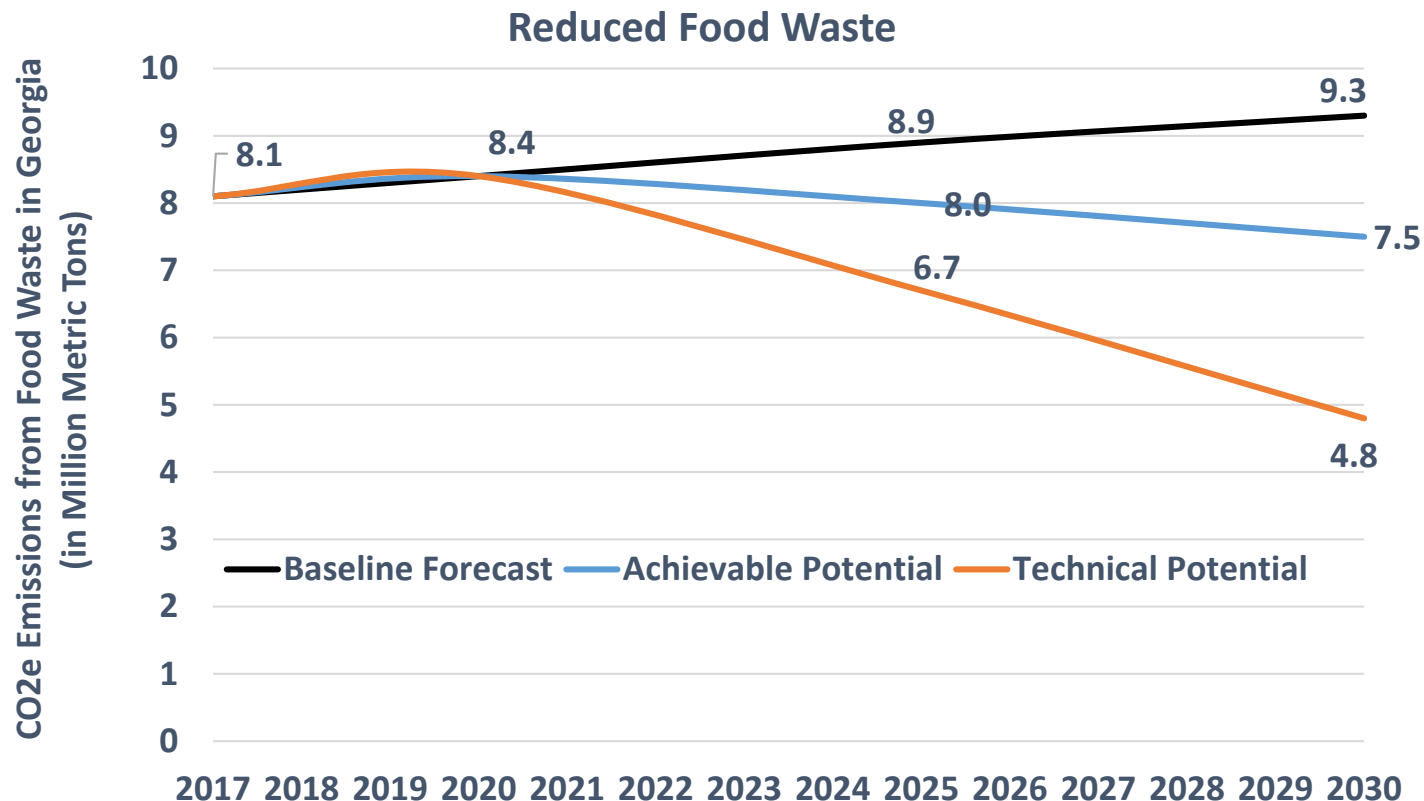
Achievable Potential:
Reduction of
1.8 Mt CO₂ in 2030

- About 30-40% of food is wasted in retail and consumer levels.
- Reuse of food via food banks [7] reduces the food waste to some extent (up to 5%)
- Key obstacles include limited communication between food supply and demand, consumer behavior, lack of awareness, poor labeling and limited storage capacity.
- Data-Driven food waste/loss reduction solutions are critical to reduce food wastes



Reduced Food Waste

A strong connection to climate change



Baseline = Estimate based on emissions due to food production and current disposal methods.

Achievable Potential = 20% reduction of food wastes/losses reduces **1.8 MMtCO₂** in 2030 (equivalent to about 0.5 million ton)

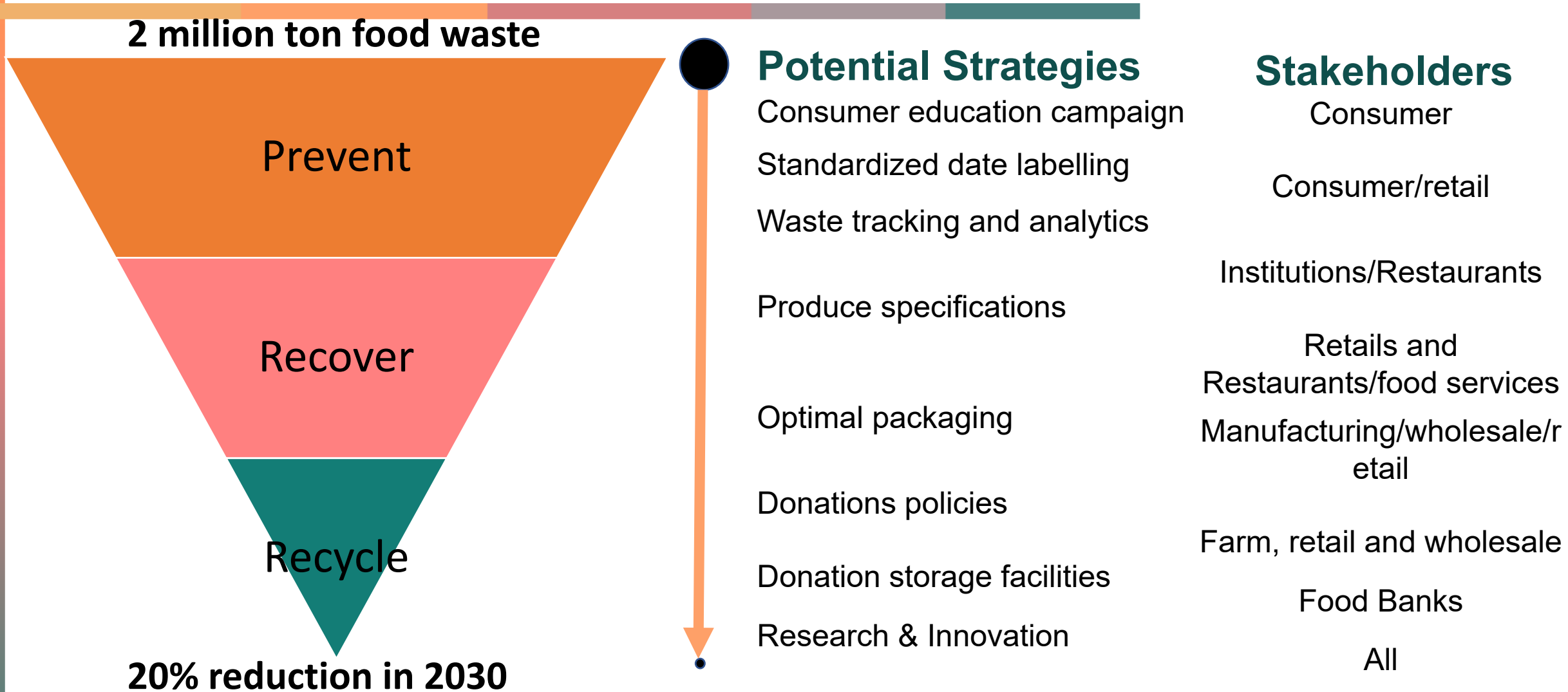
Technical Potential = 50% reduction of food waste/losses reduces **4.5 MMtCO₂** in 2030.

- + More job creation
- + Cost saving
- + Less food insecurity
- + Less air and water pollutions
- + Food donation tax benefits

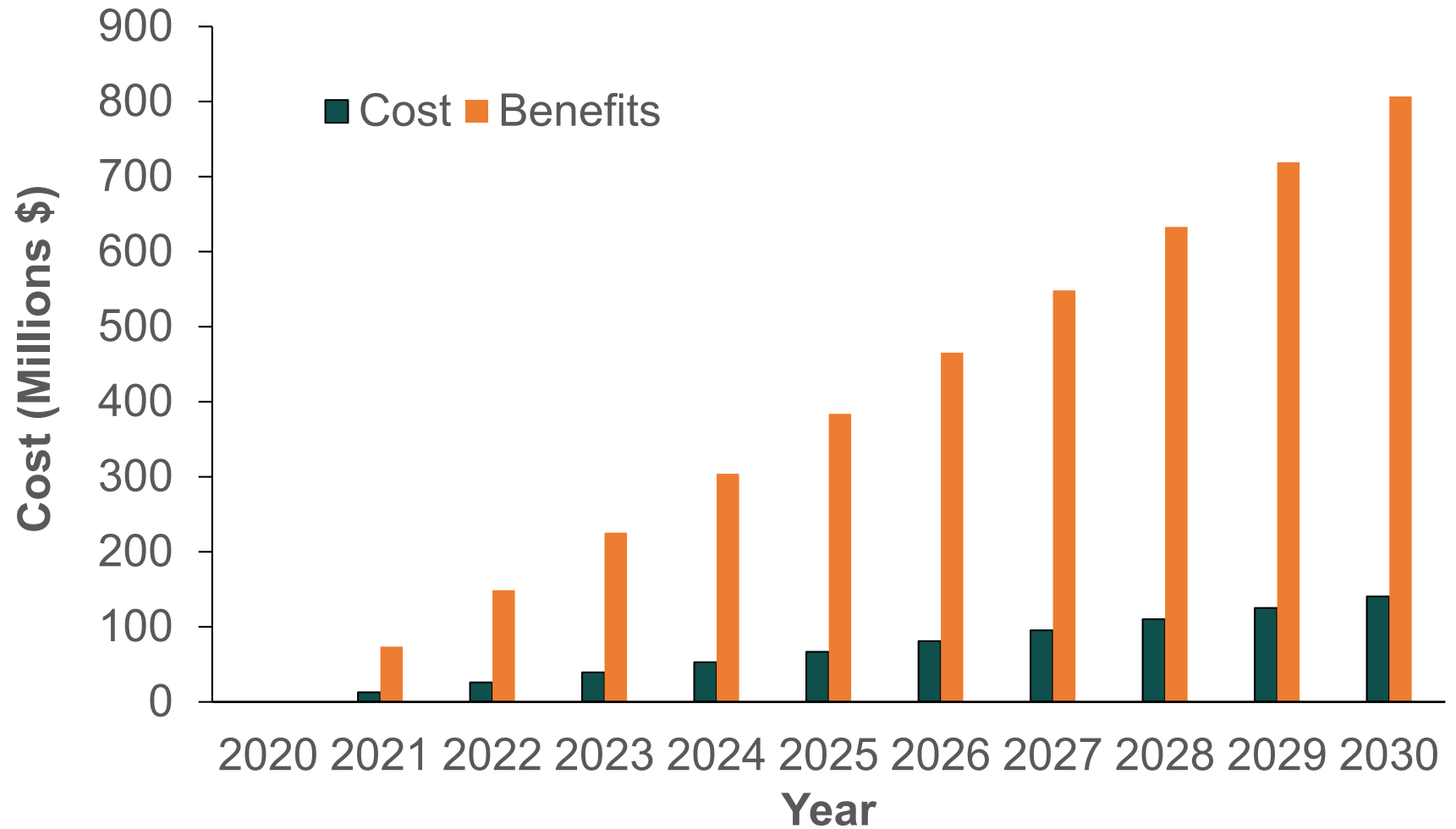
	Avoided CO _{2-e} (MMt) in 2030
Achievable	1.8
Technical	4.5

Annually, about 2.1 million tons of food wastes along the supply chain from production to final disposal.

Strategies to reduce food wastes - A path towards zero food waste



Cost & Benefits of Reducing Food Waste



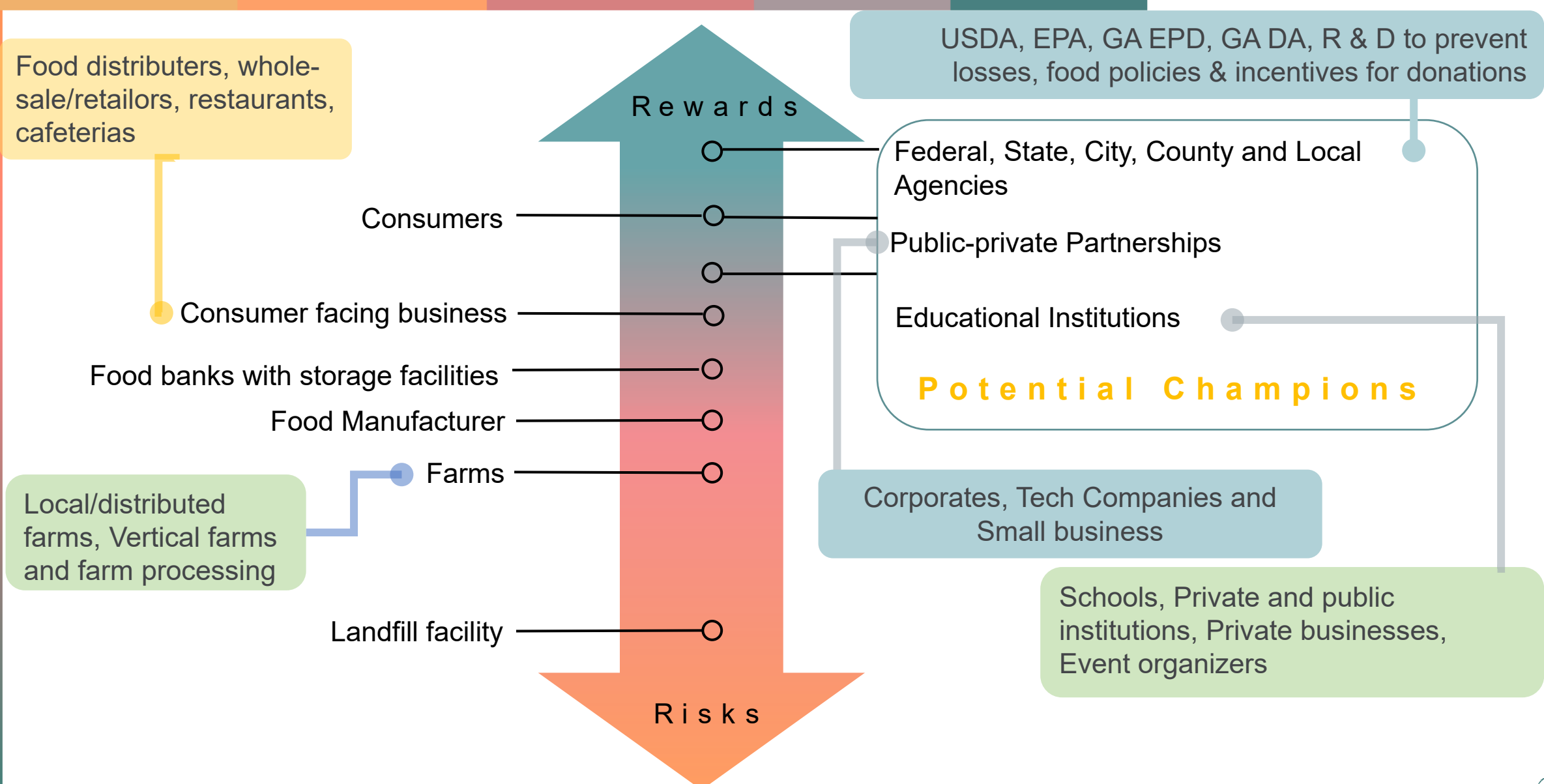
Cost Estimated to reduce about 0.5 million tons in 2030 using various prevention and reuse strategies.

Benefits On average every pounds of food saved or prevented is equivalent to about \$0.8 to \$1.7 saved.

The average carbon abatement cost is about -336 (2017\$/t CO2-e)



Stakeholder Analysis of Reduced Food Waste



Reducing Food Waste Solution Interactions

Conservation Agriculture

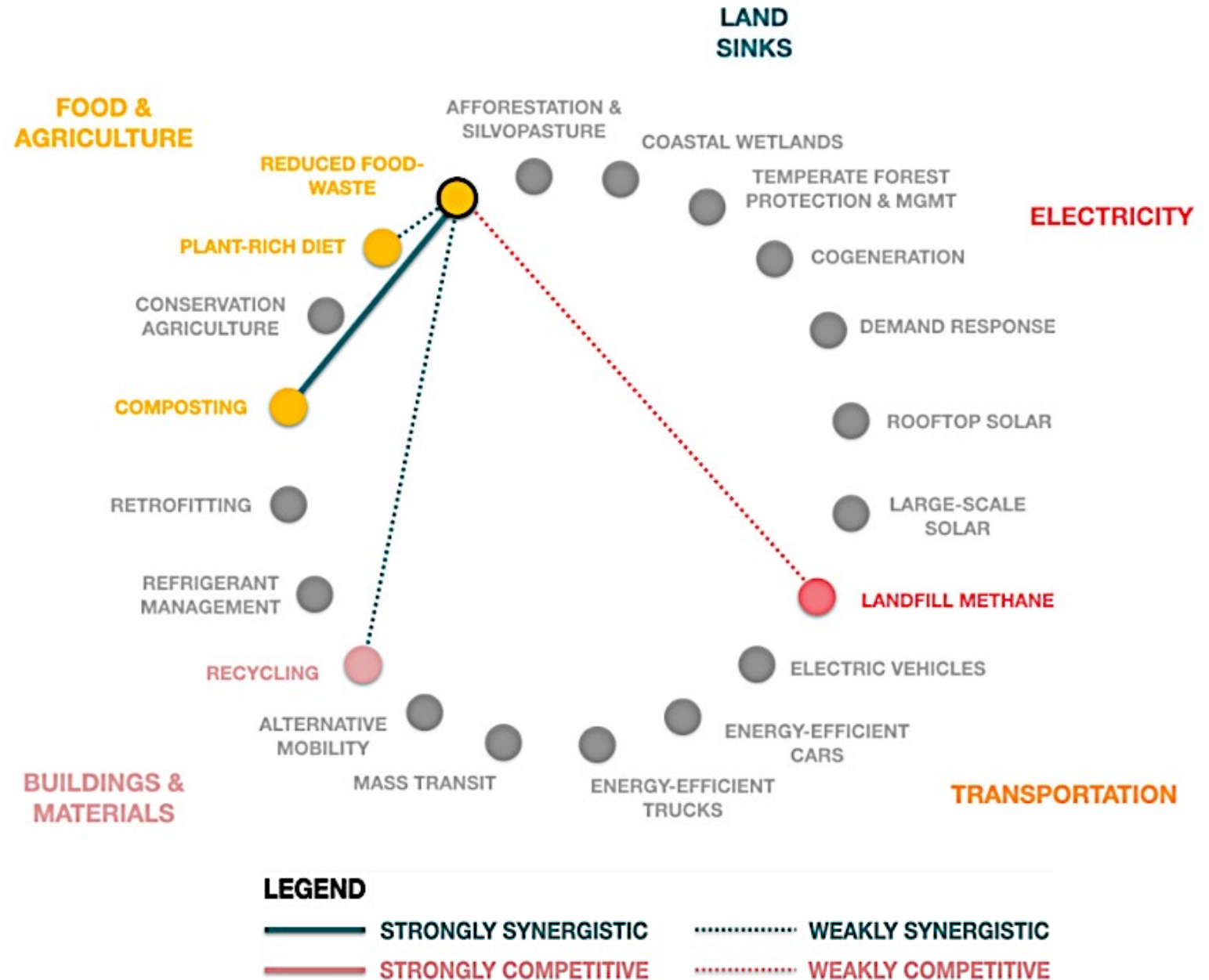
- Farmers are the common beneficiary for Reducing Food Waste and Conservation Agriculture. The accessibility to networks/markets to address these 2 topics will have significant overlaps in stakeholders

Landfill Methane

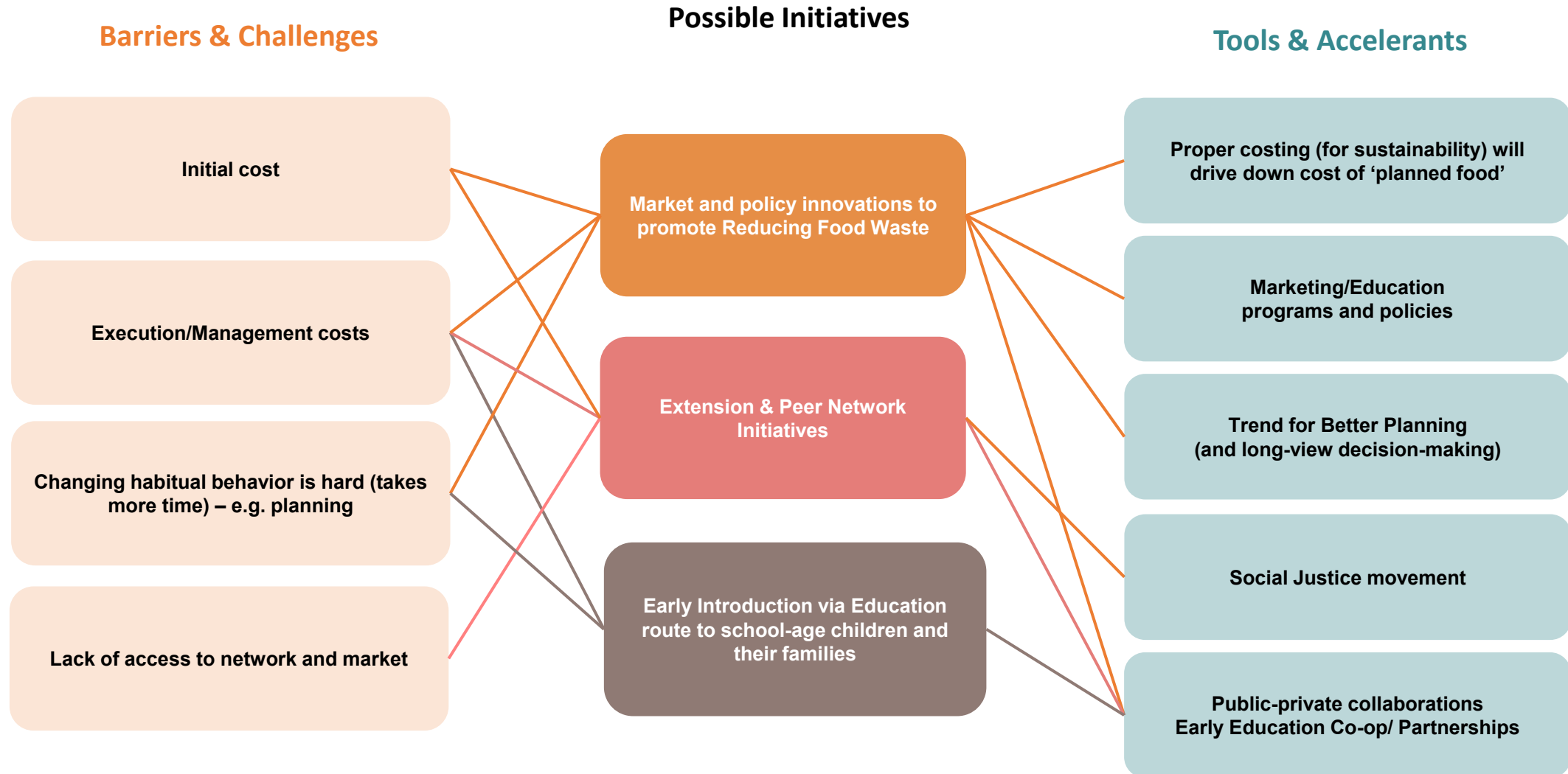
- Reduction in Food Waste will translate linearly to Landfill Methane reduction

Composting & Plant-rich Diet

- Plant-rich diet and Composting are synergistic with Reducing Food Waste to enable closed-loop cycle for farming



Reducing Food Waste: Challenges and Possible Initiatives





Corresponding author:
Dr. Sudhagar Mani
Professor, School of Chemicals,
Materials, and Biomedical Engineering
University of Georgia
Phone: 706-542-2358
Email: smani@engr.uga.edu
0155F Riverbend Research Center North
110 Riverbend Road, Athens, GA, 30602

