



# Food Waste and the Environment

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# Rutgers Cooperative Extension

- Rutgers Cooperative Extension is the **outreach** arm of Rutgers University and we provide education and outreach to all 21 counties of NJ.
- There are 4 main arms of Rutgers Cooperative Extension
  - Agriculture and Environment
  - 4H: Youth Development
  - **Family & Community Health Sciences**
  - Expanded Food and Nutrition Education Program (EFNEP)

# Outline

- Background on Food Waste
  - General Statistics on food waste
  - Difference between food loss and food waste
  - Where food waste occurs in the food system
- Food Waste Legislation
- Case Study of Food Waste in Schools
- What can we all do to reduce food waste

# Facts about Food Waste

- ~ 30 – 40% of the food supply is food waste.
- In 2010, ~133 billion pounds of food (\$161 billion) from U.S. retail food stores, restaurants, and homes went uneaten.
- Land, water, labor, energy and other inputs used in producing, processing, transporting, preparing, storing, and disposing of discarded food is wasted.
- Food waste in landfills cost Americans > \$2 billion a year.



# Climate Change and Food Waste

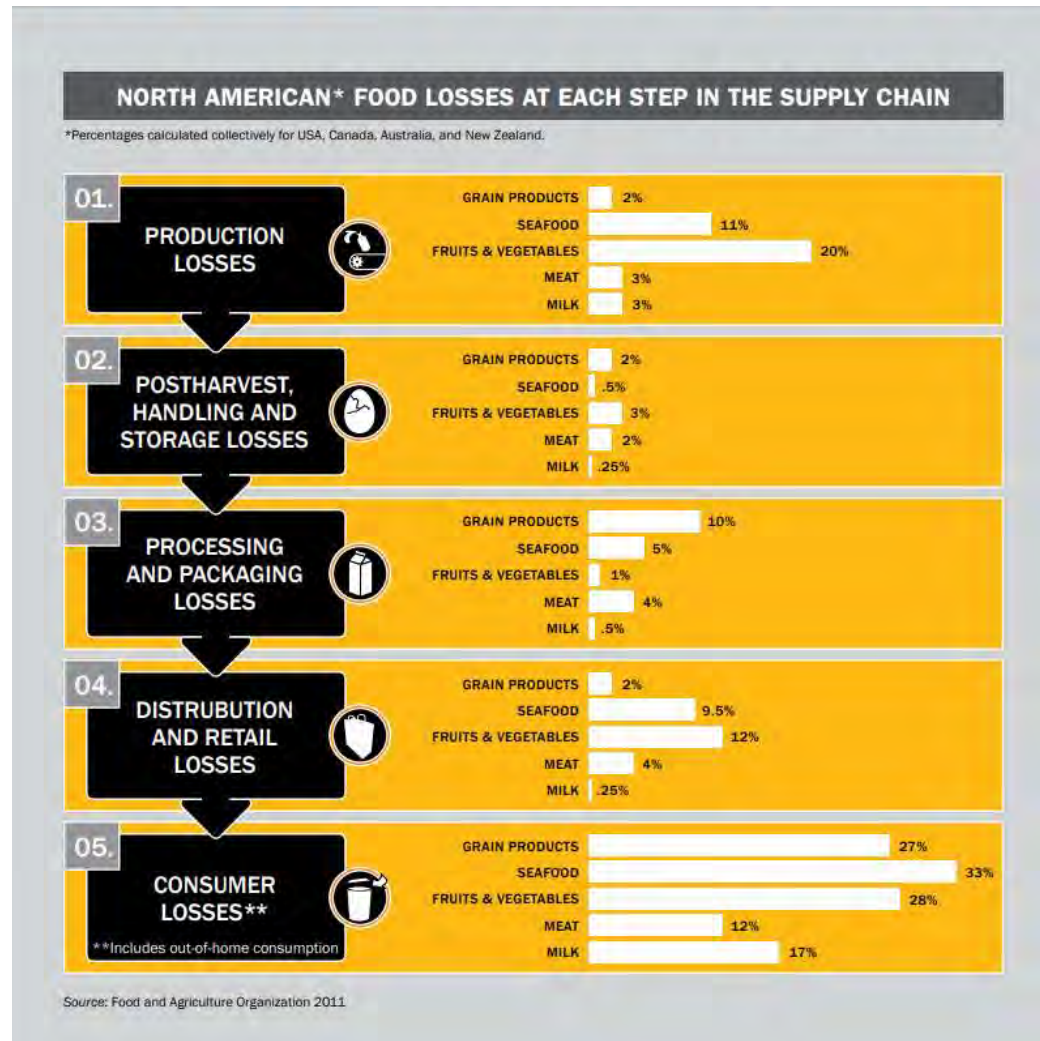
- According to Project Draw Down, to stop at 2 degrees of warming, these are the most important things to focus on
  - **Reduced food waste**
  - Health and education
  - Plant-rich diets
  - Refrigerant management
  - Tropical forest restoration
  - Onshore wind
  - Alternative refrigerants
  - Utility-scale solar power
  - Improved clean cookstoves
  - Distributed solar power



## Food Loss **Vs.** Food Waste

- Food Loss
  - Food that is wasted upstream in the food supply chain, such as at the production, harvest, and storage stages, are generally considered “food losses.”
- Food Waste
  - Food waste downstream in the food supply chain, such as at the retail or consumer level is considered “food waste”.

# Defining Food Loss & Food Waste



# Waste Centered **Vs.** Food Centered Food Waste

- Waste-Centered Approach:
  - Considerations of all kinds of food waste including non-edible portions of food; this approach focuses on how to reduce food loss for environmental purposes.
- Food-Centered Approach:
  - Focuses on food that is intended for human consumption and may allow for permissible discarding of food for food safety reasons or non-edible portions of food.



# **FOOD LOSS & WASTE IN THE FOOD SYSTEM**

# Food Loss in Production

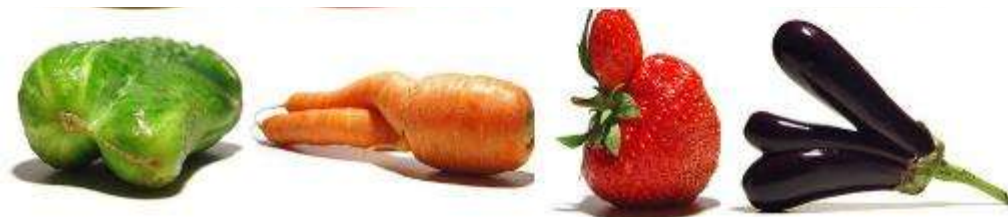


- Main Drivers

- Weather/ Disease
- Market Conditions
- Buyer Standards
- Labor Shortages
- Food Safety Threats
- Order Changes
- Bycatch (seafood)

- Potential Solutions

- Broaden standards for physical condition of foods
- Second Market for imperfect food
- Improve labor laws for farm laborers
- Expand farm level food recovery
- Create regional food networks



# Food Loss in Processing



- Main Drivers:

- Trimming: Removing edible portions of food
- Processing inefficient
- Equipment, Packaging and forecasting errors: mistakes and malfunctions can cause surplus food to spoil



- Potential Solutions

- Reengineering production process to minimize waste
- Develop secondary use for byproducts such as trims and peels
- Employ standardized system of date labels to reduce confusion.

## Food Loss in Distribution



- Main Drivers
  - Improper holding: lengthy transport, not enough cold chain
  - Food Expiration: Order changes, Backup at loading ports etc.
  - Rejected Shipments: foods with short shelf life or limited buyers
- Potential Solutions
  - Ensure proper training for handling and storage
  - Establish online marketplace for short-life produce or rejected shipments
  - Expand fresh food donations infrastructure.



# Food Waste in Retail



- Main Drivers
  - Stock Management
  - Display
  - Prepared foods
  - Date Labels
  - Packing
  - Promotional Products
  - Staffing challenges



- Potential Solutions
  - Streamline inventory
  - Discount older or slightly damaged items
  - Redesign produce, deli and seafood displays to reduce damage
  - Improve packaging methods (vacuum-packaged meats)
  - Utilize damaged produce
  - Increase donations from store to food rescue

# Food Waste in Food Service Sector



- Main Drivers
  - Portions are increasing
  - Expansive menu options
  - Sales fluctuation
  - Kitchen practices
  - Rigid management
  - School Lunch restrictions
- Potential Solutions
  - Reduce menu choice
  - Provide flexible portions
  - Scale back production
  - Remove trays in all you can eat cafes
  - Encourage diners to take leftovers home
  - Staff training
  - Increase donations







## Food Waste at Home

- Main Drivers
  - Lack of awareness
  - Confusion over date labels
  - Poor storage
  - Poor planning
  - Impulse buying and Purchases
  - Overproduction



- Potential Solutions
  - Policy level
    - Simplify date labels
    - Educate on better food management
    - Infrastructure for Composting
  - Individual level
    - Planning before shopping
    - Understand date labels
    - Prepare the right amount
    - Freeze food before spoils
    - Declutter fridge and kitchen
    - Share food

# **FOOD WASTE GOALS AND LEGISLATION IN THE US AND NJ**



# USDA & EPA Food Waste Challenge



On September 16, 2015, the first-ever national food loss and waste goal in the United States was launched, calling for a 50% reduction by 2030.

## Legislative Genesis

### Food Waste Bill S3027

- Signed August 2017
- Establishes 50% MSW food waste reduction by 2030



### Food Waste Bill A3056

- Signed August 2017
- Requests guidelines to be written for K-12 and higher education institutions to reduce, recover and recycle food waste



Source: Emily DeMaio, NJDEP [Emily.DeMaio@dep.nj.gov](mailto:Emily.DeMaio@dep.nj.gov)

## Legislative Genesis

The A3056 food waste bill requires the NJ Department of Agriculture, the NJ Department of Education, the NJ Department of Health, the NJ Department of Environmental Protection and the NJ Office of the Secretary of Higher Education to develop five categories of guidelines for K-8, Secondary, and Higher Education to reduce food waste in schools.

§1 –  
C.13:1E-99.115

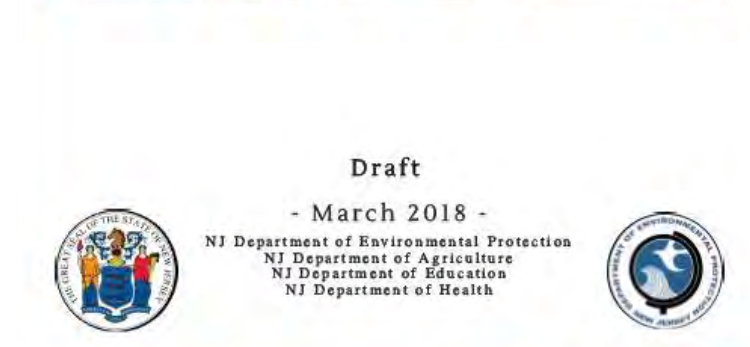
P.L.2017, CHAPTER 210, *approved August 7, 2017*  
Assembly, No. 3056 (*Second Reprint*)

1 AN ACT concerning <sup>2</sup>[the donation of excess food by school  
2 districts] food waste in K-12 schools<sup>2</sup> and institutions of higher  
3 education, supplementing Title <sup>2</sup>[4] 13<sup>2</sup> of the Revised Statutes,  
4 and amending P.L.1982, c.178.  
5

Source: Emily DeMaio, NJDEP [Emily.DeMaio@dep.nj.gov](mailto:Emily.DeMaio@dep.nj.gov)

# NJ State Food Waste Guidelines

- In August 2017, the first Food Waste legislation in New Jersey was passed.
- Bill S3027 establishes that NJ will reduce its Municipal Solid Food Waste by 50% come 2030.
- Bill A306 requires NJDEP, NJDH and NJDE to create the first ever Food Waste guidelines for schools in NJ.

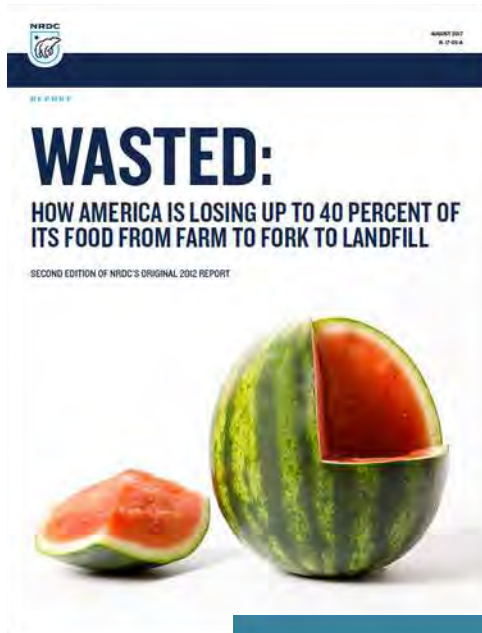




# How to Reduce Food Waste?



# Great Resources



**THANK YOU FOR YOUR TIME**