Wasted

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Professor Tony Worsley
Why did you come to this presentation and what are you hoping to learn?
Outline

- Context of the issue
- Australian food system
- Why does waste matter?
- What is wasted, how much is wasted, who wastes it and why?
- The role of Home Economics
- Basic topics
- Lesson planning ideas
Food Insecurity

- Call for action as state food security at risk
  - The Age, 2 November 2008

- Forced to live in hunger
  - Sydney Morning Herald, 25 August 2008

- Pressure on budgets: price of basic foods rising at checkouts
  - Courier Mail, 31 July 2008

- Global plan needed ‘to tackle food crisis’
  - The Australian, 4 June 2008

- New face of hunger
  - The Economist, 18 April 2008
Waste

- Food waste in Australia
  - Notebook: magazine, September 2008

- Ugly fruit and veg make a comeback
  - The Independent World, 13 November 2008

- The food we waste
  - WRAP, April 2008
WRAP: The food we waste report
Food insecurity + Waste = ?
Australian Food System

Farmer → Wholesaler → Supermarket or Green Grocer → Consumer
### Australian Food System

<table>
<thead>
<tr>
<th>Pre-Primary Industry</th>
<th>INPUTS</th>
<th>OUTPUTS</th>
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<tbody>
<tr>
<td></td>
<td>Water</td>
<td>Seeds</td>
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<td></td>
<td>Energy</td>
<td>Equipment</td>
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<td>Transport</td>
<td>Chemical Inputs</td>
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<td>Breeding and Seed Development</td>
<td>Desirable</td>
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<td>Seed Production</td>
<td>Undesirable</td>
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<td>Equipment Development</td>
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<td>Chemical Production</td>
<td>Chemical Inputs</td>
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<td>Wild Harvesting*</td>
<td>Emissions</td>
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<td></td>
<td>Raw Agricultural Products</td>
<td>Waste Water</td>
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<td></td>
<td>Processing (Crude)</td>
<td>Solid Waste</td>
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<td>Processing (Refined)</td>
<td>Green Waste</td>
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<td>Packing</td>
<td>Sensory Pollution</td>
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<td>Food Service</td>
<td>Profit</td>
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<td>Merchants</td>
<td>Emissions</td>
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<td></td>
<td>Wholesalers</td>
<td>Waste Water</td>
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<td>Supermarkets</td>
<td>Solid Waste</td>
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<td></td>
<td>Green Grocers</td>
<td>Green Waste</td>
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<td></td>
<td>Consumers</td>
<td>Sensory Pollution</td>
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<td>Waste Disposal</td>
<td>Reusable Food</td>
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<td>Recycling / Decycling</td>
<td>Green Waste</td>
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<td>Food Rescuers</td>
<td>Recycled Products</td>
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<td>Reuseable Food</td>
<td>Emissions</td>
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<td>Waste Water</td>
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<td></td>
<td>Recycled Products</td>
<td>Solid Waste</td>
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<tr>
<td></td>
<td>Decycled Products</td>
<td>Sensory Pollution</td>
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</table>

*Wild harvesting has a very limited relationship with pre-primary industry.*
Why do we care about food waste?
Why do we care about food waste?

- Environment
  - Greenhouse gas emissions
  - Water
  - Biodiversity loss and ecosystem damage

- Money
  - Rising household expenses

- Time

- Health
  - Foul odors
  - Disease vector breeding
Culpability

Paul Gepts 2006: agronomy.ucdavis.edu/.../crop/mango/mango1.gif
What is waste?
What is waste?

Unavoidable
Possibly Avoidable
Avoidable
How much is wasted?

- Household level: $5.3 billion / annually
  - About $265 per person = Ipod Nano and accessories

- Sales (retailers, restaurants, caterers, etc…)

- Manufacturing

- Logistics (transport and storage)

- Farms
Household level wastage

Unavoidable: 19%
Possibly Avoidable: 20%
Avoidable: 61%
What is wasted?

- Top 4 wasted foods:
  - Potatoes (1/2 are whole and untouched)
  - Bread
  - Apples
  - Meat and fish meals

- Top 3 foods bought and thrown away uneaten:
  - Salad (45% by weight and 60% by cost)
  - Baked goods (31% weight)
  - Fruit (26% weight)
What is wasted? (continued)

- Preparation of wasted food:
  - Fresh, raw or minimally processed: 46%
  - Cooked or prepared in some way: 27%
  - Ready to consume: 20%
Who wastes?

- We all waste food.

- The average person wastes their weight in food each year.

- Single person households and large households waste the most food per capita.
Why do people waste?

- Top reasons for throwing away edible food:
  - Left on the plate after a meal
  - Passed its date
  - Looked, smelt or tasted bad
  - Went moldy
  - Left over from cooking
Why do people waste?

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  - Went moldy
  - Left over from cooking
Who cares?

- Once aware of the implications of food waste, wasting less is flagged as a priority for behaviour change across all segments of the population.

- Barriers:
  - Best before dates
  - Supermarket offers (e.g. Buy One Get One Free)
The Role of Home Economics

- Enable
  - Raise awareness and teach practical skills
- Encourage
  - Reinforce skills and provide support
- Engage
  - Seek participation and novel ideas
- Exemplify
  - Take on a consistent leadership role
What can be done?

- **Reduce**
  - Meal planning
  - Understanding Use By / Best Before dates
  - Portion planning – [www.lovefoodhatewaste.com](http://www.lovefoodhatewaste.com)

- **Reuse**
  - Managing your stock and leftovers

- **Recycle**
  - Composting
  - Worm bins
  - Animal food
Reduce: Meal planning

- Number of people within a household
- Number of meals to be prepared
- Different eating patterns and tastes
- Time
- Utilization of leftovers
Reduce: Best before and Use by dates

**STANDARD 1.2.5**

**DATE MARKING OF FOOD**

**Best-before date**, in relation to a package of food, means the date which signifies the end of the period during which the intact package of food, if stored in accordance with any stated storage conditions, will remain fully marketable and will retain any specific qualities for which express or implied claims have been made.

**Use-by date**, in relation to a package of food, means the date which signifies the end of the estimated period if stored in accordance with any stated storage conditions, after which the intact package of food should not be consumed because of health and safety reasons.

- **Best before date**
  - This date refers to the quality of the food, rather than the safety of the food. Foods with a ‘best before’ date should be safe to eat after the stated date, but they may not be at their best.

- **Use by date**
  - This date refers to the safety of the food. Never eat products after this date and follow the storage instructions. However, some food can be frozen if you need it to eat at a later date.
Perfect Portions

The portion planner removes the guesswork by suggesting how much to cook, depending on who's coming for dinner, and ways to measure it. Thanks to the NHS 5 A Day website for the fruit and vegetable portion information.

For Christmas and other occasions when you may be serving many types of vegetables in one meal the individual portion sizes may be smaller.
Perfect Portions

The portion planner removes the guesswork by asking who's coming for dinner, and what type of meal you'll be having. It allows you to enter how many people will be eating, so it can help you decide how much to cook, depending on your dietary requirements.

For Christmas and other occasions, you may want to serve many types of vegetables in one sitting. The Perfect Portion calculator can help you estimate serving sizes in one step.

Tools to help you measure your perfect portions...

- **Mug**: A 300ml mug is perfect for measuring wet ingredients like rice. 1 solid portion = 1/4 mug.
- **Tablespoon**: Good for measuring wet ingredients like rice, beans, and dried fruit. 1 solid portion = 1 tablespoon.
- **Spaghetti measure**: Great for measuring pasta. 1 solid portion = 20cm of spaghetti.
- **Weighting scale**: Use your kitchen scales for accuracy. Follow the perfect portion calculator.
Portion calculator

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![Portion calculator interface](image)

**Tools to help you measure your perfect portions...**

- **A 300ml mug**: Good for measuring uncooked rice. 1 adult portion = 1½ mug.
- **Tablespoons**: Good for measuring out portions of rice, bread and dried fruits.
- **Spaghetti measure**: Use to measure pasta. Start with a spaghetti measure.
- **Wet weighing scales**: Use these weighing scales for accuracy. Follow the weight guide.
Reuse?

Carter Comics
static.flickr.com/31/110758852_66b222cb0f_o.jpg
Reuse: Managing your stock

- Cupboard Essentials
  - Vary by culture and eating pattern
- Refrigerator survey
  - Know what you have
  - Correct temperature (1-5°C)
- Recipes using specific ingredients
  - [www.lovefoodhatewaste.com](http://www.lovefoodhatewaste.com)
  - [www.allrecipes.com](http://www.allrecipes.com)
  - [www.myrecipes.com](http://www.myrecipes.com)
Recycle: Composting

- Define
  - Compost is the aerobically decomposed remnants of organic matter. That means that compost is the remains of living things that have broken down in an environment with oxygen.

- Necessary resources
  - Space, shovel, ideally an aerated container, browns and greens

- What can and can’t be composted
  - Yes: Garden waste, food waste, coffee grounds, tea bags, paper filters
  - No: meat, bones, grease, pet waste

- Problem shooting
Recycle: Worm bin

- **Define**
  - Vermicompost (worm compost) is a form of composting that utilizes some species of earthworm to break down organic matter.

- **Necessary resources**
  - Worm bin, shovel, browns and greens

- **What can and can’t be placed in a worm bin**
  - Yes: coffee grounds, tea bags, paper filters, food waste
  - No: citrus peels (but citrus is ok), products sprayed with pesticides, fruit stones, onions, garlic and salt

- **Problem shooting**
Recycle: Pet food

Unknown: FreeFoto.com
Great Resources

- WRAP: www.lovefoodhatewaste.com

- Notebook Magazine: Stop Food Waste! Campaign
Lesson Ideas

- Food insecurity news article
- Classroom composting
- Draw a body’s worth of waste
- How much do I waste?
- Food management survival
Your Body in Waste

Name: __________________________
Date: __________________________

Please draw a self-portrait of yourself as food waste. What would you look like if “you are what you eat” or “you are what you waste”? 
Three Day Food Waste Diary  
Name: __________________________  
Date: __________________________  
To complete this assignment you must keep track of your wastage for 3 consecutive days. Each time that you throw away any food, write down the time, what you threw away, how much, why you threw it away and how you disposed of it. Do your best to estimate amounts. When writing down why you threw food away, please choose from the following options:

- Prepared and served, but not eaten
- Cooked but not served
- Not something that could be eaten
- Tastes or smells bad
- Gone past its date
- Freezer burn
- Looked bad
- Been in the fridge or cupboard too long
- Mouldy

Please see the example below:

<table>
<thead>
<tr>
<th>Time</th>
<th>What food?</th>
<th>How much?</th>
<th>Why did you discard it?</th>
<th>How did you discard it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30</td>
<td>Milk from cereal</td>
<td>1/2 cup</td>
<td>Prepared and served, but not eaten</td>
<td>Gave to dog</td>
</tr>
<tr>
<td></td>
<td>Banana peel</td>
<td>1 peel</td>
<td>Not something that could be eaten</td>
<td>Put in bin</td>
</tr>
<tr>
<td>10:30</td>
<td>Apple core</td>
<td>1 core</td>
<td>Not something that could be eaten</td>
<td>Put in bin</td>
</tr>
<tr>
<td>12:30</td>
<td>Leftover fried rice</td>
<td>1/2 cup</td>
<td>Tastes or smells bad</td>
<td>Put in bin</td>
</tr>
<tr>
<td>19:30</td>
<td>Salad</td>
<td>3 cups</td>
<td>Prepared and served, but not eaten</td>
<td>Put in bin</td>
</tr>
<tr>
<td></td>
<td>Vanilla ice cream</td>
<td>1 bowl</td>
<td>Freezer burn</td>
<td>Wash down sink</td>
</tr>
</tbody>
</table>
**Scenario:** It is the middle of winter and Victoria has been hit with its first ever extreme blizzard. One metre of snow covers the ground and no one can leave their houses. You have been left in charge of feeding your household, but you only have limited ingredients. Below is a list of what you have at home. Please think of three meals (breakfast, lunch and dinner) that you can create from these food supplies. You do not need to use all of the supplies. You can consult with friends and family, go online or use cookbooks to come up with the recipes.

- flour
- rice
- rolled oats
- milk
- cheese
- butter
- eggs
- olive oil
- vinegar
- vegetable oil
- tomato paste
- cauliflower
- broccoli
- garlic
- onion
- green capsicum
- carrot
- potato
- apple
- chicken
- brown lentils
- almonds
- vegemite
- yogurt
- salt
- vegetable stock
- mustard
- soy sauce
- spices
- sugar
- honey
Your Ideas!