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# What Can We Learn from Comparing the Waste Management Policies of Europe and Asia?

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# Why is Food Waste a Grand Challenge?

A world map is visible in the background. The map is light gray with white outlines for continents and countries. The European continent is highlighted in a reddish-pink color. The Asian continent is highlighted in a light green color. The rest of the world, including North America, South America, Africa, and Australia, is in the light gray color.

Food waste is a global problem. According to UN, one third of the food we produce is wasted (BBC)

And yet famine and food scarcity remains a significant issue...food is not reaching the people who need it as it is lost at various points along the supply chain

Different studies suggest that between  $\frac{1}{3}$  and  $\frac{1}{2}$  of global food production is wasted

In the UK, Municipal waste accounts for 7% of all UK waste, with a majority of municipal waste being food waste

# Background Information

## Asia vs Europe:

### Asia/China

- **112kg per person/year**
- **15 to 20% of food produced is wasted in industrialised Asia.**
- **350kg per person CO2 emission from food waste (FAO UN, 2011)**
- **~ 42% of fruit & vegetables and 20% of grain produced in the Asia Pacific region are wasted.**
- **No landfill tax**

### EU/UK

- **173kg per person/year**
- **20% of total food produced is wasted (Fusion, 2016)**
- **680kg per person CO2 emissions from food waste (FAO UN, 2011)**
- **7% of waste = bread, oil, beef, sandwiches, yoghurt and bagged salads in Spain & UK (Mena et al, 2011)**
- **Landfill tax: UK (£40/tonne) & Spain (24.12euros/tonne) (Mena et al, 2011)**

# Methods of Dealing with the Waste - Asia Policy

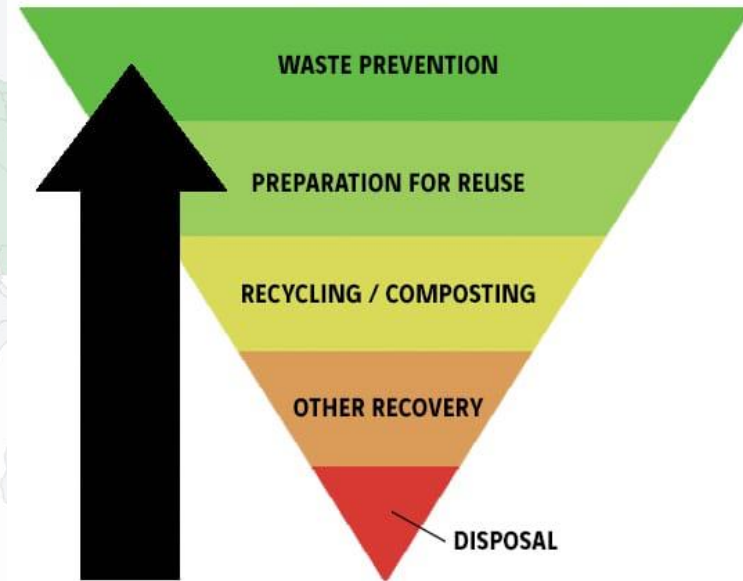
A world map is shown in the background. The continent of Asia is highlighted in a light green color, and the continent of Europe is highlighted in a light red color. The rest of the world is shown in a light grey color.

- Focus more on consumer, increasing life quality for people
- Diversify and specify waste processing
- Awareness and education, government try to educate children to save food by teaching them reasonable life behaviors
- Government policy, like law and food market
- Food Technology And Science (basic policy in China)  
Cultivate people who are professional in food science  
In order to increase food productivity

# Methods of Dealing with Waste - EU Policy

- EU landfill Directive - emphasis on the Waste Hierarchy in the UK to reduce waste
- Initiatives involved depend upon individual behavioural change which is difficult to mobilise
- Before governmental change, there was an emphasis in local councils to achieve the most economically efficient waste disposal method - people used to this
- But this does not necessarily result in a decline in food waste, just more diverted away from landfill

## WASTE HIERARCHY



# Improvements to EU's Policy

A world map is visible in the background. The European Union region is highlighted in a light red color, and the Asian continent is highlighted in a light green color. The rest of the world is shown in a light grey/blue tone.

- Some solutions in place (Bristol, Downham Market School) demonstrating how engaging with individuals is more effective - as attitudes/practices are highly varied
- Understanding why people behave in certain ways - approaching from a psychological perspective, considering socio-cultural/situational factors
- EU Directives: Are they successful?
  - Landfill Directive: beneficial effect on the increased use of alternative waste disposal techniques
  - Packaging Directive & Landfill Directive: minimal impact on the quantity of waste produced - only increased environmental awareness
  - Use of landfill tax: positive effect on reducing waste to landfill - but needs to be high to have a substantial effect
  - Therefore need to increase focus on reducing the amount of waste as well as how it is managed

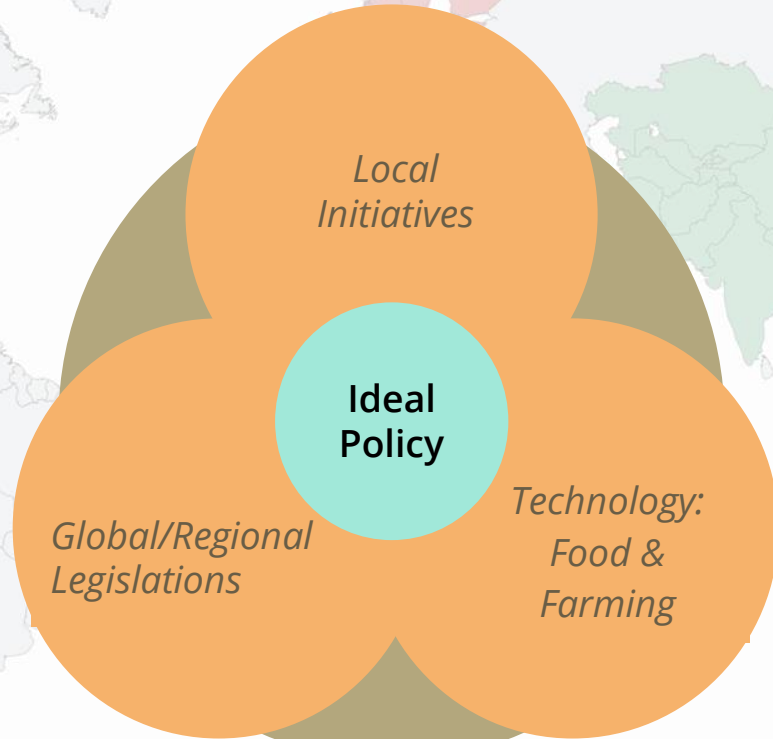
# Improvements to Asia's Policies

- Improvements in farm productivity
- Investment in cold chain logistics, reducing waste during transformation.
- Get value from waste (Through recycling or conversion to oil, gas or power)
- Mandatory garbage sorting



# Combining the 2 regions to Create the Ideal Policy

Measuring the success in terms of reduce sustainable management of waste (Langley et al, 2010) - reducing the quantity produced and how well it is disposed of (EU Waste Hierarchy).





# Local Initiatives



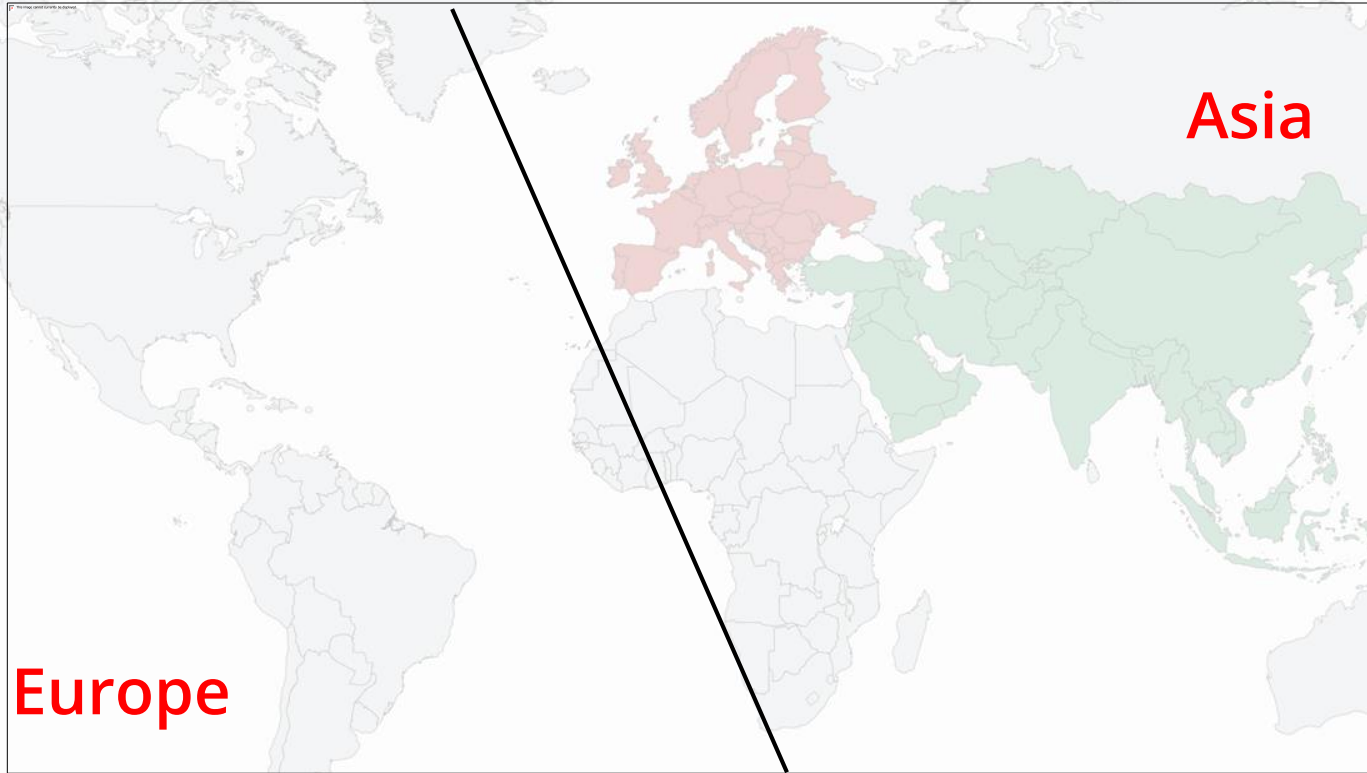
We carried out a small survey to assess what people on campus thought about food waste, unfortunately it wasn't a large sample and was mainly composed of undergraduate students.

The results showed that people did try to recycle to the best of their ability but they did not fully understand recycling methods, and were unaware of the waste management strategies of the university.

It was also evident that food waste was not overall considered a more pressing issue compared to other waste - due to a lack of awareness

This shows the importance of local initiatives - educating the public BUT this doesn't always result in action.

Representing Food Waste per person per year:



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