SDG 12.3: “By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses”
FUSIONS estimates for EU food waste

- Consumer & retail: 30%
- Food service: 58%
- Primary production & processing: 12%

30-42% not included!

Total: 173kg/capita/year

Excluded: 52kg/capita/year

= 27 million tonnes/year
FAO estimates for European food waste

- Consumer & retail: 41%
- Primary production and processing: 59%

59% not included!

Total: 281 kg/capita/year
Excluded: 166 kg/capita/year

= 84 million tonnes/year
11-36% EU's food waste occurs on farms.
CONTEXT — UK RESEARCH
2.5 MILLION TONNES ESTIMATED TO BE WASTED ON UK FARMS

(ABOUT 20% OF TOTAL 12.4 TONNES — WRAP ESTIMATE)
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>FIELD LOSS (central range)</th>
<th>GRADING LOSS</th>
<th>STORAGE LOSS</th>
<th>PACKING LOSS</th>
<th>RETAIL WASTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strawberry</td>
<td>2-3%</td>
<td>1%</td>
<td>0.5%</td>
<td>2-3%</td>
<td>2-4%</td>
</tr>
<tr>
<td>Raspberry</td>
<td>2%</td>
<td>No data</td>
<td>No data</td>
<td>2-3%</td>
<td>2-3%</td>
</tr>
<tr>
<td>Lettuce</td>
<td>5-10%</td>
<td>No data</td>
<td>0.5-2%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Tomato</td>
<td>5%</td>
<td>7%</td>
<td>No data</td>
<td>3-5%</td>
<td>2.5-3%</td>
</tr>
<tr>
<td>Apple</td>
<td>5-25%</td>
<td>5-25%</td>
<td>3-4%</td>
<td>3-8%</td>
<td>2-3%</td>
</tr>
<tr>
<td>Onion</td>
<td>3-5%</td>
<td>9-20%</td>
<td>3-10%</td>
<td>2-3%</td>
<td>0.5-1%</td>
</tr>
<tr>
<td>Potato</td>
<td>1-2%</td>
<td>3-13%</td>
<td>3-5%</td>
<td>20-25%</td>
<td>1.5-3%</td>
</tr>
<tr>
<td>Broccoli</td>
<td>10%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
<td>1.5-3%</td>
</tr>
<tr>
<td>Avocado</td>
<td>No data</td>
<td>30%</td>
<td>5%</td>
<td>3%</td>
<td>2.5-5%</td>
</tr>
<tr>
<td>Citrus</td>
<td>No data</td>
<td>3%</td>
<td>No data</td>
<td>0.1-0.5%</td>
<td>2.5-5%</td>
</tr>
<tr>
<td>Banana</td>
<td>No data</td>
<td>3%</td>
<td>No data</td>
<td>0-3%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: WRAP (2011), *Fruit and vegetable resource maps*
19% of lettuces were unharvested - representing a loss of 38,000 tonnes

9% of strawberry crops are wasted - equivalent to 10,000 tonnes

Source: WRAP (2011), *Food waste in primary production: a preliminary study on strawberries and lettuces*
FARMERS TALK FOOD WASTE

Supermarkets’ role in crop waste on UK farms
OUR FINDINGS
36 FARMERS

(accounting for roughly 2.5% UK production)
10-16% FOOD WASTE ON AVERAGE YEARS (22,000—37,000 tonnes: enough food to provide 150,000 to 250,000 people with five portions of fruit and vegetables a day for a whole year)
Food waste accounts for 10% to 16% of farmer crops says Feedback

22 Feb 2018 | Ian Quinn

A new report today claimed supermarket buying practices are leading to hundreds of thousands of tonnes of fruit and veg being left to rot, despite recent moves by retailers to cut down on food waste.
Fruit and vegetable waste from farms ‘could feed population of Birmingham or Manchester for a year’, says environmental charity

Report suggests supermarkets play key role in driving overproduction and food waste
OVERPRODUCTION, LOW FOOD PRICES AND SUPERMARKETS:

SURVEY RESULT: Of farmers who answered the question 6 in 10 reported that “Farmers overproduce because there is pressure to always meet buyer orders, or risk losing contracts. It is difficult to find outlets for the surplus.”

SURVEY RESULT: Of farmers who answered the question 9 in 10 reported that “Overproduction leads to greater price volatility.”

SURVEY RESULT: Of farmers who answered the question 4 in 10 reported that “Supermarkets taking over a larger share of the UK retail market from wholesale markets and grocers has led to less outlets for lower grade produce.”

SURVEY RESULT: Of farmers who answered the question 8 in 10 reported that “Generally low farm-gate prices increase the risk of it not being cost-effective to harvest produce.”
UNFAIR TRADING PRACTICES:

SURVEY RESULT: Of farmers who answered the question 8 in 10 reported that “Retailers chop and change what proportion of their stock they buy from different suppliers in search for cheapest offer, which leads to more unpredictable demand.”

SURVEY RESULT: Of farmers who answered the question 8 in 10 reported that “Differences between buyers’ forecasts and confirmed orders, like last-minute order cancellations, make it difficult to find alternative buyers for produce before it deteriorates.”

SURVEY RESULT: Of farmers who answered the question 7 in 10 did not agree with the statement “Costs incurred from on-farm wastage and returned produce, which arise from order forecasting errors, are compensated by the buyer.”
Real beauty comes in all shapes and sizes
COSMETIC SPECS, WEATHER AND IMPORTS:

SURVEY RESULT: Of farmers who answered the question 4 in 10 said that “Retailers use cosmetic standards as an excuse to reject produce when they can get a lower price elsewhere or their demand has fallen.”

SURVEY RESULT: Of farmers who answered the question 8 in 10 respondents reported that “Weather produces gluts leading to price collapse’ and ‘Gluts of imports into the UK sometimes make it difficult to find outlets for produce.”
"They (supermarkets) daren't not have product"

Farmer Trevor Bradley
(The Times, 2017)

"If the retailers only knew just how much waste their forecasting was generating, they would surely do something about it."

Supplier reported to Christine Tacon, Groceries Code Adjudicator (The Grocer, 2017a).
We are passionate about our winter crops, but I can’t see a way forward at the moment, I can’t stand to see them in the field going to waste, so I’m just going to chop them up.

Geoff Philpott (The Times, 2017)

Sarah’s Experience:

Sarah’s farm has experienced order cancellations. Once during the apple season, they were promised a share of an order, but then this was halved at the last minute.

One anonymous farmer who responded to our survey said that they waste on average 25% of their carrots, mainly at packhouse level. Some carrots are rejected because of rotting or pest damage, but a large amount are simply too small, large, or wonky. This amounts to 1,750 tonnes of their carrots per year equal to nearly 22 million portions.
OUR RECOMMENDATIONS
TO SUPERMARKETS

› Relax cosmetic standards and extend cosmetically imperfect ranges:

› Introduce clear food waste reduction in the supply chain targets and publicly report on progress:

› Pay farmers a fair price:

› Minimise supply and demand fluctuations for farmers:
TO UK POLICY MAKERS

› Measure food waste occurring on farms:

› Set targets to halve UK food waste from farm to fork:

› Extend the remit of the Groceries Code Adjudicator to cover indirect suppliers:
GLEANING
Asda launches 'wonky veg box' in effort to tackle food waste caused by rejection of 'ugly' vegetables

Asda is trialling the new box, which costs £3.50, in 128 UK stores.
Farmers get the cauliwobbles

British growers are in despair as tons of cauliflowers go to waste while supermarkets sell imported varieties

Tony Allen-Mills
March 5 2017, 12:01am,
The Sunday Times

Geoffrey Philpott is forced to export his cauliflowers at a loss while supermarkets stock up with Spanish varieties
Tesco to sell more cauliflowers at 79p following bumper crop

22 Mar 2017 | Beth Gault

Tesco’s cauliflower commitment follows concerns by farmers this month that tonnes of the crop would go to waste

Tesco has bought 220,000 extra cauliflowers from suppliers this month in an effort to reduce food waste.

Aldi chops cauliflower prices to 29p following bumper crop

03 Apr 2017 | Beth Gault

Aldi has cut the retail price of cauliflower to try and triple consumption of the vegetable and support farmers.
Tesco convinces 24 of its biggest suppliers to start publishing food waste data

20 Sep 2017 | Ian Quinn

Two dozen of Tesco’s biggest suppliers have agreed to start publishing food waste data for their operations in the next 12 months.
Figure 1: Extension to the Groceries Code Adjudicator's remit (Traidcraft, 2017).
REFRESH is funded by the Horizon 2020 Framework Programme of the European Union under Grant Agreement no. 641933. The views and opinions expressed in this presentation are purely those of Feedback and may not in any circumstances be regarded as stating an official position of the European Commission or other REFRESH partners.
Animal Feed Tool

The decision making support tool for using former foodstuffs as farm animal feed

Get Started

The United Nations estimates that if farmers all around the world fed their livestock on the food we currently waste and on agricultural by-products, enough grain would be liberated to feed an extra three billion people, more than the additional number expected to be sharing our planet by 2050.


If farmers fed livestock on food currently wasted, the grain liberated would feed an extra three billion people.
If feeding of left-over food were legalised following the Japanese and South-Korean models, and half the current European food waste was recycled to animal feed the land requirement of EU pork production has the potential to shrink by 1.8 million ha.
Feeding pigs on food waste could ... 

Replace 9 million tonnes of grain → Feed 70 million EU citizens

Feed 85% of Germany
Feed Berlin for 20 years

Food leftovers could replace 6.6 million tonnes of human-edible grains currently fed to pigs – equivalent to the annual cereal consumption of 70.3 million EU citizens
Feeding pigs on food waste could reduce pressure on sensitive ecosystems by reducing the demand for up to 268k hectares of soybean. Nearly half of Europe’s soybeans come from Brazil and reducing the expansion of soybean production there could save over 40 million trees.
Environmental Impact of Food Waste Recycling

<table>
<thead>
<tr>
<th>Environmental Impact</th>
<th>Pig Feed (wet)</th>
<th>Pig Feed (dry)</th>
<th>Biogas Compost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage to the ozone layer</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Carcinogens</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Non-carcinogenic toxins e.g. heavy metals</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Ionizing radiation</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Photochemical oxidant formation</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Global Warming Potential *</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Freshwater eutrophication</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Marine eutrophication</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Terrestrial eutrophication</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Eco-toxicity</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Fossil fuel depletion *</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Depletion of other non-renewable resources</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Acidification</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>Particulate matter emissions</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
</tbody>
</table>

* The Global Warming Potential and fossil fuel depletion calculations use the current UK energy mix. If renewable energy were to be used for the processing of the feed, feed would score better on these aspects.
- In Japan and South Korea: feed from surplus food is much cheaper than conventional feed.

- The cost of feed is 56 to 70% of total production cost of European pork.

- Reduced cost pressures could help in farmers interested in providing highest possible welfare standards and reducing antibiotics.
Manufacturing high-quality feed from food waste to create a 'loop of recycling'

Support with photographing: JAPAN FOOD ECOLOGY CENTER, INC.
Feedback UK consumer survey (nearly 3,500 responses)
Q3: Would you support the law being changed to allow more food waste to be fed to pigs, if this could be proved to be done safely?
THANK YOU!