

Measuring food surplus & waste

The challenge of primary production

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Overview:

1. Is primary production important
2. Experience with strawberry & lettuce sectors
3. The power of data
4. Helping industry to measure
5. Challenges and a collaborative alternative



Is food waste in primary production important?



- Ethical reasons
- Scale of agriculture
- Financial returns
- The farm to fork imperative
- The power of evidence



SUSTAINABLE DEVELOPMENT GOALS

KNOWLEDGE PLATFORM



CHAMPIONS 12.3

GUIDANCE ON INTERPRETING
SUSTAINABLE DEVELOPMENT GOAL TARGET 12.3



Nonetheless, the interpretation below could be considered “best practice” or a “north star” for how governments and companies should interpret SDG Target 12.3. This elaboration can guide governments (e.g., country, provincial, city), companies, and individuals as they set explicit food loss and waste reduction targets, measure progress, and take on-the-ground action.

Available online at:

<https://champs123blog.files.wordpress.com/2017/10/champions-12-3-guidance-on-interpreting-sdg-target-12-3.pdf>

- 1. What sectors are covered?** One should interpret Target 12.3 as covering the *entire* food supply chain, from the point that crops and livestock are ready for harvest or slaughter through to the point that they are ready to be ingested by people (Figure 1). Entities should seek to reduce food loss and waste within the boundaries they control, and seek to help drive reductions up and down the supply chains where they have influence.

WRAP's research on strawberries & lettuces



- Consistent with the *Food Loss & Waste Standard*
- Industry steering groups vital to defining project boundaries
- We tested multiple research methods:
 - interviews, mostly face-to-face – generated the greatest volume of evidence but accuracy reduced
 - on-farm measurement (lettuce sector only) – accuracy good but resource intensive
 - participation in the online survey was negligible even with promotion and incentives



On farm measurement

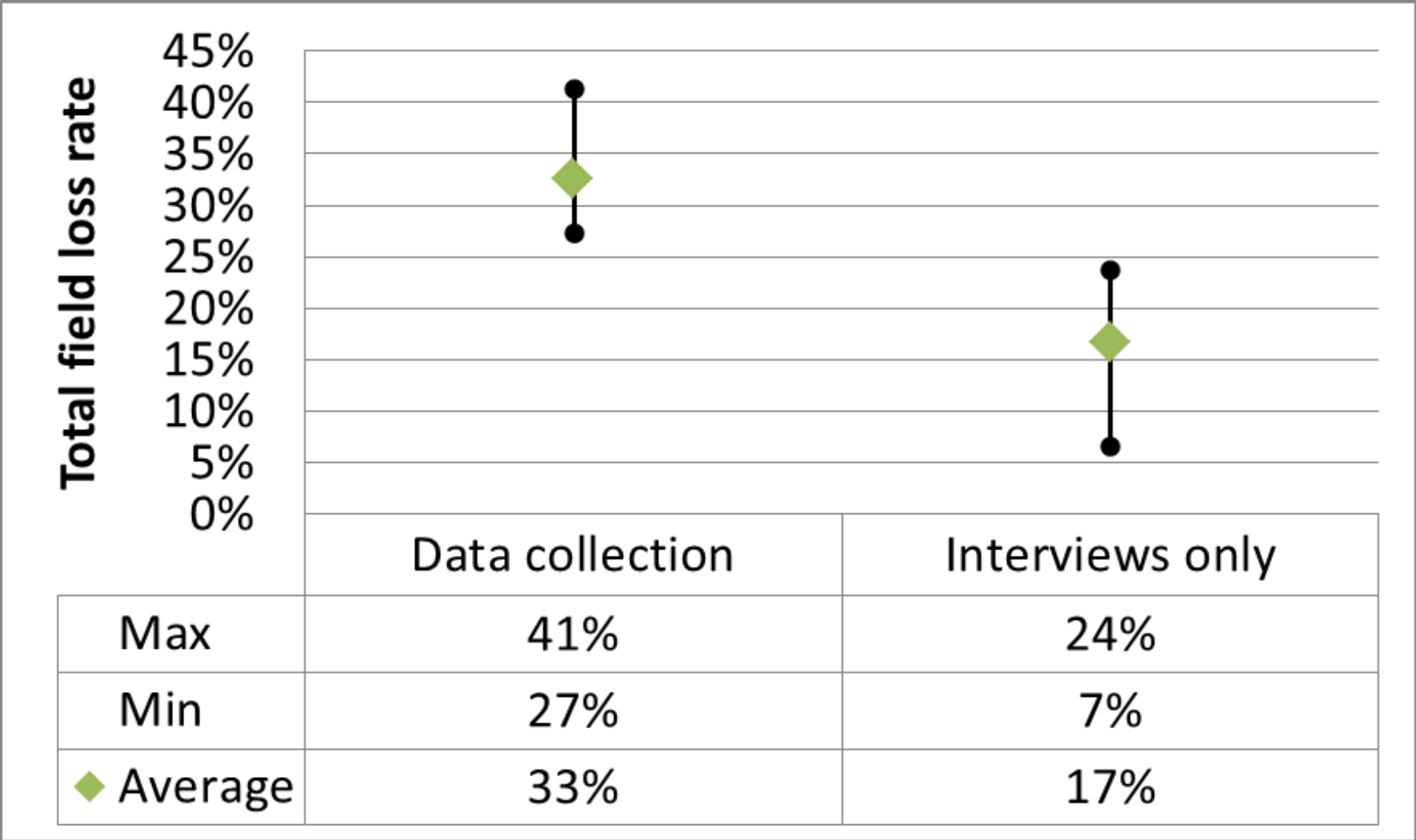
Commonly, waste is collected in trays (below left) then consolidated in mini skips (below right) for daily disposal e.g. AD



On farm measurement



Comparing survey data against measured waste levels



Results

- Results based on only one season
- Combined value of Euro 30-35M
- Variation between max and minimum waste rates
- Significant opportunity to boost productivity through supporting uptake of existing best practice

Strawberries



Harvesting

- Class 1
- Class 2
- Waste



% of crop rejected during picking

Min	3%
Max	17%
Av.	9%

Lettuces



Harvesting

- Areas ploughed in
- Unharvested heads



% of crop left in field

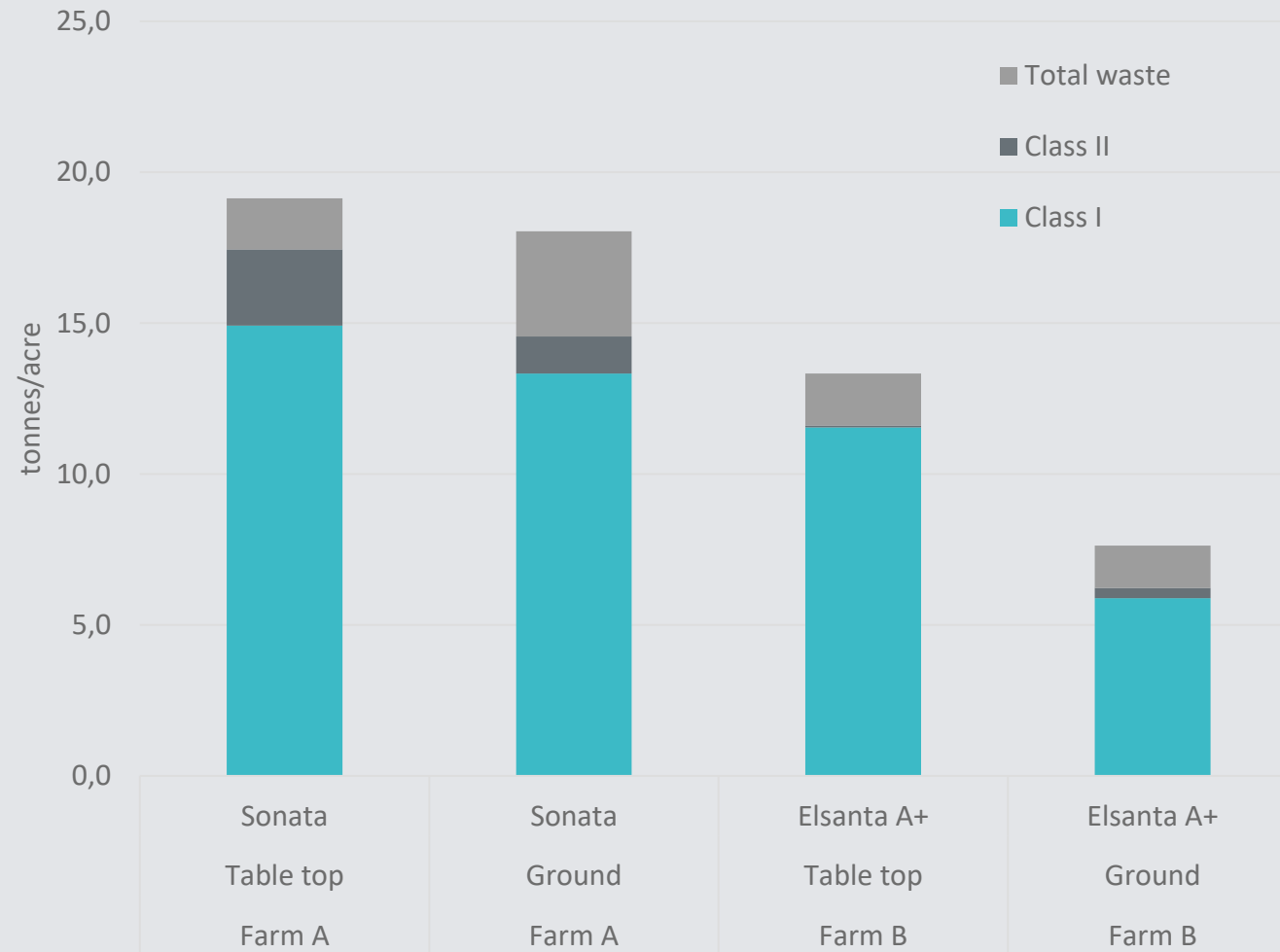
Min	7%
Max	47%
Av.	19%

The power of comparative data



Results demonstrated benefit of table top

- On two farms we compared the same varieties grown on tabletop and on ground at similar times of the summer
- In tabletop systems waste was reduced by 30%-50% and the Class I share of production increased by 6%-12%



The power of data (continued...)

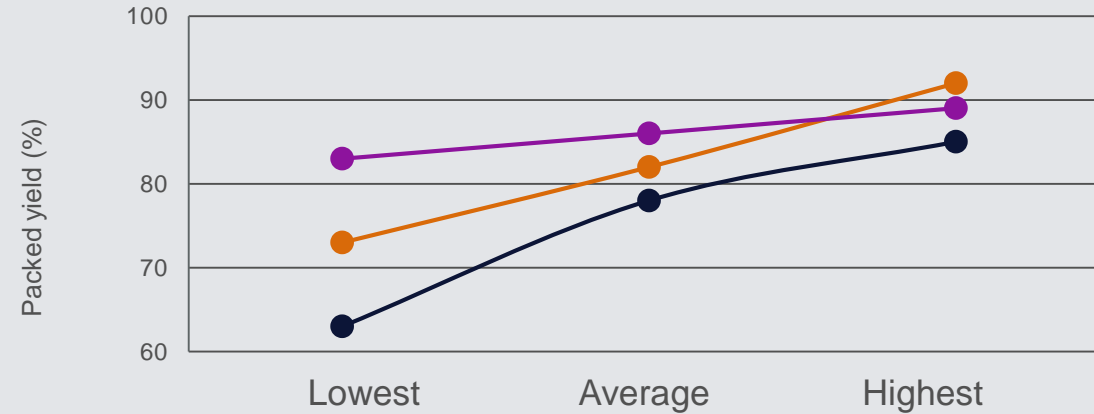
- Project with potato growers to:
 - improve yield forecasting
 - reduce supply chain waste



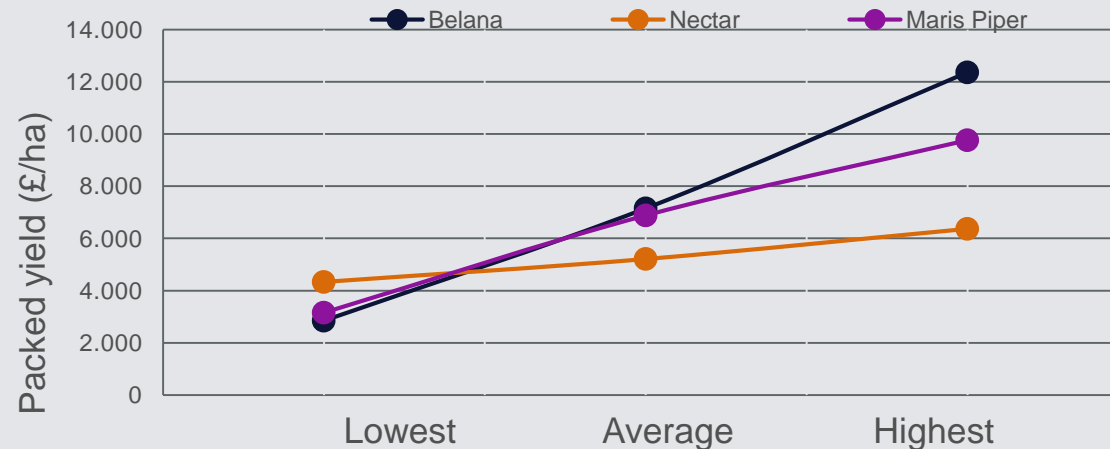
Field	Modelled yield (t/ha)	Grower yield (t/ha)	Mean tuber size (mm)
Field 1	35.2	31.3	40.1
Field 2	21.3	17.6	44.6
Field 3	30.2	27.1	46.0
Field 4	48.0	48.5	33.8
Field 5	47.5	48.5	32.8
Field 6	33.2	32.6	41.0
Field 7	36.3	32.6	42.8
Field 8	25.9	30.1	45.5
Field 9	31.4	23.8	39.2
Field 10	41.1	39.8	37.0
Field 11	36.0	34.6	38.6
Field 12	26.1	32.4	34.7
<i>Average</i>	34.4	33.2	39.7

% of total crop meeting specification

The difference in crops meeting specification, between the poorest and best performing crops



Difference between highest and lowest revenue crops (£/ha), taking into account the % of crop meeting the desired specification



Supporting industry

- Piloting a farmer-led approach to measurement
- Create small groups in priority sectors
- Provide facilitators and support to help measure
- Generate comparative data to facilitate improvements



Food Waste Matters

This guide for fresh produce growers explains how you can increase crop utilisation and profitability through measuring food waste in five simple steps.



www.leafuk.org/farming/resources



[The Cool Farm Tool](#)

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The Cool Farm Tool

An online greenhouse gas, water, and biodiversity calculator for farming

FREE FOR GROWERS

Use the CFT today



Greenhouse Gases

Field level assessment including nutrients, energy and land use



Biodiversity

Quantitative scoring of whole farm management



Water

Crop irrigation requirements and blue and green water footprints

New Food loss & waste reporting metric expected 2019

Excellent practical videos...

(from US, but still very relevant)



Field veg



<https://youtu.be/K9dE9EavUSg>

(sweet) Potatoes



<https://youtu.be/Nb-nUubV16Y>

Challenges

- Research is expensive
- Farmer recruitment difficult
- No 'typical season'
- +100,000 commercial farms in UK
- Across 30 different sectors

Collaborative data sharing – an alternative?



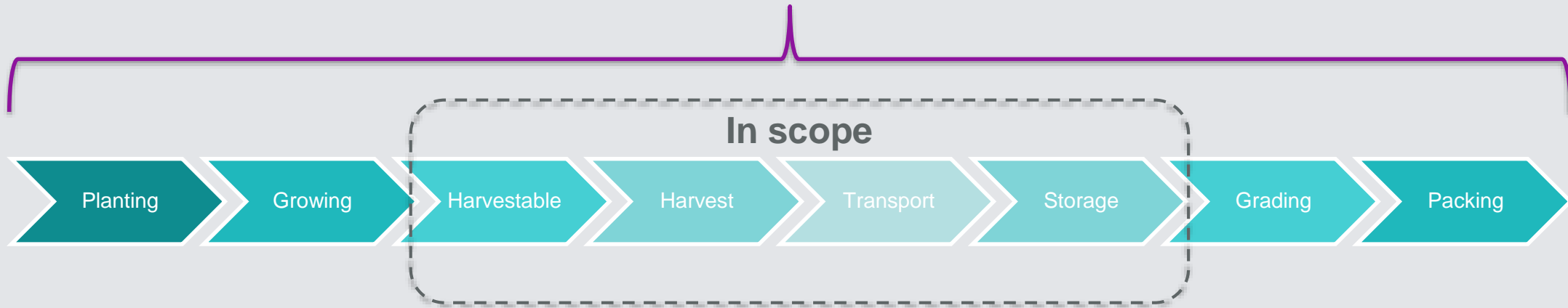
Can we collate existing data, sector-by-sector?

- To generate national statistics
- Identify hotspots
- Generate reference values for industry benchmarking

For example...

E.g. potatoes

Process map



Is food waste in primary production important?

- Rough estimate for UK food waste in primary production is 2.5 million tpa
- A significant addition to the existing UK total of 10 million tpa
- Anyone that believes in evidence based change has to be working on this



Improving data through collaboration



- If you have new data that you may be able to contribute, please let us know
- In return, we can share our data with you
- Through collaboration, we can make continual improvements to the reliability and accuracy of the data
- Contact william.mcmanus@wrap.org.uk

The Food Waste Atlas - The world's first free online tool bringing global food loss and waste data together



Tracking the world's food loss and waste across the entire food system

The Food Waste Atlas enables countries, cities, companies and other organizations to track food loss and waste, so they can play their part in creating a sustainable food system for all.

 →

The Food Waste Atlas

The Food Waste Atlas supports the delivery of UN Sustainable Development Goal 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."



TARGET

Access to global data to help develop baselines and appropriate targets



MEASURE

Align your measurement with international standards, and share data transparently



ACT

Gain insights on food loss and waste by product, by region, and by country, to take action on reducing food waste



UNITE IN THE
#FOODWASTEFIGHT