



PPP RENEW: Side & residual flows from retail & food services as Eco-feed for pigs and chickens

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Background

The EC's Circular Economy Action Plan and Farm to Fork strategy set out to increase the use of surplus from the food chain in livestock feed without compromising feed and food safety. Building on results from the H2020 REFRESH project, approx. **7 Mton** of the total amount of 88 Mton of food waste arising annually within EU-27, could become available to be processed into non-ruminant feed. This can reduce farmer feed costs, land use for European livestock farming, carbon emissions and deforestation from soy imports.

The RENEW project

The Dutch PPP RENEW (2021 – 2024) brings together stakeholders from food services, animal feed production, farmers, NGOs and science. We aim to generate insights on the **use of side and residual flows from retail and food services as non-ruminant livestock feed** for pigs & poultry, which is not allowed under current EU-regulation on the use of animal-by-products. Where other research focuses on nutritional and food/feed safety aspects of valorisation towards animal feed, RENEW focuses on the **business case** for Eco-feed, **environmental impact**, **acceptance** by consumers & business stakeholders and how it contributes to a more **circular food system**.

The **estimated potential** for Dutch Eco-feed is approx. 250 kton of suitable side flows, which currently go towards AD and composting, covering 2.1-2.5% of total feed volume in NL. Our first research results present the modelling for **economic feasibility**, as well as findings from a focus group study on **consumers' acceptance** of Eco-feed.

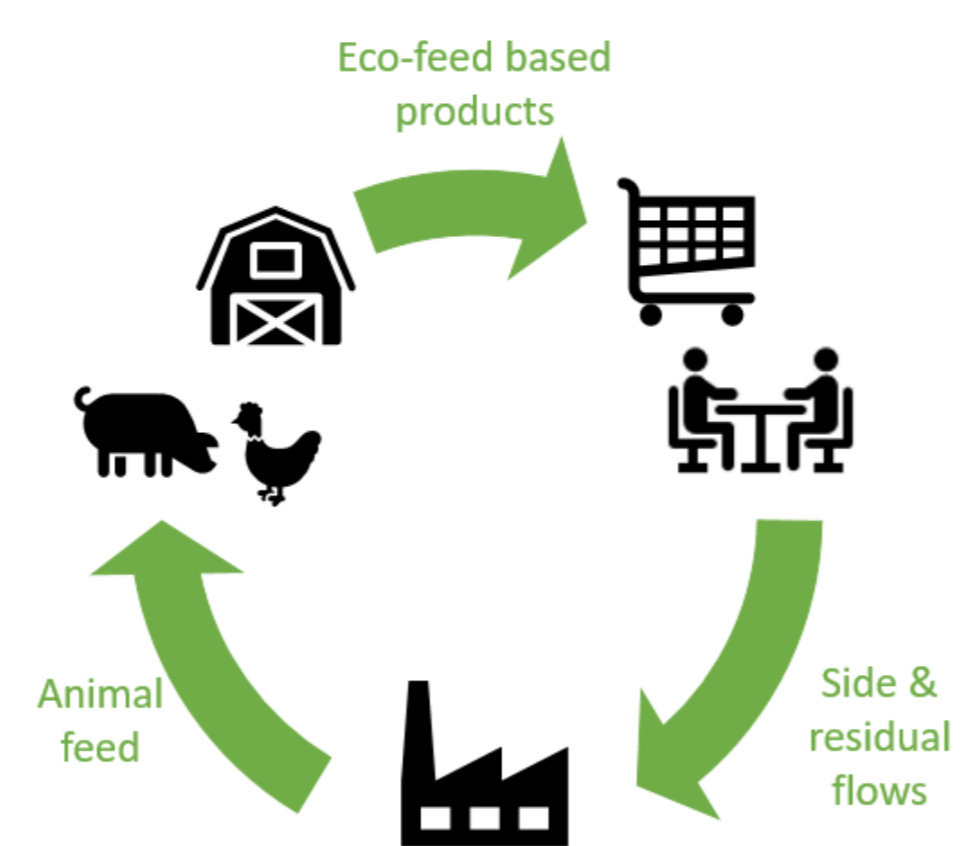


Figure 1. Eco-feed as circular animal feed concept

Results: modelling for economic feasibility

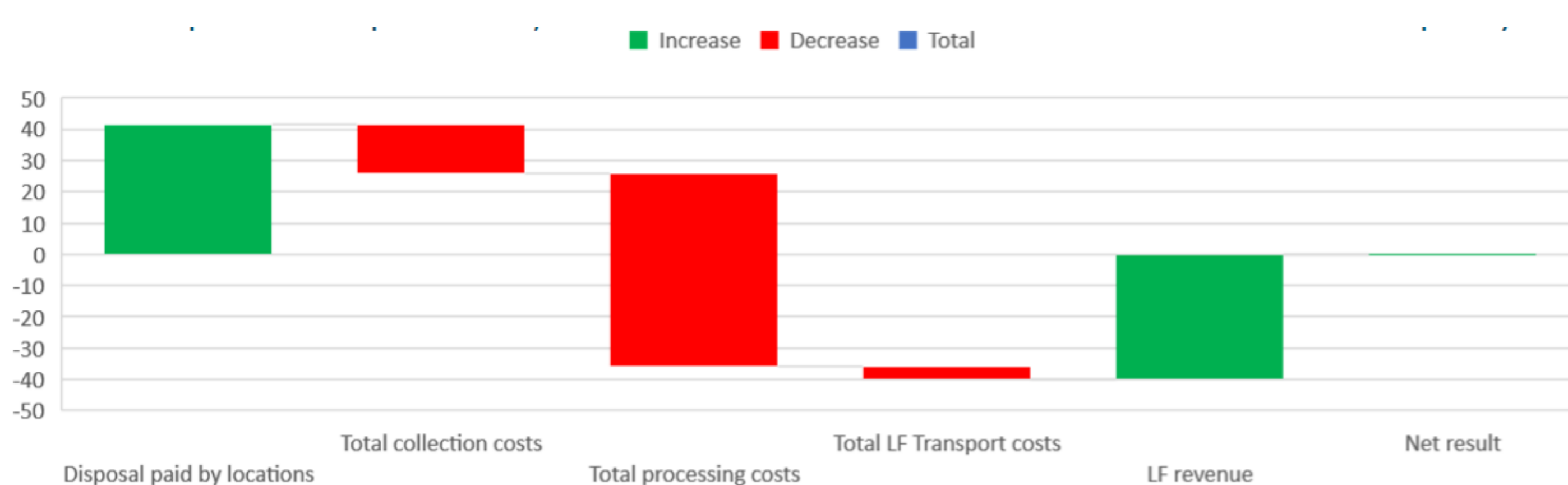


Figure 2. Breakdown of costs/benefits at scale on break even point (331 locations / 14kton/year)

We have calculated costs and benefits in comparison to those associated with conventional feed in different scenarios (no. of outlets, processing volume, distance parameters). Given the available volume and high demand in animal feed, Eco-feed produced at scale has the potential to be **fully absorbed by the market**. **Processing and collection costs** are the main drivers and are sensitive to economy-of-scale benefits. This model will be extended to include **sustainability indicators** as well as **pricing effects** in the remainder of the project.

Results: consumers' acceptance of Eco-feed

Building on insights on consumer behaviour from scientific literature, we created a framework to better understand which elements influence consumer awareness and attitude towards animal feed practices and acceptance of Eco-feed applications.

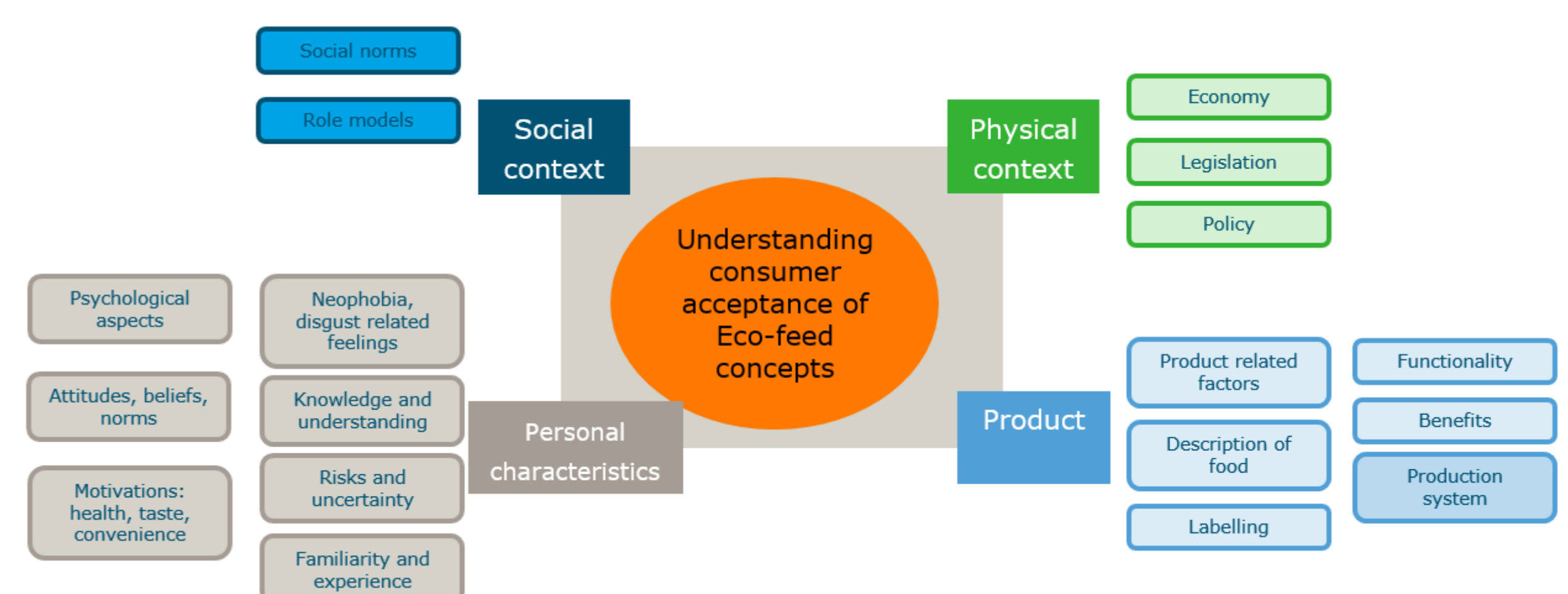


Figure 3. Critical elements of consumers' acceptance of Eco-feed

These elements can be categorized in factors relating to **personal characteristics, social context, physical context and product**. To lard this framework with insights from practice, we organised 4 online **focus group discussions** with consumers.

In order to assess whether a concept is acceptable, a certain **knowledge level** about the concept is required, however knowledge on animal feed is generally low, so there is **no clear reference point** to compare the Eco-feed concepts.

Many use their common sense or gut feeling to assess a concept:

- Is it something I myself would give to an animal?
- Is it really not fit for human consumption anymore? (e.g., would it still be possible to donate to charity?)
- Is it in line with what this animal would eat themselves naturally? Chickens are typically seen as herbivores (while they are omnivorous) and pigs overall are seen as omnivores (correct).

When asked what further questions consumers would like to have addressed, three key topics emerge:

1. **Quality control** and reassurance of food **safety**
2. What is in the **best interest** of the animal?
3. **The transparency** of the process, the reasons behind it and who benefits from it?

Conclusions

Eco-feed is not radically new, but will need to find its way, once allowed, to become economically feasible, the better option for sustainability and positively accepted by consumers. Our preliminary findings are positive in this regard. In the next steps, we will further investigate the positioning of Eco-feed concepts, identifying target groups and key messages and the willingness to buy Eco-feed (products), overcoming the intention – behaviour gaps from farm to fork.

Acknowledgements

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