



Responses provided to the comments made by attendees during the webinar "Unlocking Precision: Navigating Reliable Diagnoses for Measuring Food Losses in the Primary Sector of the Supply Chain"

11th April 2024



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.

Acknowledgements

Firstly, we would like to express our gratitude to the numerous experts in the field who not only attended the webinar but also actively participated by posing questions to the speakers and engaging in fascinating debates among themselves.

Secondly, in order to preserve these vital conversations aimed at standardizing methodologies and concepts, we propose a series of responses and comments to the main questions raised in the chat channel and Slido program. Thus, we intended to compile all these questions and comments and categorize them by theme.

Of course, if there is any issue that was not addressed and you believe it would be valuable to include in the document, please do not hesitate to contact us. Our email addresses are provided at the end of the document.

Furthermore, if you would like to continue these dialogues or simply if you have any difficulty understanding any of our responses, please feel free to reach out to us. Additionally, we have gathered your interests for future meetings via Slido in the form of working groups to address and agree on specific aspects discussed in the webinar.

Once again, thank you very much for everything.

Kind regards,

Espigoladors and FOLU Team.

Topic: "Any living being" within the food losses definition.

- Comment 1: "What would be the "living beings" in the proposal for a definition that are not falling under the category "animals"? It would be clearer if the word "slaughtered" was added after "harvested" so that both plants and animals are covered. Thank you.

This matter was extensively discussed in the first webinar, where it was mentioned that the inclusion of the expression "living being" was aimed at encompassing any living organism that could be considered "food," present or future, beyond those identified as "animals" or "plants," which obviously cover the vast majority of food items. However, in order to be meticulous and precise, and to include any possibility, no matter how small, outside of these two main groups, it has been deemed appropriate to include this option. Here, all types of edible mushrooms could be included.

Nevertheless, considering that rather than helping to cover all present and future possibilities that could arise from the concept of "food losses," it is a source of confusion, another expression will be proposed in the new draft of the Definitional Framework of Food Losses, and there may even be some kind of linkage with the food categories proposed by the Codex.

Regarding the issue of "slaughtered," we find it correct and we may even consider adding the expression "caught" to also cover fishing/aquaculture.

Thank you for the contributions.

Topic: Animal feed and food losses concept

- Comment 1: One question regarding system boundary of definition: you do not include food produced for human production but then redirected to animal feed. However, also this can represent a loss of resources (e.g. feeding animals with papaya is not the most efficient way):
- Q1) shouldn't they be measured as well?
- Q2) how do you suggest to call them? why not "food losses used as animal feed"? arguments for calling them food loss:
 - o 1) because it is food that lost its original intention of being used as human food
 - o 2) it is food used in a way that represents a potential loss of resources

Very interesting reflection, which was also extensively debated in the first seminar. The quick answers would be, from our point of view: Q1 = yes. Q2 = animal feed. In a more developed manner:

We fully agree that food intended for human consumption but ultimately sent to animal feed cannot be considered as food losses/food waste = 0, for example, for the reasons you mentioned. Additionally, we could include that according to the waste or food surplus management hierarchy, it is not at the top of the pyramid, so despite being a better option than, for example, incineration, this management can still be improved, such as by ultimately sending it to its initial destination: human consumption.

Having said that, now we need to adapt this idea to the current casuistry of the European Union and its definition as "food waste," which excludes animal feed from the term. To align



with this criterion and make it easier to incorporate as a "piece of the puzzle" relative to food losses, animal feed has also been excluded from its consideration.

However, similar to production losses, the fact that they are excluded from the concept of food losses does not mean they should not be quantified; quite the opposite. But they should be quantified under another definition. We propose that they should be measured precisely under the category of "animal feed," obviously without being combined with products that were originally produced with this final intention, as we are talking about a different reality; we are talking about food that was intended for human consumption but ultimately sent to animal feed.

What do you think? Thank you very much for the contribution!.

Topic: Quantifying food losses through the use of innovative tools and new technologies.

- [Comment 1:](#) I would like to know more about the drone approach - is there more information on how it is done with cauliflower and apples?.

Information can be found from the links shared by Dr. Joan Colon during the event:

- <https://www.folou.eu/harnessing-vision-based-metrics-for-quantifying-food-loss-in-cauliflower-fields/>
- <https://www.folou.eu/counting-apples-and-apple-quality-with-drones-and-ai-will-this-apple-be-tasty-just-ask-our-drone/>

If the information is not sufficient, please email us, and we will provide you with the contact information of the responsible individuals.

Moreover, if you are interested in testing/replication of the technology, FOLOU will soon develop a replication/twinning component with other regions in Europe. You can contact me for more info on that: abo@acrplus.org

Thank you for your interest!

Topic: Aquaculture salmon as an example of the complexities in defining the starting point of food losses.

- [Comment 1:](#) If aquaculture salmon of 1 kg is not harvested because that is not commercially viable, and/or it subsequently is being discarded - not eaten by people, then this is food WASTE in the purest sense of the word.

Our job is to improve the food supply chain operations to prevent this to happen.

Thank you very much for the reflection. Undoubtedly, the first idea we like to emphasize is that regardless of the concept we refer to: food losses, food waste, or production losses, they are all pieces of the same puzzle, and it is necessary to assemble the entire puzzle to clearly see the problem. This is the first step to prevent and mitigate it.

In the specific case of aquaculture salmon, it was shown in the seminar as evidence of the complexities that exist today in drawing a line between these concepts. For example, in the case of food losses, it begins within the chain when it is considered "ready to be slaughtered/caught/harvested". The discards that occur before this stage would not be considered "food losses", although this does not mean that they should not be quantified and therefore reduced; quite the opposite: they must be measured and mitigated but under another name, in this case, it would be under "production losses".

Under the regulatory framework of the European Union, as mentioned in the first webinar, highlighting especially [Regulation \(EC\) No 178/2002 of the European Parliament and of the Council of 28 January 2002](#), if it is discarded before the harvest, caught, or slaughtered process, it is not even considered as "food", and therefore, falls outside the definition of "food waste". In the specific case of discarded salmon weighing 1 kilogram, since it is not yet "ready to be caught", we understand that it would be before the starting point of food losses and therefore would belong to the concept of "production losses". It would not be considered "food waste" either, as it is not even considered "food".

The salmon case is considered a paradigmatic example that could occur with other food commodities since being "ready to be harvested/slaughtered/caught" is not solely determined by the product's maturity level but also by other commercial criteria. For this reason, we understand it is necessary to quantify not only food losses but also other concepts such as production losses, as all salmon that is edible for humans but weighs less than three kilograms would be excluded from the analysis if we only focus on food losses, even though it is a valuable food item. Therefore, in the case study itself, despite initially indicating three kilograms as the starting point for food losses, all discards occurring before reaching that weight will be quantified.

These complexities in nomenclatures within the context of the European Union aim to be very rigorous to respect current European regulations and to expand the current monitoring and quantification systems that are mandatory for all Member States, including "new pieces of the puzzle", which allow for a complete view of the problem and, as you rightly comment, achieve the ultimate goal of preventing discards throughout the food chain, and not just from post-harvest onwards, as currently occurs.

To achieve this objective, to be efficient and effective, we understand that it is better to achieve it through "the inclusion of new pieces in the puzzle", which fit with the current ones, than to "change the size of the current puzzle pieces", that is, for example, to change the current definition of "food" which would imply regulatory changes that in turn affect other regulations and could make these changes impossible or very difficult.

How do you see the strategy? Thank you very much for the contributions.

Topic: The challenge of quantifying food losses in milk production.

- [Comment 1](#): Nowadays you have milk production data for each cow. You know when and how much it breaks. It's just a matter of starting to analyse the data that the farmers already store.

Thank you very much for the comment, and it will be very interesting to have your experience in the data we obtain from the FOLOU case study on food losses in milk production, both in Ireland and in The Netherlands.

As discussed in the webinar, one of the main objectives of the case studies is to provide experience in on-site measurement, both through quantitative and qualitative methods,

of food losses according to different types of food and different territories. It may happen that in some of them, it is concluded that it is possible to obtain rigorous data from already available records because they are of high quality and reliability. Hopefully, it will be easier to obtain data on food losses, at least for some types of food.

Additionally, these case studies aim to provide numbers on food losses and the context of these numbers, including comparisons between different production methods, through conventional, organic, or agroecological production, and their greater or lesser connection with possible food loss generation. In the specific case of milk, different models occurring between Ireland and The Netherlands will be analyzed, evaluating their implications in terms of food losses.

For all these reasons, we believe it is worth addressing the issue of food losses in milk production, and we would love to share our experience with others who have already done or are doing so in this regard.

Here we are!

Topic: Distinction between edible/inedible and marketable/non-marketable in food loss measurements

- [Comment 1: Everything that is edible, is in principle also marketable. It just depends on the market that you look for. Plus, you can create new markets](#)

Thank you very much for the comment. Indeed, it should be so: no edible food should be discarded simply because it is not considered marketable. For this reason, it seems pertinent to us, in line with the recommendations established, among others, by Lisa Johnson, to create different categories related to food losses, to show the typology of losses that occur in each plot/farm, and that in many cases the producers themselves suffer from. We understand that this helps diagnose losses not only at the scientific/investigator level but also at the plot/farm manager level, so that from there, formulas can be sought to reduce these losses. It may be, for example, that it is due to the fact that a majority cannot find a commercial outlet through the usual channels and new formulas or products need to be created to utilize these foods.

The question we could pose here is precisely the conclusion of the reflection, when it says "you can create new markets" where we should consider who is part of the "you"; perhaps there, many of us should include ourselves and help farmers generate these new avenues for utilizing products, as they sometimes do not have the means to do so on their own. Therefore, this preliminary diagnosis could also be seen by them as that "first step" from which to build the solution to the problem of losses, showing a problem that arises in crop fields, farms, or fish farms, but whose ultimate reason for generating these losses sometimes comes from other points in the chain, where farmers are victims of the problem and their reduction needs help from other actors who are part of the chain.

What do you think about it? Thanks again for your input!

Topic: Synergies with other projects

- Comment 1: I am working on the BREADCRUMB project where we are revising Food Marketing Standards (public and private) and trying to investigate the impact on the FLW creation. We know that due to these standards are not only FLW created but they contribute to economic losses (for example second class fruit (not acceptable color, shape) won't be accepted by retail. We also want to quantify FLW related to these standards. Are you in your CS will try to also investigate the main reasons of the FLW or focus just general on FWL? We are in the stage of preparation for data collection by our CSs; I will definitely advise our partners to check your webinar.

Thank you very much for the comment! We would be delighted to collaborate, as the topic you are addressing is fascinating, and we would love to share experiences regarding it. Our project will be very focused methodologically (how to measure), although data on losses and the associated causes will also be provided. However, there are doubts about whether it will be possible to reach, in some or all types of food, the level of detail to differentiate based on the final classes that are even categorized by foods that ultimately have human consumption but whose price varies according to these types. It certainly seems to us to be a topic of great relevance and interest, and our research could be very compatible, so we would be delighted to meet with you and discuss next steps in the collaboration. Best of luck with the challenge!

Topic: Training courses about food losses

- Comment 1: Should Farm Advisors/Agronomists be targeted for training also? They are a trusted source of information and guidance in Australia.

Thank you very much for the comment. The response is that they should also be an objective for training, of course. Initially, we had included them under the more technical and scientific profile; all of them have been summarized under the term "researcher," but it is true that it is a more specific profile, so we will forward your comment to the colleagues in this Work Package of the project. Thanks again!

Our contacts:

Raquel Díaz Ruiz
raquel@espigoladors.com

Berta Vidal
zerowaste@espigoladors.com

Adrià Burniol García
recerca@espigoladors.com

Héctor Barco Cobalea
circular@espigoladors.com





espigoladors