



EUROPEAN COMMISSION  
HEALTH AND FOOD SAFETY DIRECTORATE-GENERAL

Food and feed safety, innovation  
Food information and composition, food waste

## SUMMARY REPORT

### EU PLATFORM ON FOOD LOSSES AND FOOD WASTE: SUB-GROUP ON FOOD WASTE MEASUREMENT

#### DG HEALTH AND FOOD SAFETY (SANTE)

#### 4<sup>th</sup> meeting

*Brussels, 36 Rue Froissart (Albert Borschette building), Room AB-3A*

*1 February 2019 – From 10:00 to 17:00*

**Chair:** Bartosz Zambrzycki, *Policy Officer, Food information and composition, food waste, DG SANTE*

**Commission:** DG SANTE; DG ENV; JRC; DG AGRI

**Member States represented (11):** BE, DE, DK, ES, FR, IE, IT, LV, NL, RO, SE, SK

**Other public entities (1):** FAO

**Invited speakers:** Martin Bowman, Feedback Global; Lisa K. Johnson Ph.D., NC State University.

**Private sector organisations:**

COPA; EUROCOMMERCE; EUROPATAT; FEEDBACK GLOBAL; FOODDRINKEUROPE; FOODSERVICEEUROPE; HOTREC Hospitality Europe; OSTFOLD RESEARCH, Nofima and Matvett Consortium; RISE RESEARCH INSTITUTES OF SWEDEN AB; WRAP; ZERO WASTE SCOTLAND.

## 1. WELCOME AND ADOPTION OF THE AGENDA

The Chair opened the meeting and welcomed participants to the meeting of the sub-group on 'food waste measurement' dedicated to food loss and waste in primary production. Following the adoption of the agenda, the Chair gave the floor to the first speaker.

## 2. GLOBAL EFFORTS ON MEASUREMENT OF FOOD LOSS AND WASTE

### 2.1 EXPERIENCES AND RECOMMENDATIONS OF QUANTIFYING FOOD LOSS AND WASTE FROM PRIMARY PRODUCTION – PRESENTATION BY CAROLA FABI, FAO

FAO is the custodian agency to develop the Food Loss Index (FLI), based on the average percentage of supplies that do not reach the retail chain. Rather than measuring losses for all types of foods, FAO recommends countries to focus on 10 key commodities and build the index around those. A short description of the index compilation was provided. Referring to pilot studies carried out in various countries, FAO highlighted the need to do a mapping of the food supply chain to identify the critical loss

points and measure losses at the stage of the supply chain where they occur. To do that the FAO proposed a series of measurement approaches, recommendations for data sources, as well as specific methods. In closing the presentation, FAO indicated the tools and technical support available that could be delivered to countries upon request.

FAO recalled the lack of data on food losses globally and identified survey costs and lack of political interest as hindering factors for estimating farm level losses. The pilot studies showed that farmers' declarations underestimate losses. As direct measurement is costly, interviews complemented by direct measurement of a representative sample of farms (in order to adjust the data), are a cost-effective alternative to general direct measurement. To harness the temporary factors that impact on losses, FAO stressed the importance of carrying out baseline survey (including direct measurement) over 2-3 consecutive years, then repeat the survey at 5-year intervals. Moreover, FAO highlighted the discrepancy between the current global estimate for food losses and that reported as a part of Food Balance Sheets, which is due to systematic underreporting and lack of data. Current definition of agricultural production does not include harvest losses and farm-level waste (product left in the field), hence extending existing reporting onto the harvest stage would require modifying this definition. FAO recommended carrying out data collection and compilation of the SDG indicator in partnership with national statistics offices in order to ensure appropriate representative sampling of farms and to piggy-back on existing agriculture surveys by including additional questions or an additional module. In response to an inquiry by WRAP on the impact for farmers of farm-level surveys, FAO clarified that farmers were not informed directly on the losses measured, the survey findings were aimed at national governments first. FAO concluded by recalling the organization's availability to provide technical assistance, training and transfer of knowledge to countries on the methodology for estimating food losses and waste at the farm level.

In response to a question from IE regarding the monitoring of post-harvest losses under the Waste Framework Directive, the Commission explained its scope only covered farm losses sent for waste treatment. On a global level, FAO's data on losses are based on loss data received from countries within the annual agriculture production questionnaires. In reply to IE's question on the reporting of food losses under SDG 12.3, FAO explained the aim was to expand the existing questionnaire to enable appropriate reporting for SDGs purposes and avoid adding an ad hoc questionnaire. On EU level, food business operators will report on waste produced according to their sector of economic activity.

In order to reduce losses at the stage of the food supply chain where they actually occur (COPA, Dr. Schneider), FAO recommended a thorough mapping of the commodity's value chain combined with an analysis of the causes of losses. FAO explained that the actor reporting on losses at a specific stage in the food supply chain is not necessarily responsible for the origin/generation of the waste. For instance, the rejection of produce by actors in the middle stage of the food supply chain (eg food distribution or processing) can be caused by mishandling in primary production or transport.

## **2.2 ACTIVITIES WITHIN MACS-G20 INITIATIVE ON FOOD LOSS AND WASTE: WITH FOCUS ON PRIMARY PRODUCTION – PRESENTATION BY DR. FELICITAS SCHNEIDER, THÜNEN INSTITUTE**

The presentation offered an overview of the work carried out by MACS-G20 (Meetings of Agricultural Chief Scientists of G20 Members) in food loss and waste prevention, among which the [Global Food Loss and Waste Research Platform](#). The latter aims to generate a pool of experts in the field, as well

as research activities, results and advanced technologies in order to facilitate cooperation and sharing of experience. The speaker identified post-harvest losses as an important topic for some of the G20 members and explained that lack of knowledge regarding prevention at farm level was a significant driver for such losses. Measurement of food losses and waste was not a primary focus of MACS-G20, but rather implementing preventive actions and quantifying food saved.

In reply to a question from ZERO WASTE SCOTLAND, speaker explained that the work of MACS-G20 did not cover an analysis of climate impacts related to the generation of food losses and food waste (); however, the group aimed to cooperate with international NGOs dealing with the topic.

WRAP inquired about collaboration with other relevant services (e.g. economic ministries). Dr Schneider highlighted the inherent difficulties in cooperation across Ministries at national level. G20 members supported each other in their national approaches against food losses and food waste through networking and exchange of best practices.

### **2.3 WHY THE EU SHOULD MEASURE HARVEST FOOD WASTE: A REVIEW OF THE EVIDENCE – PRESENTATION BY FEEDBACK GLOBAL**

FEEDBACK GLOBAL laid down a series of arguments for measuring and reporting on food losses occurring at harvest level, referring to the food use hierarchy and the environmental impacts of different valorisation options. Through the experience of its Gleaning Network and direct contact with farmers, the organisation identified various causes for food losses and waste and pointed to the importance of raising consumer awareness and collaboration across the food supply chain as being instrumental in preventing the discard of large quantities of produce.

The presentation highlighted existing data on food losses from scientific literature and a survey carried out among UK farmers on crop waste. Under the EU-funded REFRESH project, FEEDBACK GLOBAL is carrying out research on the potential impact of the new EU legislation on unfair trading practices to reduce food waste on farms. COPA expressed interest in the results of the research. FEEDBACK GLOBAL underlined the need to carry out anonymous studies among farmers, due to the sensitive nature of the issue. One of the barriers to measurement is that actors do not want to be held responsible and/or blamed for food losses and waste.

The Commission inquired as to how growing consumer awareness of the issue influenced functioning of the supply chain and the possible impact of the UK Roadmap to reduce food waste involving all actors. FEEDBACK GLOBAL referred to retailers' growing practice to offer 'wonky vegetable lines' and indicated a sector-wide shift towards more transparent reporting on food waste, with some adopting a supply chain approach. For instance, a major retailer in the UK has worked to increase the proportion of producers' apples which are accepted.

FAO, RISE Research Institute and OSTFOLD Research discussed about data comparability, highlighting the different frameworks, methods and levels (stage of food supply chain, national level etc.) of the studies considered in the presentation. Members emphasised the critical role of direct measurement as a first step in identifying waste streams and causes for food waste generation (FEEDBACK GLOBAL, WRAP, FAO, RISE Research Institute and OSTFOLD Research). WRAP highlighted that the operationalisation of the measurement process together with the active engagement of farmers in the process were key in reducing food losses; food loss and waste is a "shared problem", and actors

need to work together to find effective solutions. Members also addressed the issue of effective communications and how to avoid negative connotations and/or blame when discussing and addressing food loss and waste across the food supply chain (Commission, WRAP, FEEDBACK GLOBAL, SE).

Regarding data collected and methods employed in the process (Commission), FEEDBACK GLOBAL explained that, whilst the motivation and work of the Gleaning Network was important, its capacity was rather limited in comparison to the total estimated yearly losses (100 Tonnes per year, compared to approximately 2.5 million Tonnes overall losses).

In response to a request from Dr Schneider, the Commission confirmed further workshops could be organised for Member States to exchange practices on food loss measurement, should there be requests to do so.

### **3. LEAD STUDIES ON FOOD LOSS AND WASTE FROM PRIMARY PRODUCTION**

#### **3.1 QUANTIFYING FOOD WASTE IN PRIMARY PRODUCTION: EXPERIENCES FROM NORDIC AND NORWEGIAN STUDIES – PRESENTATION BY OSTFOLD RESEARCH**

OSTFOLD Research presented the findings of a pilot study on food losses in primary production carried out by the Nordic Food Waste Project. The study distinguished between waste streams (side flows, rearing of fish and animals) and findings indicated a lack of data in the sector, as well as uncertainties in existing data. A follow up study carried out in Norway focussed on edible food waste and secondary resources from primary production, by using methods such as direct and volume measurements, scanning of packed products, estimates and mass balances between planned production and harvest. A questionnaire has also been distributed to primary producers of selected food categories in order to find out more about production means, food losses and treatment destinations. Further research will be carried out on identifying the most efficient methods to measure food losses.

On the treatment of waste, OSTFOLD highlighted the practice of sending pre- and post-harvest losses to biogas plants to rule out the possibility of spreading pests, however animal feed remains the preferred destination (Dr Schneider, OSTFOLD Research). WRAP explained that combining anaerobic digestion with composting would be a more efficient method to ensure biological safety of the material.

In response to a question by FEEDBACK GLOBAL, OSTFOLD Research clarified that the studies did not aim to identify the causes behind food losses, but rather develop definitions, methods and set up basic statistics. Asked about how the representative sample was selected (FAO), OSTOFOLD Research explained that the questionnaire had been sent to a significant number of producer organisations and a sample has been selected based on the answers received. In terms of harvesting techniques (K. Johnson Ph.D.), OSTOFOLD Research presumed most of the farms participating in the study employed mechanical harvesting and offered the example of onion fields where technological advancements helped reduce food losses.

### **3.2 MEASURING FOOD SURPLUS AND WASTE: THE CHALLENGE OF PRIMARY PRODUCTION – PRESENTATION BY WRAP**

WRAP presented the results of their study on food losses in strawberry and lettuce crops, highlighting the importance of involving industry steering groups in defining project boundaries and reporting the effectiveness of the different measurement methods employed. The research revealed fewer losses occurred when growing the same product variety in tabletop systems as compared to on ground. WRAP indicated that operationalising measurement in primary production plays a key role in reducing food losses, together with the support and tools (e.g. [the Cool Farm Tool](#)) given to the industry. The results of the study also emphasised the benefits of adopting a farmer-led approach to measurement, creating small groups in priority sectors to share and uptake best practices and generate comparative data. The collaborative data sharing approach could help generate national statistics, identify hotspots and generate reference values for industry benchmarking. Last but not least, WRAP launched a call for action to submit data on food losses and waste via the [Food Waste Atlas](#).

In reply to a question received from the Commission, WRAP estimated the cost of one study at around 100.000 euros. WRAP highlighted the advantages of a bottom-up approach, with collective data sharing as a more cost-effective solution. The direct engagement of farmers in the measurement and reporting process also triggered important behavioural changes (WRAP, OSTFOLD Research). FAO mentioned the importance of supporting farmers in choosing the appropriate variety of crops in line with climate conditions, soil type and other factors; but also given the negative impacts of climate change (OSTFOLD Research).

DK reported on efforts to gather data from primary production and indicated a national database on collected waste as a valuable source of information to retrieve data on food waste levels.

### **3.3 MEASURING FIELD LOSSES IN US VEGETABLE PRODUCTION – PRESENTATION BY LISA K. JOHNSON PH.D., NC STATE UNIVERSITY**

The speaker emphasised the benefits of measuring food losses on farm level and referred to existing data as being outdated and insufficient. Obstacles to gathering reliable data were mentioned, such as the issue of underreporting and lack of willingness of farmers to participate in the measurement process. The speaker explained the rationale behind farmers' decisions to leave produce unharvested in the field and indicated that solutions against food losses preferred by farmers are not always in line with those promoted by decision-makers or other actors across the food supply chain. Next, the presentation focussed on a study measuring food losses and analysing potential scenarios of harvest and financial opportunities from selling produce left unharvested. As regards the economic costs of food losses, the speaker mentioned that farmers often write off approximately 20% of the production as "the cost of doing business". Last but not least, the speaker pointed out several scientific studies on food losses in agriculture, as well as video materials presenting measurement methods for losses in [cucumber](#) and [sweet potato](#) crops.

The Commission inquired about similar research carried out in the United States. The speaker explained most work in the field of measuring food losses was carried out by the NGO sector rather than academia. WRAP called for a cautious approach when considering the accessibility of markets and their capacity to accommodate food left unharvested. As regards the perception of farmers on the issue of food losses (WRAP), it was explained that the issue was not of great interest. FEEDBACK

GLOBAL argued that low market prices did not motivate farmers to take measures against food losses and suggested collaborative action across the food supply chain could alleviate the issue.

In closing the meeting, the Chair encouraged members to consider implementing the measurement methods shared during the meeting and offered a short update on the specific legislation related to food waste measurement. The delegated act would be published for public consultation before its adoption, which could be slightly delayed (initially foreseen by end March 2019). The implementing act on the reporting format depends on the final form of the delegated act and will be voted by Member States. FEEDBACK GLOBAL suggested the creation of a template for Member States to report on farm level food losses on a voluntary basis and inquired whether foods returned from the processor to the farmer were included in the scope of the delegated act. The Commission explained the latter were not covered under the legal act if the produce was used on the farm (given the scope of the Waste Framework Directive), but further interpretation, on the case-by-case basis, may be needed. It was also indicated that the implementation of monitoring frameworks for farm loss and waste in all Member States would be a greater challenge than the reporting format itself.