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2019

REPORT ON WG 1 OF THE NATIONAL PACT AGAINST **FOOD WASTE**



Conclusions of the 'Indicators
and Measurements' working
group
2017-2019 period

ADEME



Agence de l'Environnement
et de la Maîtrise de l'Energie

THANKS

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List of abbreviations

- **ADEME**: agence de l'environnement et de la maîtrise de l'énergie [French Environment and Energy Management Agency]
- **CNIS**: Commission Nationale Information et Statistique [National Commission for Information and Statistics]
- **OIW**: Ordinary Industrial Waste
- **DGCS**: Direction Générale de la Cohésion Sociale (Ministère des Solidarités et de la Santé) [Directorate General of Social Cohesion (French Ministry for Solidarity and Health)]
- **DGPR**: Direction Générale de la Prévention des Risques (Ministère de la Transition Energétique et Solidaire) [Directorate General for Risk Prevention (French Ministry for the Ecological and Inclusive Transition)]
- **BBD**: Best before date
- **DPEF**: Extra Financial Performance Statement
- **NFC**: The French National Food Conference
- **EGALIM**: name given to French Law No. 2018-938 of 30 October 2018 for balanced trade relations in the agricultural and food sector and healthy, sustainable and accessible food for all.
- **FW**: food waste
- **WG**: working group
- **FI**: Food Industries
- **LTECV**: Energy Transition for Green Growth law
- **MAA**: Ministère de l'Agriculture et de l'Alimentation [French Ministry of Agriculture and Food]
- **MTES**: Ministère de la Transition Ecologique et Solidaire [French Ministry for the Ecological and Inclusive Transition]
- **SSP**: Service de la Statistique et de la Prospective, service statistique du Ministère de l'Agriculture et de l'Alimentation (le SSP) [French Statistics and Forecasting Service, Statistics Service of the Ministry of Agriculture and Food (the SSP)].



1 PREFACE

1.1 A message from the President of the ADEME, Arnaud Leroy



National involvement in the work against food waste has considerably increased over the last ten years. All food chain stakeholders (producers, processors, distributors, restaurants, consumers) share the same values (agreeing on the notion of 'waste', seeing it as a social, economic and environmental scandal) and numerous initiatives are gradually emerging to reduce waste. For example, the development of new economic activities (start-ups and companies), applications for citizens, action programmes extended to sustainable food in the regions, etc.

However, for any improvement strategy, the progress made needs to be measured; to be able to set ambitious but realistic targets and to analyse variations in waste over time so the necessary corrections can be made.

In addition, the new European obligations in terms of reporting food waste require France to take proactive action to meet its commitments.

This is why, after having carried out its national study 'Food Losses and Waste - Inventory and Management' and numerous control operations to highlight the volumes of food waste in the food chain, the ADEME has become heavily involved in the steering and coordination of the PACT 'Indicators and Measurements' group.

For two years, this central issue has brought together a large number of stakeholders whose commitment has never wavered. The numerous meetings and work carried out by the sub-groups has made it possible to analyse data needs, its availability, to construct necessary observation devices by and for the food chain stakeholders, while at the same time preparing the conditions for a national observation study.

This work's conclusions are presented here. They are not the final results, but the foundations of the actions that stakeholders will take in their sectors to turn these observations into a practical reality, guaranteeing economic and environmental benefits and achieving the objective of halving food waste in our country.



1.2 Messages from participants

- **Patrice Poirier**, AGORES, representative of the 'Consumption' group

'Being a participant in this Consumption sub-group on behalf of AGORES was a real pleasure thanks to the high level of involvement of all participants. The motivation and unfailing commitment of those who regularly attended to help achieve the objective are the highlights of these two years of work together. The work initiated by the sub-group cannot stop now as the reporting system still needs to be organised.'
P.Poirier.

- **Emilie Tafournel**, Fédération du Commerce et de la Distribution (FCD) and **Stéphan Arino**, E.LECLERC, representatives of the 'Distribution' group

'This work is essential to meet the need for quantified reporting on food waste and to enable all stakeholders, including our stores, to act even more effectively against food waste. The work enabled us to define the available and relevant data to be taken into account in a clear, coordinated manner. The implementation of this type of nationally harmonised reporting project necessarily requires coordination under the auspices of the ministries while relying on the operators' existing tools.'
E.Tafournel and S.Arino.

- **Marie Castagné**, Fédération Française des Banques Alimentaire, representative of the 'Processing' group

'Participating in the work on waste measurement with the food industry has been intense, with its national and European perspective. Exchanges were rich and led to the establishment of indicators and a methodology that will be used for further national and European work.'
M. Castagné.

- **Dorothee Briaumont**, SOLAAL, representative of the 'Production' group

'Thanks to the involvement of agricultural stakeholders, we have been able to identify courses of action that take into account the realities of the profession, for a better understanding of this issue.'
D.Briaumont.



2 SUMMARY

The working group dedicated to 'indicators and measurement of food waste' had two objectives:

- Enable each food chain stakeholder to set up a long-lasting and effective observation system
- To possess national observation tools to monitor progress towards achieving the national objective of reducing food waste by 50% by 2025.

The result was strong stakeholder involvement in this issue, which brought together up to 100 participants representing the entire food chain over more than 2 years.

The work, which was organised into four groups, made it possible to agree on the data to be collected and to outline the first components of a data collection corresponding to the specific characteristics of each sector. Tests set up by the various groups will make it possible in the short term to confirm the choices made and to suggest collection methods. This monitoring still needs to be deployed and implemented in an organised and autonomous manner by each sector.

The organisation of national reporting and use of the data to build an overall indicator for France is now necessary. Setting up centralised and adapted governance based on the working group's proposals will guarantee accurate implementation by the stakeholders. This work has also been echoed throughout this mandate by the European delegated act which makes the measurement and monitoring of food waste mandatory for all Member States.

The voluntary work by the PACT stakeholders involved in this measurement exercise shows the maturity of the various sectors and the progress made by France since the first PACT work in 2013.

3 OBJECTIVE OF THIS REPORT

PACT II runs for the 2017-2020 period. The ADEME led the 'Indicators and Measurements' working group during this period, bringing together all the voluntary stakeholders in the food chain to work on the issue of measurement.

The objective of this report is to present the work carried out over this period and to share the conclusions. Everything presented here has been revised and approved by the working group participants.

4 DEFINITIONS

First of all, some definitions need to be provided:

⇒ Food waste

Food waste was defined during the initial PACT I work as follows: 'All food directed to human consumption that, at one stage of the food chain, is lost, thrown away or degraded constitutes food waste'.

It was agreed at the outset of the work on PACT II not to question this definition so as to focus on the issue of measurement. It should be noted, however, that this definition is still being debated in various groups, particularly in the light of European work and the European directive which, although referring only to 'food waste', nevertheless specifies that information relating to animal¹ recovery must be separated.

¹ As a reminder, the law of 11 February 2016 sets out the hierarchy of actions against food waste as follows: 1. prevention, 2. human recovery/use (processing or donation), 3. animal recovery, 4. compost or energy (methanisation).



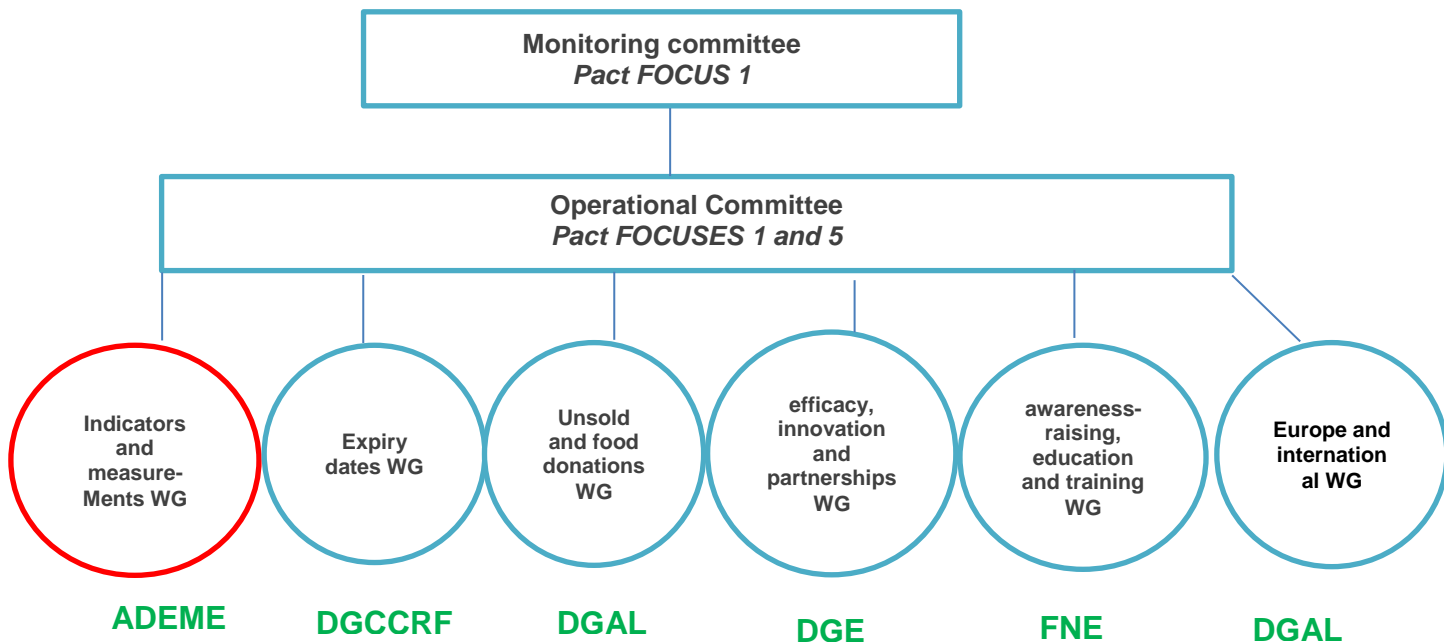
⇒ Food losses

This term is accepted more higher up in the food chain, better highlighting the economic impact of this loss. This term was therefore mainly used by the 'Production' and 'Processing' groups.

5 CONTEXT AND ORGANISATION OF THE WORKING GROUP

5.1 Pact II

In June 2017 the Ministère de l'Agriculture et de l'Alimentation (MAA) [French Ministry of Agriculture and Food (MAA)] launched the second National Pact against Food Waste (FW) for a three-year period. Out of the 6 working groups organised, the first deals with the definition of indicators and measurement of FW. The ADEME steered this WG for the 2017-2019 period.



As a reminder, PACT II has led to

- Renewed governance around 6 structuring focuses;
- 10 state commitments broken down into 19 measures
- Numerous partners focusing on 16 measures.

All information on the PACT II commitments and measures can be found on the website of the Ministère de l'agriculture et de l'alimentation [French Ministry of Agriculture and Food]².

5.2 Objectives

As defined at the outset, the mandate of this WG specified in PACT 2 is as follows:

- *'Prioritise areas where more accurate waste measurement is needed;*

² <https://agriculture.gouv.fr/pacte-national-de-lutte-contre-le-gaspillage-alimentaire-les-partenaires-sengagent>

- *Define indicators for monitoring and assessing food waste which can be shared by several sectors of the food chain'*

In measure 3 of PACT 2, the partners have undertaken to quantify FW: *'the State partners signing this measure undertake to collect quantitative data on waste and its evolution, and to make it available to the ADEME, as necessary, for its quantitative monitoring work'.*

This WG had two objectives:

- **Making sure that each stakeholder in the food chain has a long-lasting and effective observation system to monitor their progress towards reducing food waste;**
- **Having observation tools to monitor the national objective of reducing food waste by 50% by 2025.**

5.3 Calendar

The work was organised into two periods:

- The first 18 months were devoted to the definition and validation of the available and relevant data to be collected,
- Over the last year, the most effective methods for collecting data from the various stakeholders was determined.



6 ORGANISATION

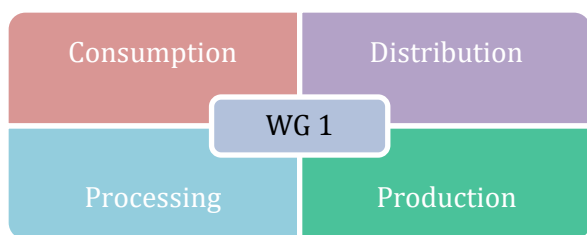
As proposed at the first WG1 meeting (13 September 2017), a two-tier organisational structure was established:

- **Meetings in sub-groups** representing each of the food chain links, so as to make the best use of working time together with those stakeholders with the same needs and coordinated by a volunteer representative from the sector.
- **Plenary meetings** (2 per year) to:
 - o Share the sub-groups' work,
 - o Give an overview and propose coherent, combined and collectively approved indicators,
 - o Approve the data reporting methods and their monitoring over time.

All of these meetings were held face to face in Paris.

To take into account the specific characteristics of each stakeholder, the WG was organised into 4 sub-working groups representing the 4 main links of the food chain.





The sub-groups were formed voluntarily by the participants involved. The number of participants has gradually increased over the course of the meetings, underlining the interest of the stakeholders in this work.

A total of 28 sub-group meetings were held, including a joint withdrawal/recall meeting attended by members of the Processing and Distribution sub-groups. In addition, 4 plenary meetings (2 per year) brought together all WG1 participants to share each sub-group's results, to take stock of progress and discuss the next steps. Minutes of all of these meetings were sent to all registered participants and are available on a download platform specified in Annex 2.

	2017		2018			2019		
Distribution		05/12/17	20/03/18	26/06/18	09/10/18	22/01/19	03/04/19	03/10/19
Consumption		07/12/17	20/03/18	26/06/18	02/10/18	24/01/19	01/04/19	30/09/19
Processing		23/01/18	29/03/18	02/07/18		22/01/219	04/04/19	30/09/19
Production		23/01/18	06/04/18	02/07/18	09/10/18	24/01/19	04/04/19	03/10/19
Joint Processing/ Distribution meeting						22/01/19		
Plenaries	13/09/17		12/04/18		20/11/18		21/05/19	

Consumption

- 7 meetings
- 16 structures represented
- Representative: Patrice Poirier / AGORES

Processing

- 6 meetings
- 13 structures represented
- Representative: Marie Castagné / FFBA

Distribution

- 7 meetings
- 18 structures represented
- Representatives: Emilie Tafournel / FCD and Stéphan Arino / Leclerc

Production

- 7 meetings
- 12 structures represented
- Representative: Dorothée Briaumont / SOLAAL

Mixed: Production + Processing
withdrawals-recalls

- 1 meeting
- 8 structures represented

7 PARTICIPANTS

The work of WG1 brought together up to 100 different participants, representing all links of the food chain. Most were part of one or even two sub-groups, others only participated in the plenary sessions. In each sub-group, one person volunteered to act as a representative for the whole group. The meetings were mainly prepared with this person.

The complete list of participants is available in Annex 1.

The meetings were hosted by the ADEME, which was assisted in coordination, logistics, reporting and analysis by the INCOME Consulting & HAATCH team.

8 NATIONAL AND INTERNATIONAL CONTEXT

The WG1 work took place in a period when there were many ongoing national and international regulatory frameworks and developments.

8.1 The French National Food Conference (Etats généraux de l'alimentation) and the EGALIM Law

In October 2017, just after the launch of the PACT WG1 work, the French National Food Conference (NFC) began with 4 meetings devoted to combating food waste. With a much broader scope of reflection than that of WG 1, these meetings mobilised the stakeholders. One year later, the different work of the NFCs led to the law for balanced trade relations in the agricultural and food sector and healthy, sustainable and accessible food for all, otherwise known as the EGALIM³ Law.

Through its article 88, this law extends the obligations that mass catering and food industries have; in particular with the obligation to carry out a prior diagnosis as to how all mass catering operators will work against food waste. The ordinance to clarify the details was adopted on 21 October 2019⁴ and mainly details the terms and conditions of donations.

In this context, the ADEME has made a toolkit⁵ available to stakeholders in the mass catering sector enabling them to carry out diagnoses at three levels of detail. These tools served as a reference for the work of the sub-groups.

In June 2019, MPs G. Melchior and G. Garot released a parliamentary⁶ report evaluating the Law of 11 February 2016 (known as the 'Garot Law'). The report repeatedly stresses the importance of measuring food waste and makes the following recommendations: '*... the Government should give concrete form to the public policy against food wastage, which would ensure - among other things - the measurement of food waste by means of a methodology and statistical monitoring indicators*'.

8.2 Observation and statistical systems

On 3 April 2019, the Conseil National de l'Information Statistique (CNIS) [French National Statistical Information Council] brought together producers and users of food waste data in an 'environment and sustainable development' commission. On this occasion, the ADEME presented the work of WG1 of the PACT and the DGPR⁷, the delegated act of the Waste⁸ directive to date.

³ [EGALIM Law](#) of 30 October 2018

⁴ [Ordinance](#) of 21/10/19

⁵ ['Diagnosis of food waste in mass catering' toolkit](#) - ADEME

⁶ [2025 Report](#) giving information and an evaluation of Law 2016-138

⁷ DGPR : Direction Générale Prévention des Risques – Ministère de la Transition Ecologique et Solidaire [Directorate General for Risk Prevention - Ministry for the Ecological and Inclusive Transition]

⁸ See page 79 of the [OJ of 27/09/19](#).



Following this meeting, an opinion was made public stating: *'... the system for observing this issue seems to be insufficiently developed. The commission takes note of the available data, as presented during the meeting. The food waste information system will have to be completed (in particular for the food catering sector and households) and then updated regularly (at least every 4 years) to respond to the new European report. The question of governance of the information system to be developed is also to be studied, particularly in terms of production, quality and commitments to be respected for the reporting of international indicators (SDG).*

The Commission therefore recommends that the official statistical service works to complete the existing information system and meet national and international obligations. These points could first be investigated by a working group, which would bring together the various experts and stakeholders concerned with the topic.'

Following this, the various Ministry services concerned met to structure the observation and to detail the work in progress on the subject at different levels. The work of WG1 contributes directly to these reflections and provides the points of view of stakeholders in the field.

8.3 The European directive

After several years of exchanges with the Member States and preparatory work, on 3 May 2019 the European Commission adopted a common methodology for measuring food waste in the European Union countries.

This delegated decision, [published in the OJ of 27 September 2019](#), is in line with the UN's SDG 12.3 to halve global food waste per capita at retail and consumer levels by 2030 and to reduce food losses during production and supply.

Although the delegated act defines what is to be measured as food waste at each stage of the food supply chain and how this is to be done, it provides flexibility as to how data collection is to be carried out at national level. **On the basis of the proposed methodology, Member States must set up a monitoring framework to provide the Commission with the first data by mid-2022 on the basis of 2020 data.**

It is expected that the amount of food waste generated in a calendar year will be measured every four years over five stages of the supply chain and an annual estimate will be made between two measurements.

All methodological recommendations were presented at the plenary session of 20 May 2019 and attention was paid as to the consistency of the work throughout the WG1 meetings. This relates in particular to the scope, taking into account animal recovery. As a reminder, the Directive states that *'information on food originally intended for human consumption and then directed to animal feed [...] is important for the understanding of material flows related to food and may be useful in planning a targeted food waste prevention policy. For this reason, Member States should have the possibility to report this information in a uniform manner on a voluntary⁹ basis'*. All the groups have therefore taken care to separate this animal recovery so that it can be taken into account in European reporting.

9 PREREQUISITES FOR THE SUBGROUP WORK

This working group follows on from a first group that met during the first term of PACT 1 (2013-2016) named 'Definition and evaluation of food waste'. Despite evolving at a time when these matters were less pertinent than during PACT 2, this WG nevertheless had the great merit of agreeing on a common¹⁰ definition that is now a reference term and enabling all the players involved from that time on to share their challenges and actions.

⁹ See page 79 of the [OJ of 27/09/19](#).

¹⁰ 'All food directed to human consumption that, at one stage of the food chain, is lost, thrown away or degraded constitutes food waste'.



In terms of measurement, the WG had made considerable progress in preparing the available data to enable the WG set up in 2017 to start from these foundations.

It should also be noted that a number of recommendations in the report have been echoed in the second term:

- Making use of official statistics through the CNIS;
- Identifying existing channels to quantify losses at low cost, without overburdening professionals;
- Combining the proposed measurement methods in order, on the one hand, to continue involvement (e.g. in control operations) and, on the other hand, to ensure statistical accuracy. At the time a measurement was envisaged every 5 years.

With regard to prerequisites, and as indicated in point 4, it was agreed to start from the definition of food waste from the work of PACT 1. Similarly, all groups agreed that the reference year should be 2015, the first year for which data are available for all sectors¹¹.

Similarly, the following were defined as outside the group's scope:

- The performance indicators from the Law or of the overall PACT,
- The evaluation of the actions implemented by the stakeholders.

Finally, prior to the presentation of the different sub-group work, the data from food aid associations should be mentioned. Thanks to their actions, they occupy a key position in the work against waste, yet the donation data should not be counted as food waste. As outlined in the 2016 Law, donations are considered to be preventative actions and do not fall under the definition of food waste. **Therefore, if through the rigorous monitoring of associations and the data capitalised annually by the Direction Générale de la Cohésion Sociale (DGCS) [Directorate General of Social Cohesion] the volumes of donations are known and monitored by all stakeholders, they are to be monitored separately and distinctly from the volumes of food waste.**

10 SUBGROUP WORK

The groups were guided by the two-part objective of setting up an internal observation system for food waste (FW) within the various activity sectors while contributing to the creation of a national indicator for overall FW monitoring.

As with any observation system, the preliminary work involved identifying the relevant data to be collected. Questions on the relevance of the data, its availability and its nature were then raised.

All groups adopted a broadly similar approach to address all of the following points:

- Creation of a general FW flow chart with the main stages
- Identification of FW measurements performed and data collected during studies, tests, weighing campaigns,
- Identification of the data most frequently available from the sector's stakeholders,
- Set up of one or more data collection charts. These charts are organised in 2 or 3 levels so that there can be different levels of participation in the observation system depending on the stakeholders' capacities to collect this data:
 1. Essential data (this is the simplest data but it must be common to all),
 2. Optional data (preferable),
 3. Optional advanced data (if possible) and more in line with a system for implementing an action plan.
- Research and set up of data collection methods,
- Data collection test.

¹¹ With reference to the ADEME 2016 [study](#) based on 2015 data 'Food losses and waste, inventory and management at each stage in the food chain' and [the INRA study](#), France Agrimer and INTERFEL 'pertes agricoles dans la filière fruits et légumes' [Agricultural losses in the fruit and vegetable sector] of 2015.



The two years of reflection on this system have helped lay the foundations for a more global observation system for monitoring FW at national level, which is common to all stakeholders. Within this framework, the samples of stakeholders statistically representative of the various sectors of activity was defined (additional study carried out by the company IN NUMERI commissioned by the ADEME between March and June 2019).

This part shows the results of the work for each of the sub-groups over the entire WG 1 period (the sub-groups met between December 2017 and October 2019).

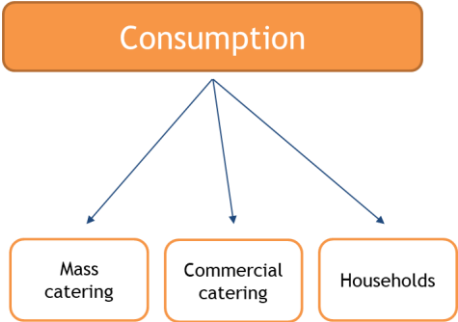
10.1 CONSUMPTION sub-group

10.1.1 Participants

This working group brought together up to 17 structures. The representative was Mr Patrice Poirier representing AGORES.

Participants
1001 REPAS
AGORES (representative)
ACPPA
AMORCE
BETTERFLY TOURISM
COMERSO
CONSEIL DEPARTEMENTAL DE L'ESSONNE
EC6
EASILYS
EQOSPHERE
FAMILLES RURALES
GECO FOOD SERVICES
RÉGION ILE-DE-FRANCE
RESTAU'CO
SNRC
UMIH
WINNOW SOLUTION

10.1.2 Data to be collected for an observation system



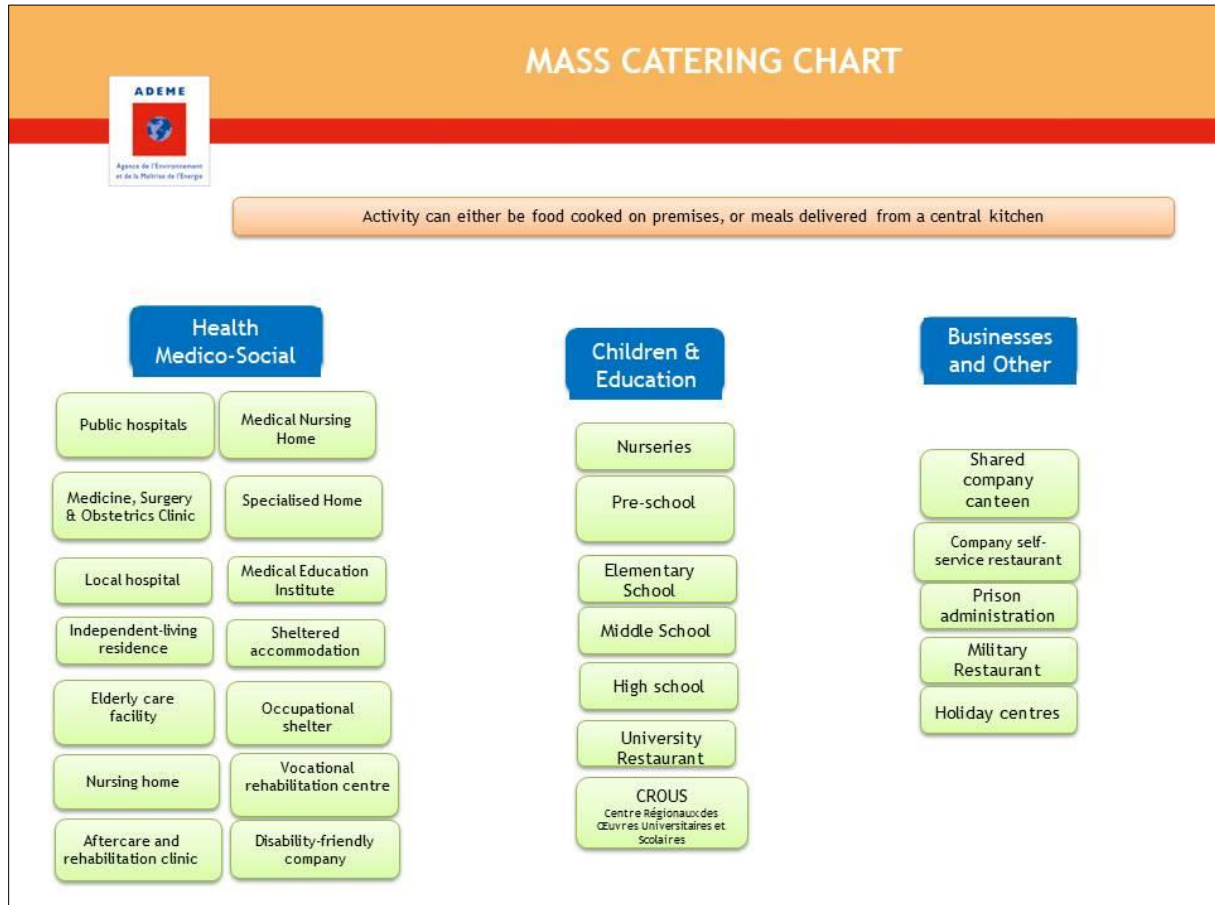
From the start of the work, segmentation was made between mass and commercial catering, which do not have the same specific features.

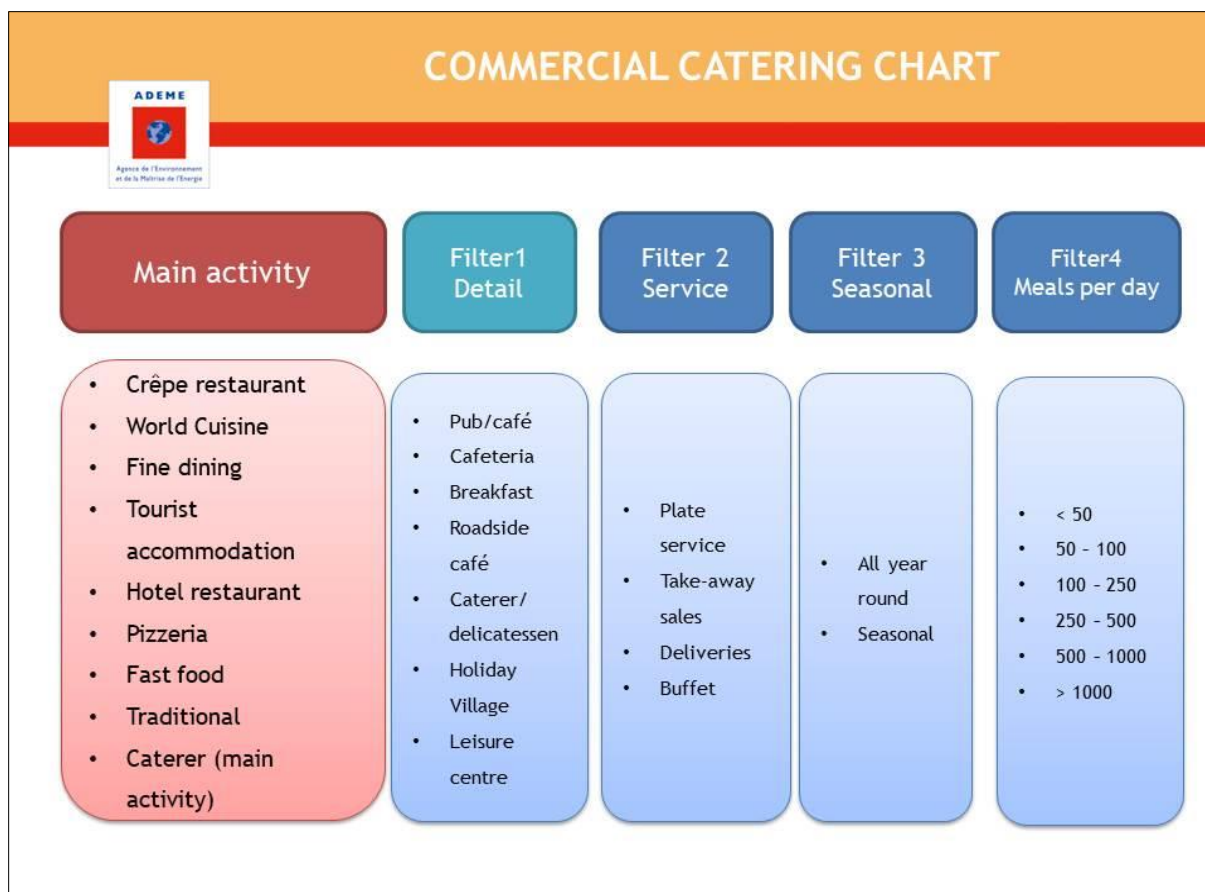
Household consumption, on the other hand, was taken out of the sub-group's work because it was too specific and required bringing together stakeholders who it was difficult to involve and who were not

present at this WG. This last segment is dealt with separately by the ADEME and is presented in point 10.6.

After having drawn up and validated the stakeholder chart in mass and commercial catering, the sub-group focused on determining the data to be collected according to the type of cuisine used by the community.

Chart:





This initial chart work made it possible to identify the different activities and their characteristics and the need to find data collection elements common to all.

Data to be collected by type of food service:

A large number of stakeholders in the mass catering sector are already carrying out campaigns to measure food waste. These practices can be encouraged and made widespread by providing a common methodological framework with several levels of detail, so that as many people as possible provide data that is not too complicated to collect and so that the most committed stakeholders can provide the most detailed data available to them. Several stakeholders participating in the sub-group shared their current weighing campaigns in different types of establishments. The whole of the health sector is already heavily involved in this.

Mass catering is particularly advanced in terms of weighing and reporting. This sector benefits from some years of experience following the LTECV¹² and the numerous studies that have been carried out. At the time of the sub-group's work, the EGALIM¹³ law reinforced the LTECV provisions by making it compulsory to carry out a diagnosis in public and private canteens.

The suggestion to operate at different levels of data accuracy means that it is possible to take into account the different diagnostic capabilities of institutions. While it would not be possible to ask everyone to conduct a detailed data collection, it would be a shame to deprive ourselves of this information when it is available.

The data to be collected was agreed for the 4 main food service families, taking into account the specific features of each:

¹² LTECV: Energy Transition for Green Growth law– 17 August 2015. Art.102 Obligation for mass catering services to implement an approach to combat food waste

¹³ See § 8.1

- Central kitchens,
- Mass catering establishments with on-site kitchen
- Mass catering establishments with off-site kitchen
- Commercial catering establishments

Regardless of the type of catering, essential information has been identified to be collected from all establishments:

- Sector of activity (school, healthcare, university etc.)
- Number of meals cooked (excluding off-site establishments) and dishes served (excluding centralised kitchens) for each weighing day
- Management method: self-managed or delegated
- Distribution method: on-site kitchen, centralised kitchen, hot or cold distribution.

The participants agreed on the duration of the weighing sessions advised for the establishments:

- In mass catering: at least 1 week per year. This can mean 4 weighing sessions for a school that serves meals only at lunchtime and not on Wednesdays and weekends, or 14 weighings for a nursing home that serves lunch and dinner 7 days a week.
- In commercial catering: at least 3 consecutive days per year, ideally over one week for all meals (lunch and dinner). As the season is a sensitive factor, several weighings per year may be relevant.

For the weighing sessions themselves, common data to be collected was determined for all stakeholders regardless of the management or distribution method. Level 1, considered to be 'mandatory', contained these items:

- The 3 courses: starter, main course with accompaniment, dessert. This data could be recorded either separately or grouped together depending on the establishment's wishes.
- Bread
- For establishments where this is the case: donation to food¹⁴ aid associations (mainly in centralised kitchens).

If at this level the simplest solution is suggested, i.e. to weigh all food waste; packaging and other non-food waste (paper towels etc.) must be subtracted from the measurement.

In all cases, depending on the context, the unit of measurement chosen is either grams or kilograms per meal service. For liquids, the unit of measurement is either litres or kilos.

Level 2 is split into segmentation by stage (production/distribution/service) and a ratio is proposed to separate unavoidable waste (bones, cores, pips and stones, fruit peel etc.) from avoidable waste. However, this ratio has yet to be defined on the basis of feedback and studies already carried out. Although a ratio of 20% of unavoidable waste is commonly applied in ADEME studies, it is highly variable depending on the menu and no figure has been definitively set.

As far as commercial catering is concerned, data collection is less developed today. It must be initiated and encouraged, in particular by highlighting the economic impacts of measurement and setting up awareness campaigns for professionals.

In addition, all participants agreed that the more detailed the weighing sessions, the more useful they are for the implementation of an effective action plan. However, since the exercise here is to find an acceptable minimum to enable the greatest number of people to send back information, Level 3 will remain optional.

¹⁴ The ordinance of 21/10/19 introduced an obligation for establishments producing more than 3 000 meals a day to propose a donation agreement with authorised food aid associations

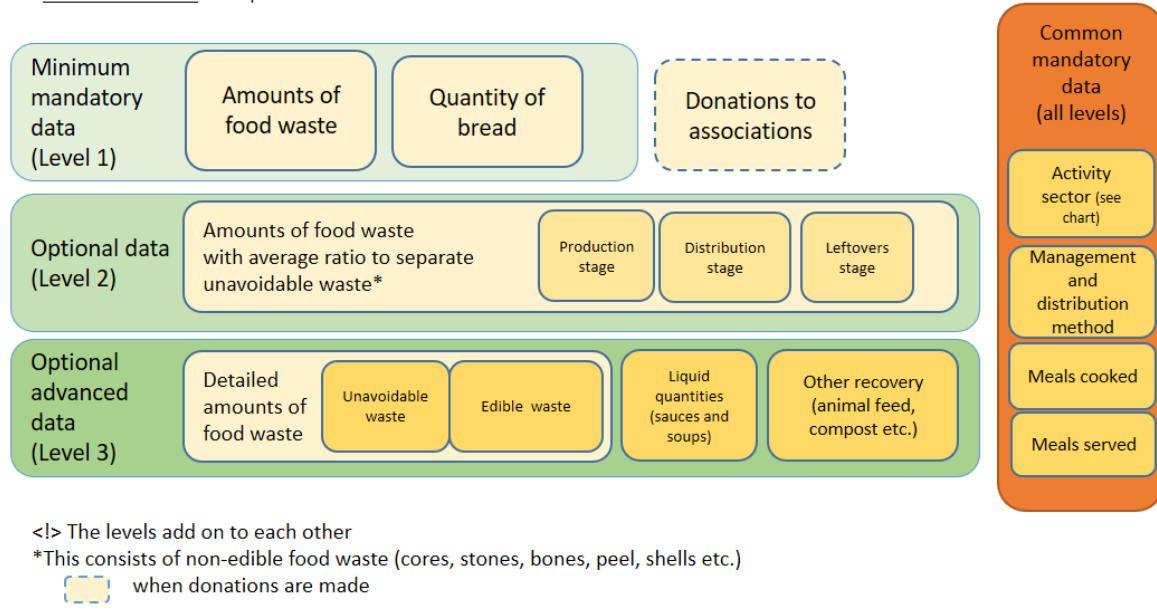
WG proposals for data collection:

Mass catering: On-site cooking

Recommended weighing frequency: At least 1 week per year

Examples: 4 weighing sessions for a school that serves meals only at lunchtime and not on Wednesdays and weekends, or 14 weighings for a nursing home that serves lunch and dinner 7 days a week.

Measurement unit: kilos per meal

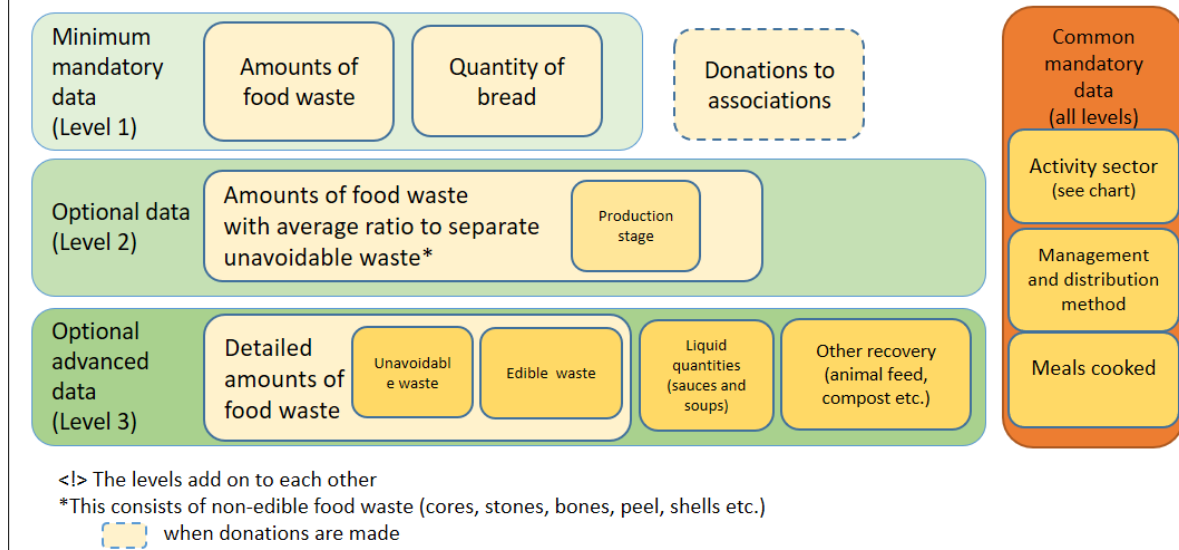


Mass catering: Centralised kitchen

Recommended weighing frequency: At least 1 week per year

Examples: 5 to 7 days in a row depending on activity type (lunch and dinner)

Measurement unit: kilos per meal

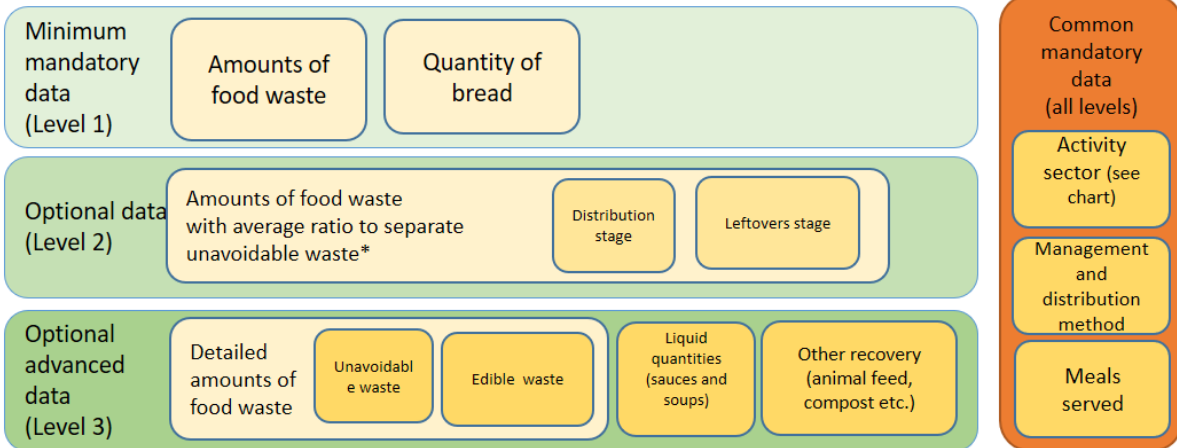


Off-site catering: excluding on-site cooking (hot or cold distribution)

Recommended weighing frequency: At least 1 week per year

Examples: 4 weighing sessions for a school that serves meals only at lunchtime and not on Wednesdays and weekends, or 14 weighings for a nursing home that serves lunch and dinner 7 days a week.

Measurement unit: kilos per meal



<!> The levels add on to each other

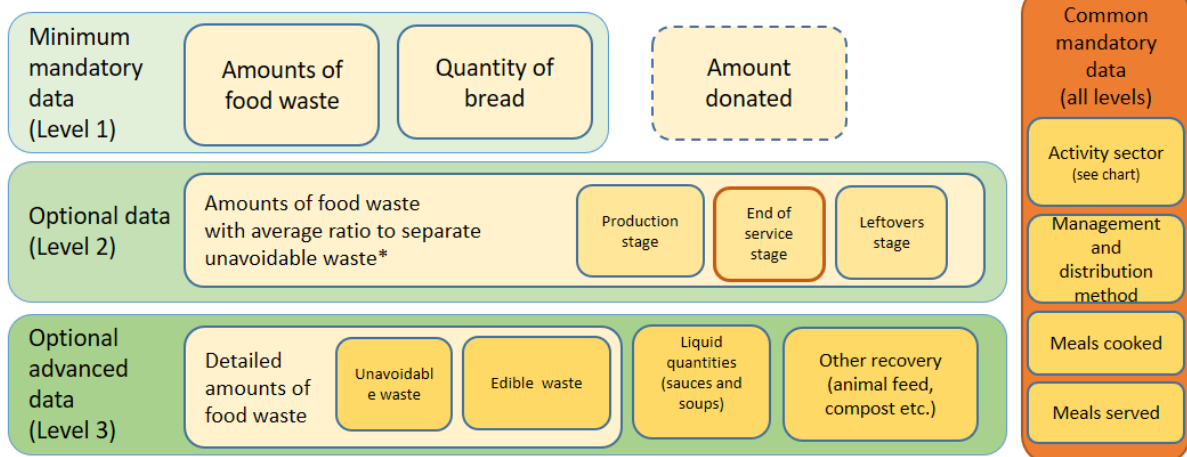
* This consists of non-edible food waste (cores, stones, bones, peel, shells etc.)

Commercial catering

Recommended weighing frequency: At least 3 days in a row once a year – advised duration 1 week

Examples: Weighing for all services (lunch and dinner) on working days – several campaigns to take into account different seasons

Measurement unit: kilos per meal



<!> The levels add on to each other

* This consists of non-edible food waste (cores, stones, bones, peel, shells etc.)

 Not necessary for fast food when donations are made

Points to note:

All participants stressed the need to clarify the definitions of the terms used (e.g. unavoidable waste) for a good understanding of the elements which need to be reported. Note that these definitions may vary from one type of food service to another. To this end, all terms used were defined and approved by the group (to be found in the minutes of the meeting of 30 September 2019 in Annex 2). In addition, there may still be establishments that do not possess weighing equipment. As legislation has evolved recently, this difficulty should gradually be reduced.

Generally speaking, there is a risk of missing losses/waste in storage, especially for central kitchens and commercial catering (waste independent of services).

The issue of the cost of waste is not included in the proposals but it will be important to include it later as a lever of interest in measuring the evolution of waste and reducing it.

It must also be taken into account that in mass catering, biowaste is not always separated and that many establishments are still dependent on the communes for collection and therefore waste separation and sorting.

For commercial catering, a methodological difficulty was pointed out in accounting for losses in takeaway foods and catering, as these are not included in the analysis at this stage (representing around 10% of out-of-home catering). Another consideration is the sensitivity of the results related to the seasons, which may need to be taken into account in the analysis of the results. High staff turnover, lack of space in kitchens for sorting bins and just-in-time organisation are all factors that need to be taken into account when mobilising the sector to achieve quantitative returns.

It should be noted that the data collected does not include control dishes, as well as foodstuffs that are resold at a low price at the end of the day or at the end of the service (applications such as 'Too Good to Go'), as these foodstuffs will in theory be consumed.

Both sectors agree not to set a measurement period. This should remain at the organisational discretion of each stakeholder. On the other hand, it is recommended that the same measurement period be kept from one year to the next, so as to take seasonal variations into account.

With regard to data reliability, a discussion was had as to whether it would be possible to have a higher reliability level in the sample data collected by using connected scales (with method for sorting and weighing separated by production/end of service/leftovers on plate) than with level 1 overall data with manual weighing.

10.1.3 What are the collection methods for the observation?

All participants confirmed the sector's interest in carrying out regular weighing sessions and organising the reporting system. However, this still needs to be organised for all groups.

The strong driving force in the mass catering sector means that there are already several operational tools making it easy to carry out weighing campaigns. Several tools were mentioned and some were presented: EMApp (CNFPT), Menu.Co (Restau'co) or weighing spreadsheets used for specific/one-off operations (ACPPA, operation 'Repas à l'hôpital', etc.). While these tools all have their merits, the question arises as to how to compare results and exploit the data from different tools.

With the Easyls tool presented during the session, several sites can be selected to obtain a consolidated view of the weights entered in the software interface and to compare several sites. The principle and interest of using connected scales (with connected waste bins and sorting tables), which is gradually being developed in establishments and which facilitates information reporting was also presented.

While each stakeholder is completely free to use the tools that seem best suited to their use, the question of how to organise the reporting system remains. In the last working sessions, the use of an online questionnaire was studied, enabling any stakeholders in the mass or commercial catering sectors to send in data from their weighing campaigns. A questionnaire proposal was made by INCOME Consulting and approved by the participants.

The stakeholders involved agreed to test and pass on this questionnaire ensuring that the questions and data entered were properly understood. It will be necessary to make use of the feedback from this test, which took place in November 2019.



10.1.4 Which sample to use for a national observation?

The main issue is to explore how to move from voluntary participation to collecting data from randomly selected institutions, using a statistically reliable sample.

To estimate this number, the company IN NUMERI, commissioned by the ADEME, provided the following information:

To define the sample, mass and commercial catering could be split into the following broad groups:

- Education
- Health and social care
- Company restaurants
- Commercial catering

10.1.4.1 Education

For this sector, the sampling is based on SIRENE data for primary and secondary education and CROUS¹⁵ data for universities.

The proposed indicator is the ratio 'grams of FW per meal', assuming the number of meals is known. The number of meals is deducted from the number of students (source: statistical services of the French Ministry of Education) and the INCA3 survey. These meal numbers are yet to be confirmed.

Hypotheses about the number of meals:

- Nurseries: 50% of children, 220 days per year
- Pre-schools: 25% of children, 220 days per year
- Elementary, primary, middle and high schools: 40% of children, 220 days per year

Sampling plan:

EDUCATION	Number of establishments	Sample	Number of students	Meals (millions)	Average FW in g/meal	Standard deviation of FW in g/meal	Accuracy	Relative Accuracy	Food waste (tonnes)
Nurseries (85.10)	15440	100	448 370	49.3	120	70	14	12%	5 918
Primary schools (85.20)	50877	500		547.44	110		6	5%	60 146
Pre-school	14333	141	1 499 762	82.5	128	69	12	9%	10 558
Elementary school	16576	163	2 525 750	222.2	103	61	10	9%	22 893
Primary school	19968	196	2 757 698	242.7	110	62	9	8%	26 695
Secondary schools (85.31, 85.32)	11343	300		523.0	118		6	5%	68 463
Middle schools	7153	189	3 306 388	291.0	119	47	7	6%	34 624
High schools	4190	111	2 636 312	232	117	50	9	8%	27 143
CROUS	750	150		65	103	50	8	8%	6 695
Grand total	78410	1050	448370	1 184.7	119.2		3.7	3%	

¹⁵ [CROUS](#)



10.1.4.2 Health and medico-social care

The proposed sampling frame combines the SAE¹⁶ frame (for health care institutions) and the FINNESS¹⁷ frame for social institutions.

The proposed indicator is the ratio 'grams of FW per meal', assuming the number of meals is known. The number of meals is deducted from the number of hospital/accommodation beds (source: SAE/STATIS for healthcare and CNSA for accommodation) and the number of places (day hospitalisations).

There are 2 meals per day, per bed, and 1 meal per day, per place, (source: CNSA2017 CNSA2017 Les chiffres clés de l'aide à l'autonomie and DREES, enquêtes auprès des établissements et services en faveur des adultes et familles en difficulté sociale (ES-DS) 2012 and 2016).

Sampling plan:

	Number of establishments	Estimated meals/year	Sample	g/average meal	Standard deviation	Accuracy g/meal	Relative Accuracy	Food waste (t)
University & regional hospitals	178	56 563 685	50	170	80	19	11%	9 616
Other public hospitals	1198	141 441 150	110	170	80	15	9%	24 045
Medicine, Surgery & Obstetrics Clinic	1340	102 196 715	100	170	80	15	9%	17 373
Aftercare and rehabilitation clinic	349	22 395 670	80	170	80	16	9%	3 807
Accommodation for the elderly	10 098	438 000 000	300	170	80	9	5%	74 460
Residential nursing care for disabled adults or children	5 249	365 000 000	284	170	80	9	5%	62 050
Other social care establishments	1 092	102 200 000	100	170	80	15	9%	17 374
Accommodation in public structure	1 828	56 210 000	100	170	80	16	9%	9 556
All	21 332	1 284 007 220	1 124	170	80	5	3%	

10.1.4.3 Company catering

Here too, the sampling frame is based on SIRENE data (56.29). Administration food services are included: establishment 56.29B in an administration (legal code of the company). On the other hand, there are only 279 companies with the code 56.29A in ESANE¹⁸. 12 groups represent 75% of the figure according to XERFI¹⁹. It would therefore seem essential to organise the survey with the groups.

The proposed indicator is the ratio 'grams of FW per meal', assuming the number of meals is known. The number of meals is deducted from the turnover of the companies and from the average value of a canteen meal, i.e. €7. These meal numbers are yet to be confirmed.

¹⁶ [SAE](#)

¹⁷ [FINNESS](#)

¹⁸ [ESANE](#)

¹⁹ [XERFI](#)



Sampling plan:

COMPANY CATERING	Number of establishments	Sample	% of company turnover in	Estimated turnover outside schools, healthcare (million euros)	Meals provided to companies, outside schools, healthcare	Average FW per meal	Hypothesis/assumption of standard deviation	Accuracy if No. of meals known	Relative accuracy if No. of meals known	Tonnes of FW
56.29A. Companies providing meals										
1 to 5	2180	150	60 %	578	83	120	70	11	9%	9 912
6 to 9	707	100	60 %	375	54	120	70	13	11%	6 429
10 to 49	961	150	60 %	2 039	291	120	70	10	9%	34 955
50 to 99	63	63	60 %	501	72	120	70	0	0%	8 593
100 or more	37	37	60 %	785	112	120	70	0	0%	13 458
Total	4453	500		4,279	611	120		5	4%	73 347
56.29B. Use in concessions, excluding administration										
No employees	4201									
1 to 5	3260	200	60 %	251	36	120	70	9	8%	4 303
6 to 9	759	100	60 %	117	17	120	70	13	11%	2 004
10 to 49	825	100	60 %	508	73	120	70	13	11%	8 711
50 to 99	48	48	60 %	111	16	120	70	0	0%	1 901
100 or more	42	42	60 %	259	37	120	70	0	0%	4 435
Total	9135	490		1 246	178	120		6	5%	21 353
56.29B administration					0.007					
No employees	705	50			8	120	70	19	16%	931
1 to 5	299	60			6	120	70	16	13%	716
6 to 9	171	40			7	120	70	19	16%	819
10 to 49	329	100			53	120	70	11	10%	6 304
50 to 99	28	28			17	120	70	0	0%	2 012
100 or more	5	5			8	120	70	0	0%	958
Total	1537	283			98	120		7	5%	11 740
56.29B total										
Total	15125	1273			887	120		4	3%	



10.1.4.4 Commercial catering

The sampling frame corresponds to the SIRENE database. Given the specific nature of the sector, establishments without employees are also surveyed.

The proposed indicator is the ratio 'grams of FW per meal', assuming the number of meals is known. The number of meals is deducted from the turnover of the companies and from the average value of a meal, assuming the following values²⁰.

Hypothesis average ticket		
	5610A	23.0
	5610B	9.5
	5610C	14.0

Survey example:

	Number of establishments (SIRENE 2018)	Turnover (millions of euros)	Sample	Meals served (millions)	Average FW per meal	Hypothesis/assumption of standard deviation	Accuracy if No. of meals known	Relative Accuracy	Tonnes of FW
COMMERCIAL CATERING									
5610A. Traditional catering									
No employees (or unknown)	63 950	4 600	100	200	110	75	15	13%	22 001
1-5 employees	49 413	8 981	200	390	110	75	10	9%	42 952
6-49 employees	18 705	16 318	300	709	110	75	8	8%	78 045
4.50 to 99 employees	210	916	105	40	110	75	10	9%	4 381
5,100 employees and over	59	643	59	28	110	75	0	0%	3 077
Total	132 337	31 459	764	1 368	110		6	5%	150 456
5610B. Cafeterias and other self-service facilities									
No employees	339	44	50	5	130	80	20	16%	600
1-5 employees	109	43	50	5	130	80	16	13%	594
6-49 employees	422	1 344	100	141	130	80	14	11%	18 394
4.50 to 99 employees	34	406	34	43	130	80	0	0%	5 558
5,100 employees and over	5	127	5	13	130	80	0	0%	1 744
Total	909	1 965	239	207	130		9	7%	26 889
5610C. Fast-food type food service									
No employees	83 440	5 319	200	380	90	60	8	9%	34 193
1-5 employees	27 615	4 642	150	332	90	60	10	11%	29 841
6-49 employees	5 571	7 492	250	535	90	60	7	8%	48 161
4.50 to 99 employees	241	1 215	120	87	90	60	8	8%	7 813
5,100 employees and over	12	129	12	9	90	60	0	0%	830
Total	116 879	18 797	732	1 343	90		4	5%	120 838
TOTAL	250 125	52 221	1 735	2 917	102		3.43	3%	298 183

²⁰ Source : http://www.themavision.fr/jcms/rw_494700/restauration-commerciale-chiffres-cles-et-tendances-2017



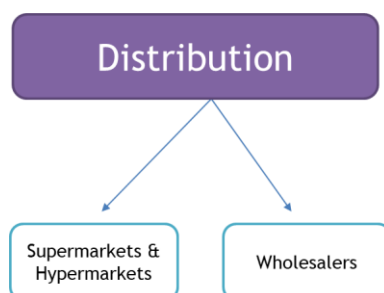
10.2 DISTRIBUTION sub-group

10.2.1 Participants

This working group brought together up to 18 structures. The representatives were Ms Emilie Tafournel, from the FCD and Mr Stéphan Arino, from the E. Leclerc group.

Participants
CISCO (BRAKE)
CGI
CONFITURES REBELLES
E. LECLERC (joint representative)
EC6
EQOSPHERE
COMERSO
FCD (joint representative)
FFBA
HALTE DU CŒUR
I-CARE ENVIRONNEMENT
JETTE PAS PARTAGE
INTERMARCHE
LES RESTOS DU CŒUR
PHENIX
RÉGION ILE-DE-FRANCE
RESEDA
VIASOURCING

10.2.2 Data to be collected for an observation system



For this group, two segmentations were established: one for supermarkets and hypermarkets, the other for wholesalers and wholesale markets. These two activities represent the 'distribution' stage but have different practices.

As no Logistics representatives participated in this group, this activity was not discussed in the exchanges. This absence is mentioned in section 10.6.

It should be noted that this sector is very close to food aid stakeholders. They were present at all of the group's meetings. Similarly, the so-called 'donation intermediaries', who are familiar with the flows and data available, were heavily involved in this working group.

A chart detailing the flows generating waste at supermarket and hypermarket and wholesaler level has been validated.

Chart: 1. Food distribution overview

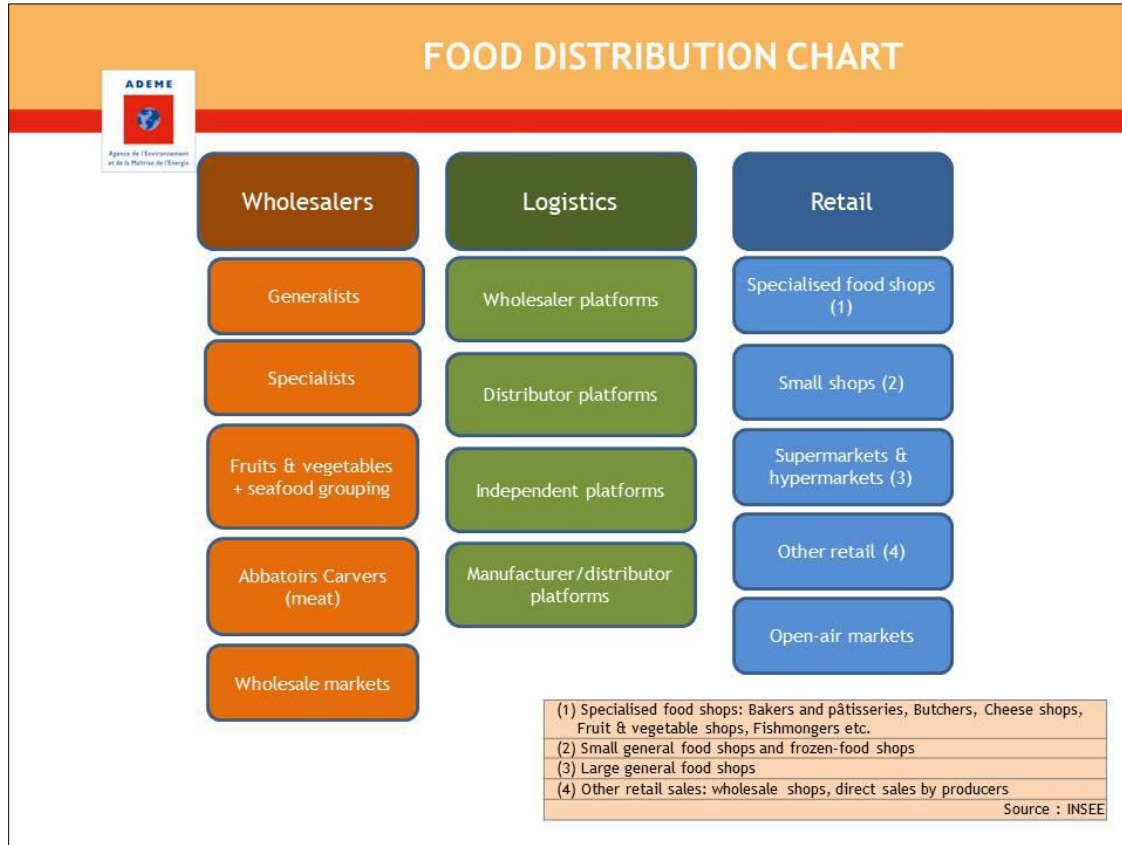


Chart: 2. Waste generator flows for supermarkets and hypermarkets

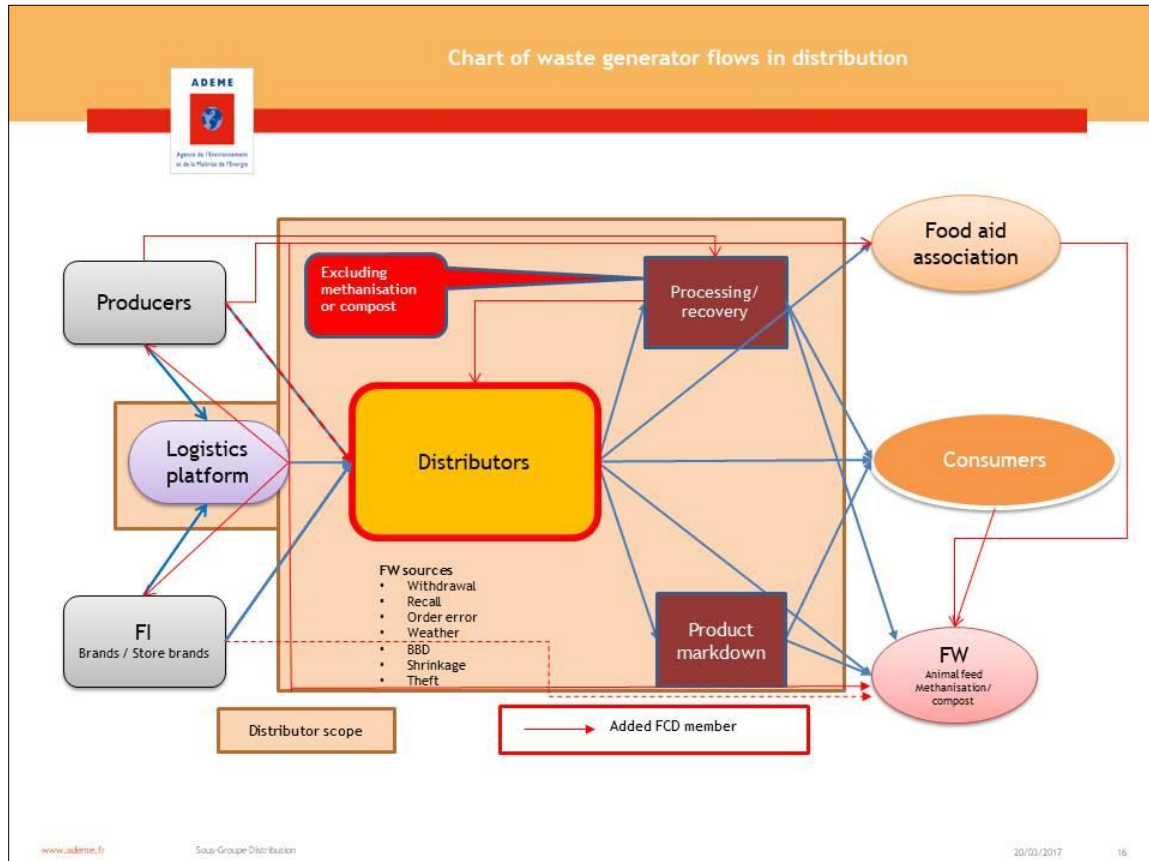
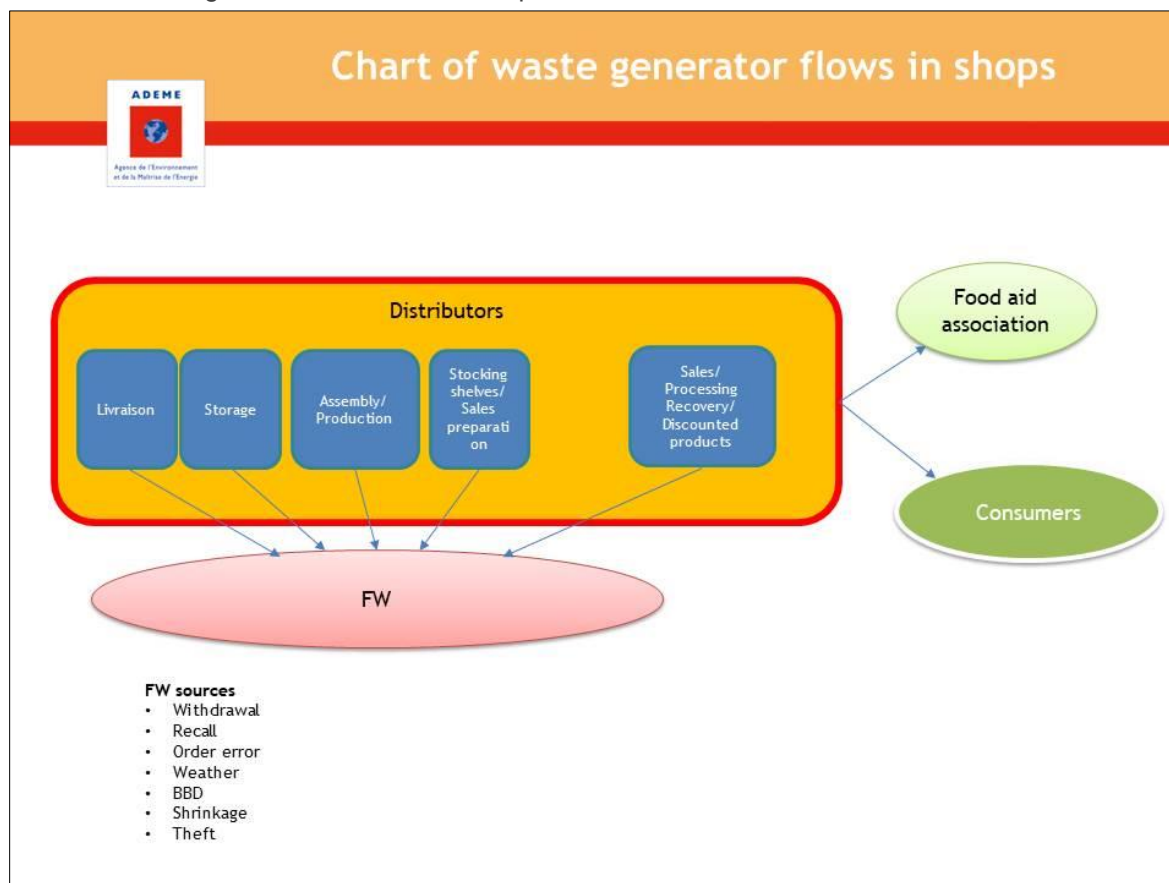


Chart: 3. Waste generator flows at one shop level



The issue of taking into account ‘withdrawals and recalls’ came up very quickly in the discussions. As this point cannot be dealt with in isolation due to the direct link with the processing stakeholders, it was decided to bring the two stakeholders (supermarkets and hypermarkets and food industries) together in a specific working group (see point 10.4).

The arrival of the European directive while work was ongoing also had a positive impact on the stakeholders’ involvement. Distributors are afraid that reporting will be imposed on them and prefer to adopt a voluntary approach.

Data to be collected in supermarkets and hypermarkets:

From the outset, the participants in this working group sought to be operational straight away and were very constructive. As soon as an obstacle was identified, participants sought to lift it.

Heavily involved in this issue since the Garot²¹ Law of 2016, many shops have already set up monitoring tools. However, the issue of data remains a sensitive one as it involves very competitive data that should not usually be disclosed. The group also benefited from the feedback from the ‘Control/test²² Distributors’ operation carried out by the ADEME between 2015 and 2016, which made it possible to work with 10 supermarkets and to identify available data.

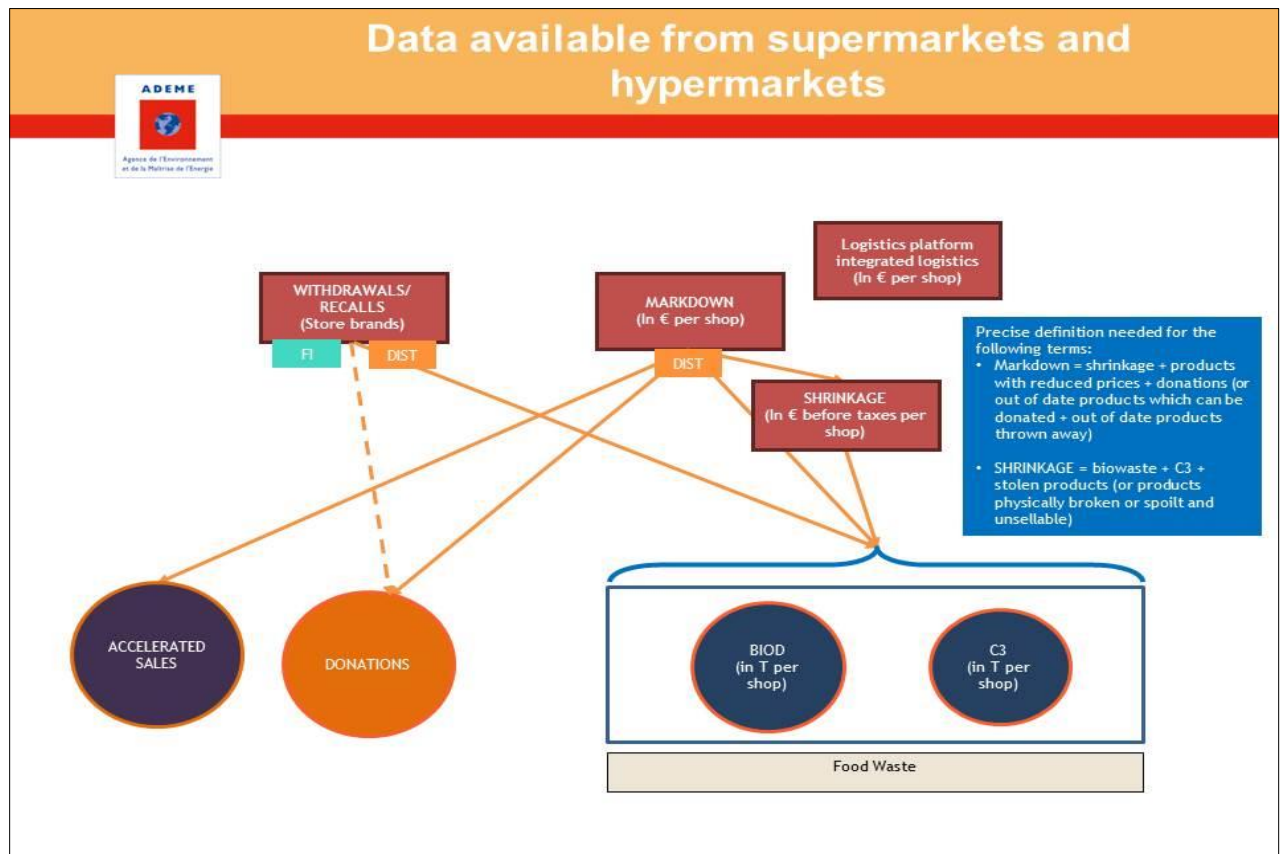
After analysis of the above FW flows, the group determined that:

- The most relevant data to evaluate the evolution of FW, both in Wholesalers and in Supermarkets and Hypermarkets, are the unsold volumes (markdown known) and the different forms of waste (see diagram below)

²¹ Law No. 2016-138 of 11 February 2016 against food waste

²² Results of the [‘control distributors’ operation](#)

- The data corresponds to a percentage of the turnover or shrinkage expressed in euros.
- This data is available and can be - for the purpose of developing a national data set - collected from retailers, under certain conditions, in particular, ensuring confidentiality.
- There are very clear differences between supermarket and wholesale distribution, both in the definitions of the terms used and the FW flow charts and the very nature of the data that can be collected.

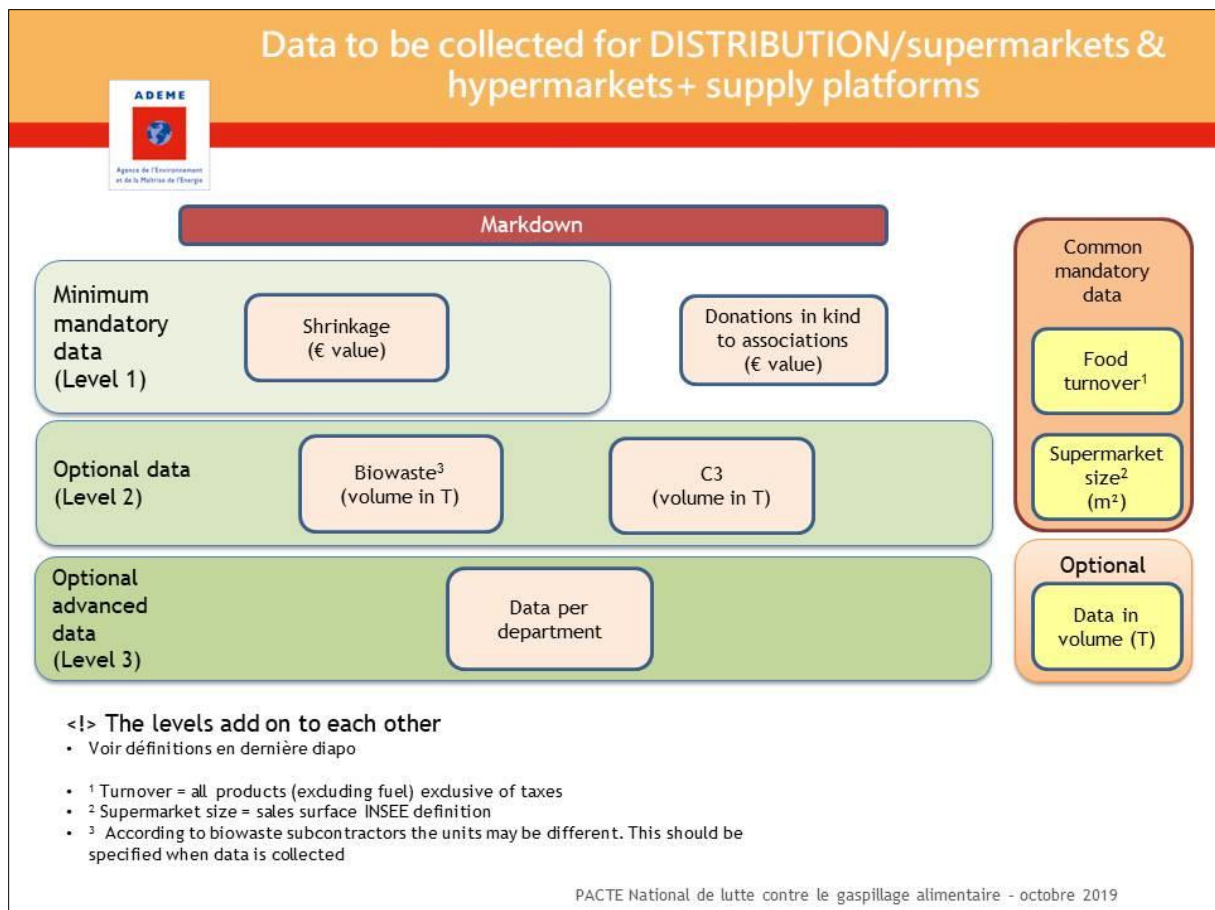


In the case of supermarkets and hypermarkets, the common information to be collected to add to the data is:

- The turnover excluding taxes the food section of the shop
- The surface area (in m²) of the establishment.

WG proposals for data collection:





As with the other groups, donation data is clearly identified and processed separately. This data is available to all stakeholders and is also easily available through the annual monitoring carried out by the DGCS via the Système d'Information de l'Aide Alimentaire (SIAA) [Food Aid Information System]. This data, unlike that provided by distributors, is volume data.

On the other hand, contrary to the 'Processing' and 'Production' groups, the other forms of evaluation were not used by the participants because they were outside the definition of food waste.

The group was the first to carry out a test among its members (published by the FCD in March 2018), which helped to refine the next steps of the work. The feedback has shown that:

- Definitions must be clearly specified so as to collect consistent data
- Shrinkage was not useful data
- The main data to be collected is the volume of biowaste (in its exact meaning)
- Shops are able to answer the main questions asked

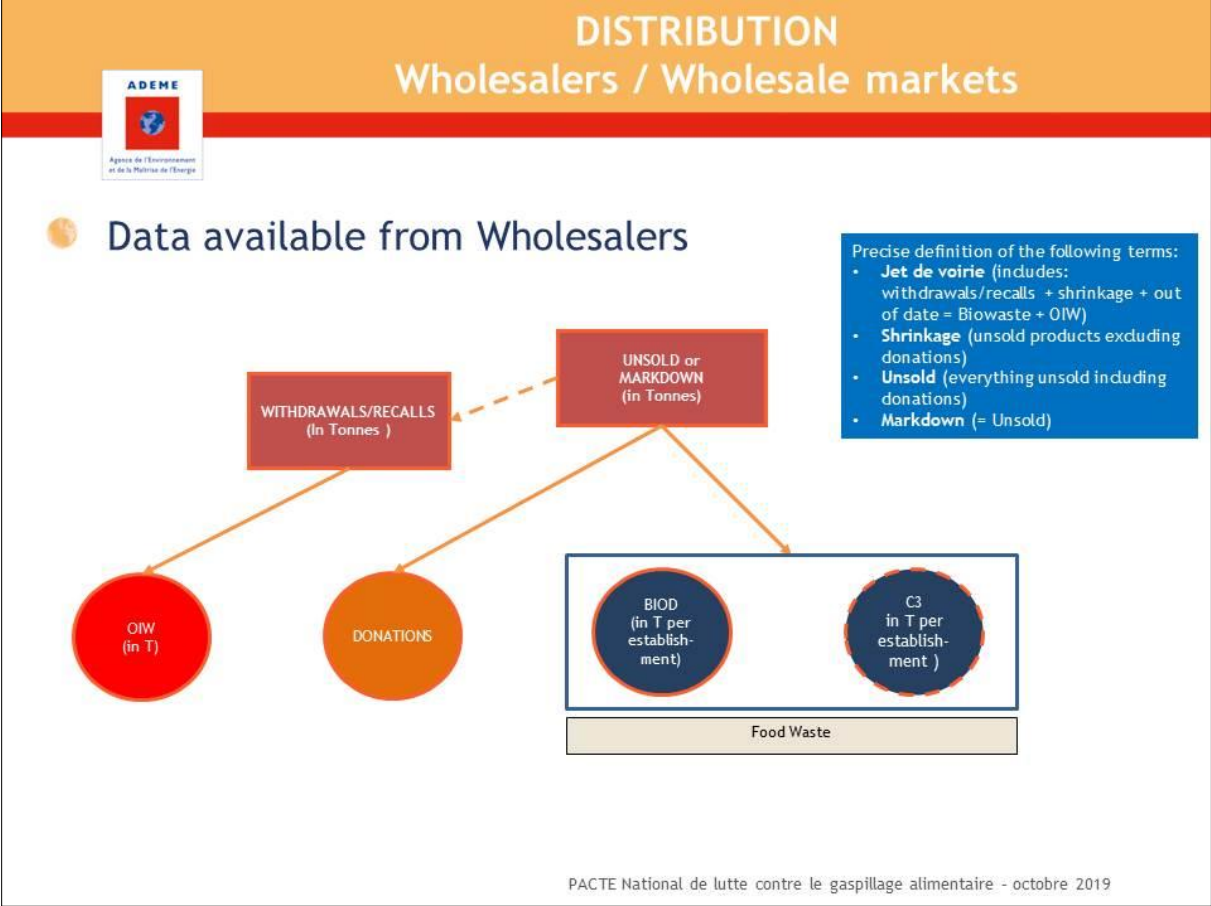
The data collected corresponds to what is called 'markdown'. At level 1 this is translated (the minimum data to be collected) by the shrinkage rate which is always monitored by shops. This data is already present in the shops' accounts, which means it is reliable. However, care will have to be taken to distinguish clearly between food and non-food portions.

In level 2 additional data will be the measurement of volumes of biowaste and C3 so as to assess only food waste. This data exists because as soon as there is a contract for the removal of biowaste (packaged or not) and C3, there is a monitoring register. Difficulty may arise in cases where it is not specified whether the biowaste is removed while still packaged, which may skew the measurement (in this case a ratio will have to be applied). And ideally (level 3), data monitoring by department is proposed, as this is the most suitable to use to set up an action plan.

The unit of measurement for collection is either the euro or the tonne. In any case, a euro=> tonne conversion needs to be defined.

Data to be collected for wholesalers:

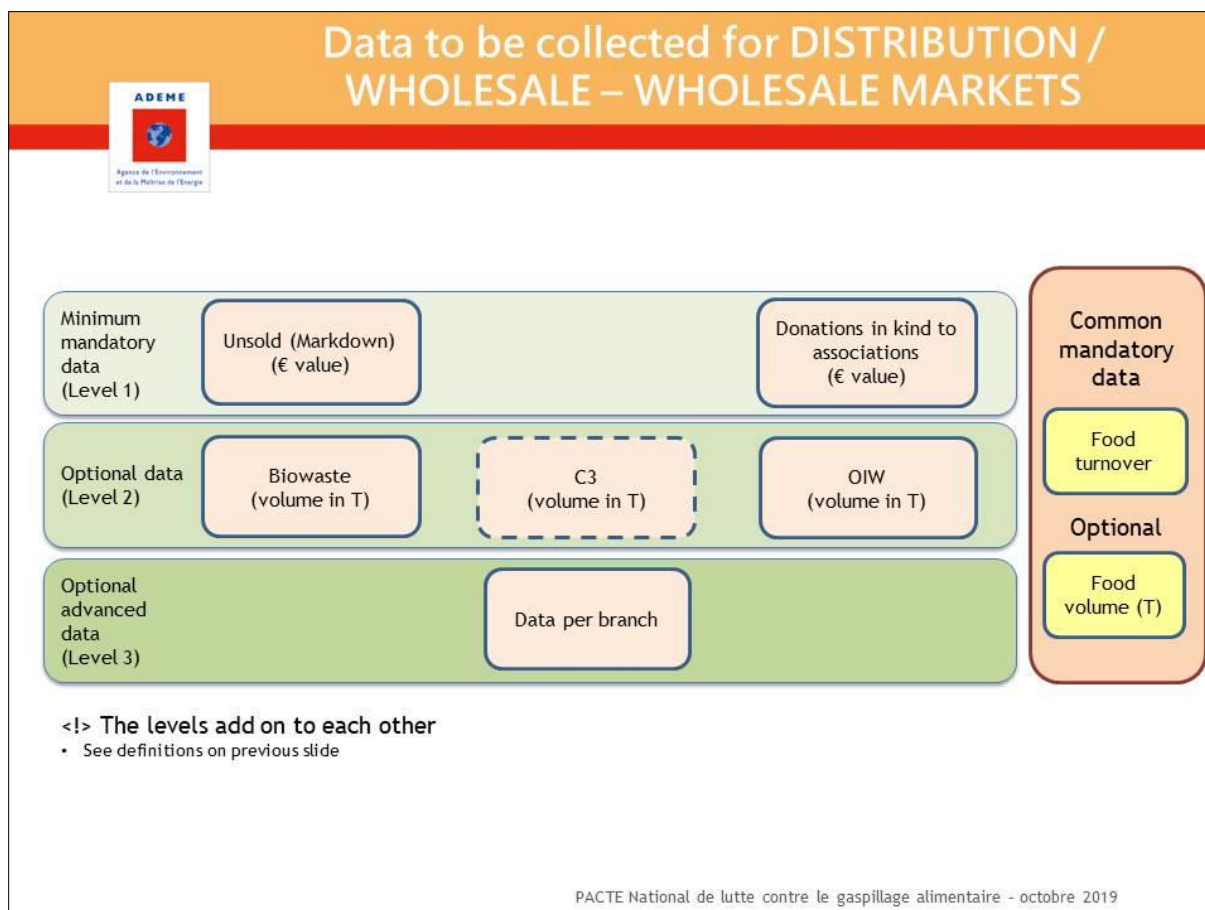
Although the way they work is very similar, the definition of the terms used differs slightly.



As regards the data to be collected, wholesalers carried out the first data collection on donations during the ‘The French National Food Conference’ on a limited number of companies but which represent 80% of wholesalers in terms of market share. In their case, donations are expressed in overall volume, in tonnes. It should be noted that wholesalers benefit, in the same way as distributors, from tax exemption on donations.

On this occasion, a first one-off declaration of the shrinkage rate was also made to test their ability to report this information. A distinction between groceries and fresh produce was possible. There is no reluctance from the profession to provide data, but to date this has not yet been organised. In the same way as for the supermarkets and hypermarkets, anonymity is strongly recommended.

As for supermarkets and hypermarkets, the unit of measurement is either euros or tonnes. A euro=>tonne conversion still needs to be defined.



Points to note:

Supermarkets and Wholesalers use different definitions for similar terms or different terms for the same types of data. Some detailed work was therefore carried out (presented in the minutes of the last meeting of 3 October 2019 in Annex 2).

One of the main characteristics of this sector is that the available data is in euros (which distinguishes this group from others where data is always provided in volume). A euro=>tonne conversion still needs to be defined.

As a reminder, logistics was not discussed during this session but was identified as a source of FW and will need to be considered separately.

Finally, as mentioned above, the notion of confidentiality is essential in this sector. As information on unsold and waste quantities is considered by shops and wholesalers to be competitive data, the sources of this data will need to be anonymised for national reporting. The data reporting should therefore be carried out as far as possible by the Unions, the head offices or the central offices of the groupings. To reassure stakeholders it will be important to remember that the data will be aggregated. The federations also insist on the importance of convincing stakeholders that the data transmission will be used by the chains to show that they are active in the work against food waste. It is therefore an exercise that can be valued and that must be supported.

10.2.3 What are the collection methods for the observation?

All stakeholders agree that priority should be given to making the system as simple as possible by working with the already available data. Data collection will need to be organised by each chain. The more this reporting is automated, the less need there will be to use time-consuming and error-prone manual processing. However, this automated reporting has not yet been put in place (except in some individual cases) and there will need to be a transitional phase.

A refined questionnaire was tested with all E. LECLERC group stores in February 2019 with a very good return rate (91%). This full-scale test confirmed the relevance of the questions and that the terms used were well-understood. This feedback also made it possible to modify the data to be collected by simplifying the desired data as much as possible (removal of shrinkage in level 1 and OIW in level 2). Similarly, for biowaste, the unit of measurement may vary from one shop to another (volume in tonnes or number of skips or litres). At the time of the writing of this report, the same test was programmed to be carried out by other chains to test the profession's responsiveness.

The participants also highlighted that while a detailed reporting system can be organised at group level to facilitate the implementation of internal performance indicators, only the data identified in the context of the PACT work will need to be used and fed back nationally.

10.2.4 Which sample to use for a national observation?

To measure the 'effort' required to create a statistically reliable sample, the company IN NUMERI, commissioned by the ADEME, provided the following information:

The sampling frame for this sector is the SIRENE database. The unit is the establishment.

The strata are activity and size strata, in terms of number of employees. The size strata vary depending on the activity.

The proposed indicator is the ratio 'tonne of FW in turnover', except for logistics platforms where it should be possible to estimate the quantities of FW per establishment.

Sampling plan:

RETAIL SALES	Number of establishments 2018	ETP 2017 (1)	Sample	Turnover (€M)	Average FW in tonnes per €M	Standard deviation	Accuracy of the average	Relative accuracy of the average	Tonnes of FW
Food specialities (4721Z, 4722Z, 4723Z, 4724Z, 4725Z, 4729, 1013B, 1071B, 1071C, 1071D)									
< 3 employees	80 770								
3-9 employees	27 234	108 936	295	17 330	2	1.8	0.204	10%	34659
10-19 employees	4 033	56 462	153	8 982	1.5	1.2	0.187	12%	13473
20-99 employees	796	27 860	76	4 432	1.5	1.2	0.257	17%	6648
100-249 employees	12	2 160	12	344	1.1	0.7	0.000	0.0%	378
250 employees and over	2	1 200	2	191	1.1	0.7	0	0	210
TOTAL	112 847	196 618	538	31 278	1.8		0.130	7%	55368
Small shops (4711A, 4711B, 4711C)									
< 3 employees	36 159								
3-9 employees	5 756	23024	187	6,305	2	1.8	0.254	13%	12609
10-19 employees	651	9114	74	2 496	1.5	1.2	0.257	17%	3744
20-99 employees	247	8645	70	2 367	1.5	1.2	0.238	16%	3551
100-249 employees	11	1980	11	542	1.1	0.7	0.000	0.0%	596
250 employees and over	1	300	1	82	1.1	0.7	0	0	90
TOTAL	42 825	43063	343	11 792	1.7		0.154	9%	20591
Supermarkets and hypermarkets (4711D, 4711E, 4711F, 4729Z)									
< 3 employees	3 630								
3-9 employees	2 992				2	1.8			0
10-19 employees	2 619	36666	75	12 917	1.5	1.2	0.268	18%	19376
20-99 employees	4 417	154595	314	54 463	1.5	1.2	0.128	9%	81694
100-249 employees	913	164340	334	57 896	1.1	0.8	0.068	6.2%	63685
250-499 employees	386	115800	314	40 795	1.1	0.8	0.038	3.5%	44875
500 + employees	61	54900	61	19 341	1.1	0.8	0.000	0%	21275
TOTAL	11 388	526301	1098	185,412	1.25		0.048	4%	230905
TOTAL RETAIL SALES		765 982	1 979	228 482	1.3		0.043	3%	306864



The sampling plan for wholesalers is the following:

WHOLESALEERS	Number of establishments 2018	ETP 2017 (1)	Sample	Turnover (€M)	FW in t/€M	Standard deviation FW/turnover	Accuracy of the average	Relative accuracy of the average	Tonnes of FW
Cereals (4621Z)									
< 3 employees	6243	9 365		12 669					
3-9 employees	1565	6 260	58	8 469	0.4	0.32	0.081	20%	3388
10-19 employees	385	5 390	50	7 292	0.4	0.32	0.083	21%	2917
20-49 employees	199	5 970	55	8 076	0.4	0.32	0.072	18%	3231
50-99 employees	54	2 916	27	3 945	0.4	0.32	0.085	21.3%	1578
100 + employees	37	5 550	37	7 508	0.4	0.32	0.000	0.0%	3003
TOTAL	8 483	35 451	227	47 959	0.40		0.032	8%	14116
Fruit, vegetables and seafood (4631Z and 4638A)									
< 3 employees	4 375	6 563		4 116					
3-9 employees	1 336	5 344	50	3 352	0.5	0.4	0.109	22%	1676
10-19 employees	478	6 692	62	4 197	0.5	0.4	0.093	19%	2099
20-49 employees	356	10 680	99	6 699	0.5	0.4	0.067	13%	3349
50-99 employees	89	4,806	45	3 014	0.5	0.4	0.082	16.4%	1507
100 + employees	35	5 250	35	3 293	0.5	0.4	0.000	0	1646
TOTAL	6 669	39 335	291	24672	0.50		0.036	7%	10278
Other specialised wholesalers (46.32A,46.32B,46.32C,46.33Z,46.34Z,46.35Z,46.36Z,46.37Z,46.38B,46.39A)									
< 3 employees	16 288	24 432		16 683					
3-9 employees	2 857	11 428	106	7 804	0.5	0.5	0.093	19%	3902
10-19 employees	852	11 928	111	8 145	0.5	0.5	0.087	17%	4073
20-49 employees	787	23 610	219	16 122	0.5	0.5	0.056	11%	8061
50-99 employees	234	12 636	234	8,629	0.5	0.5	0.000	0.0%	4314
100 + employees	136	20 400	136	13 930	0.5	0.5	0.000	0.0%	6965
TOTAL	21 154	104 434	806	71313	0.50		0.021	4%	27315
Non-specialised food wholesalers (4639B)									
< 3 employees	4 802	7 203		8 546					
3-9 employees	495	1 980	18	2 349	0.5	0.4	0.181	36%	1175
10-19 employees	141	1 974	18	2 342	0.5	0.4	0.173	35%	1171
20-49 employees	121	3 630	34	4 307	0.5	0.4	0.114	23%	2153
50-99 employees	69	3 726	35	4 421	0.5	0.4	0.093	18.6%	2210
100 + employees	76	11 400	76	13 525	0.5	0.4	0.000	0	6763
TOTAL	5 704	29 913	181	35 490	0.50		0.032	6%	13472
WHOLESALEERS TOTAL	42 010	209 132	1 505	179 434	0.4		0.014	4%	65181



10.3 PROCESSING sub-group

10.3.1 Participants

This working group brought together up to 13 structures. The representative was Ms Marie Castagné, from the Fédération Française des Banques Alimentaires (French Federation of Food Banks).

Participants
ANIA
COOP DE FRANCE
COMERSO
EQOSPHERE
FFBA (representative)
GECO FOOD SERVICES
I CARE & CONSULT
LES RESTOS DU CŒUR
LES HALTES DU CŒUR
PHENIX
REGION ILE-DE-FRANCE
RESEDA
VIASOURCING

10.3.2 Data to be collected for an observation system

From the very first meetings, the sector was receptive and diligent in accurately completing the data collection exercise. It seems that the very question of the definition of food waste is still poorly understood by professionals and more work on raising awareness needs to be carried out. It was also noted in this group that the notion of 'losses' should be used rather than 'waste'. When the results of the ADEME's global study were published in 2016²³, professionals wanted to understand how the figures had been calculated. While each industry generally has internal tools to monitor its performance, knowledge of losses remains partial and data is rarely consolidated. In addition, the high heterogeneity of the sector makes it difficult to identify common denominators for all types of processes. It should be noted that some major groups publish their work against food waste in their DPEF²⁴ report. While it can be assumed that these groups have more organised data, to date this concerns only a few structures. Conversely, many small businesses do not have the resources to manage and monitor their losses or waste.

Moreover, the data concerned is generally confidential, which may explain a certain reluctance to take the first steps.

However, the group was able to benefit from the results of the study 'IAA témoins : moins de gaspillage pour plus de performance' [FI controls: less waste for more performance]²⁵ conducted by the ADEME in 2018 and whose stages and then results were presented in the various meetings. The encouraging results, particularly in economic terms, and the sector's receptiveness to this work have meant that a mid-term renewal was possible, leading to proposals at the same level as the other groups.

The arrival halfway through of mandatory reporting at European level also renewed attention to a subject that could have been perceived as a low priority compared to many other regulations.

²³ [Food losses and waste - inventory and management at each stage in the food chain](#)

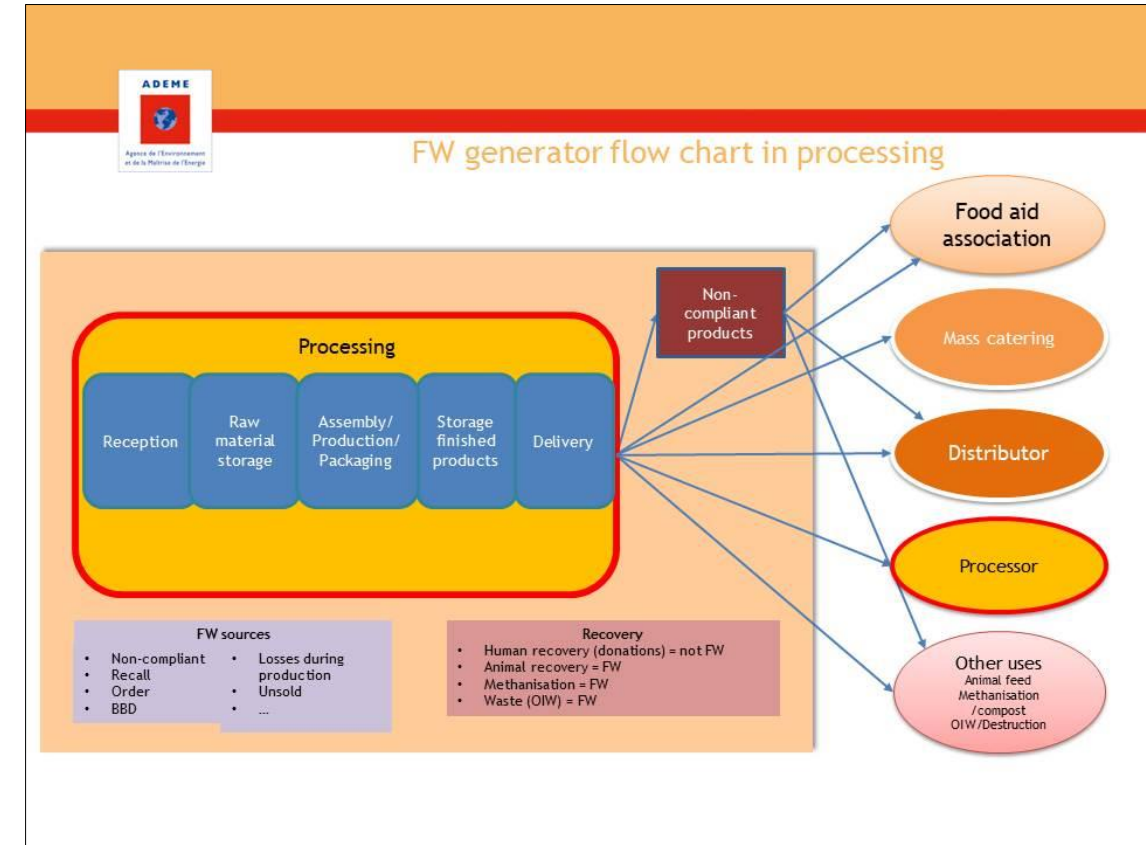
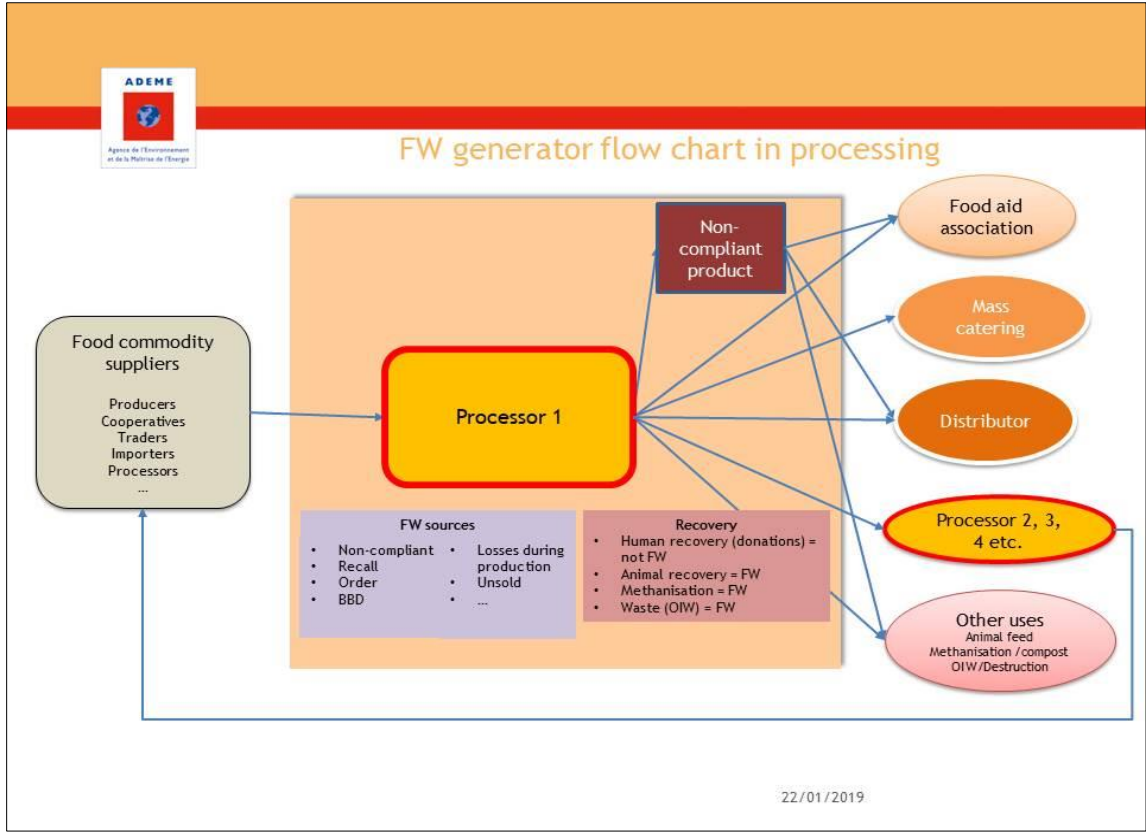
²⁴ Extra Financial Performance Statement

²⁵ [Results of the study](#) 'IAA témoins : moins de gaspillage pour plus de performance.'



After having established and approved a general waste generator flow chart for processing, the subgroup approved the data generally available in most FIs and which could be collected.

Mapping: overview and zoom in on waste generating flows



Data to be collected:

As for the other groups, common information needs to be collected to distinguish between the different types of establishments:

- Food turnover (in euros);
- Volumes of foodstuffs produced (in tonnes per year);
- Number of employees.

Important work has been carried out in this group on the notion of loss, which is defined for companies as: *'anything that is produced directly and indirectly for human consumption and which is not ultimately marketed as such.'*

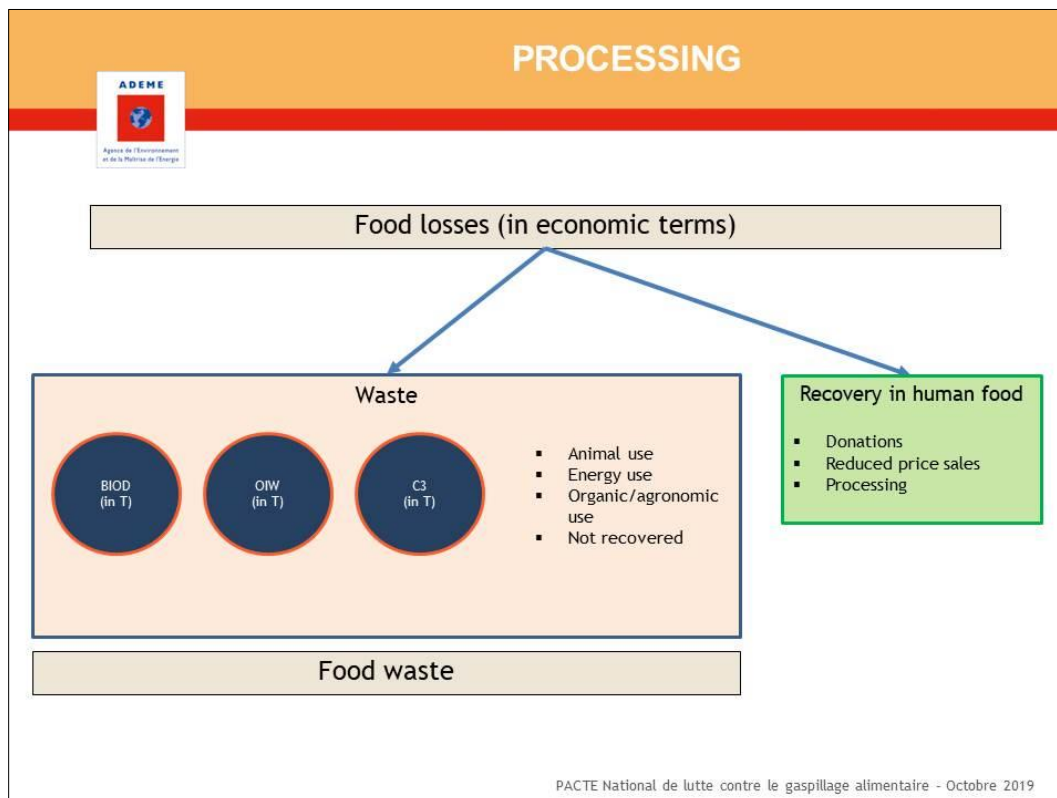
For data collection, this translates into the identification of the following sources:

- Biowaste
- C3s
- And failing this, OIW (Ordinary Industrial Waste).

The choice to offer OIW allows companies that do not have the possibility to distinguish their biowaste to provide a value. In this case, an estimate of the share of food waste in OIW is essential and will need to be made. In all cases where separation is carried out, OIW does not have to be accounted for to avoid confusion.

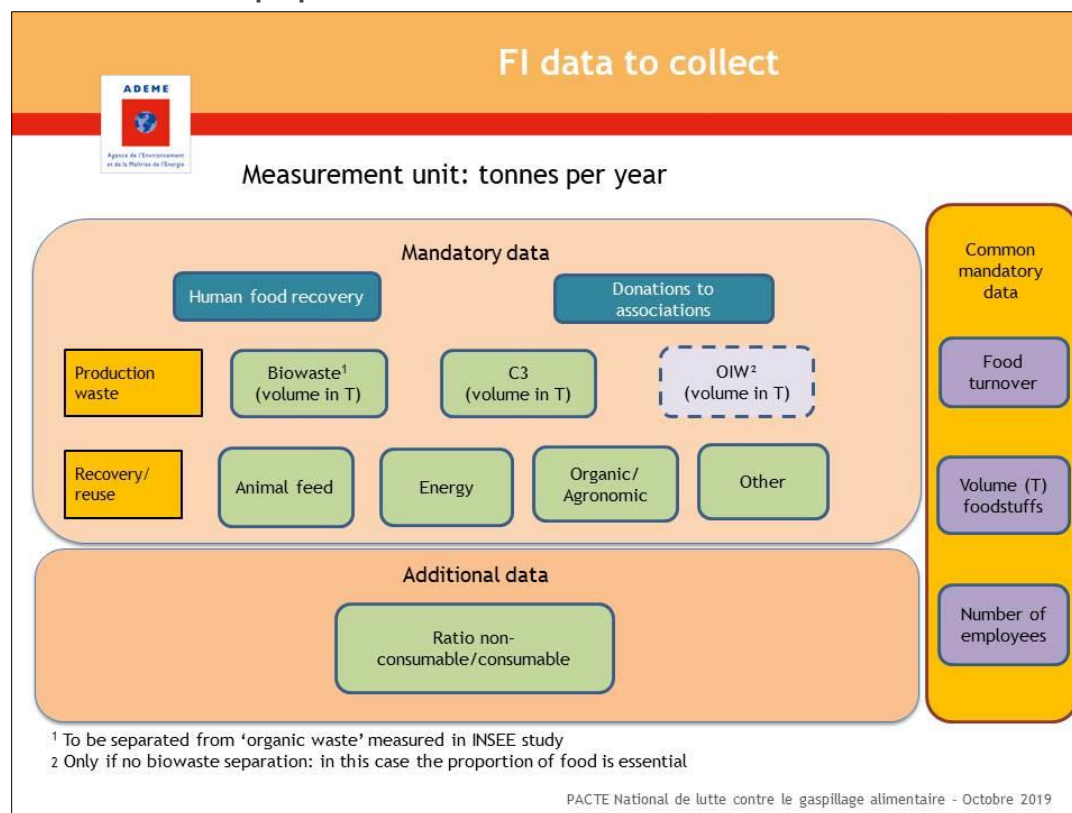
Human recovery or valuation here includes donation to authorised associations but also any form of processing into by-products or co-products so that these products can be redistributed for human food uses. This revaluing is not considered to be food waste and is therefore accounted for separately. However, it is important to identify and monitor this over time. It should be noted that since 2016, the DGCS collects annual data on the volume of donations received by the associations, broken down by source: supermarkets and hypermarkets and businesses.

The various other forms of revaluing are accounted for separately as far as possible. In particular, this makes it possible to separate animal recovery to adapt to the different reporting systems.



Added to the minimum data proposed in level 1 is optional (level 2) data to distinguish between consumable and non-consumable parts of the calculated losses.

WG data collection proposals:



Points to note:

From the beginning of the work, the stakeholders had a poor understanding of the interest in this measurement and the *ultimate* use of the data. It is a sector where much reporting is already required and it can be difficult to motivate those in it to collect new data.

It will be essential to raise awareness and connect the different sectors and stakeholders in the food chain. A food considered to be waste by one sector or stakeholder is not necessarily considered to be waste by another. The edible part of the products used in the manufacture of certain products can be difficult to estimate and may result in significant variations in loss²⁶ volumes.

Significant work has been made on the definition of each term used in the documents (see the minutes of the last meeting of 30 September 2019 in Annex 2). These must be perfectly clear to the different stakeholders who will provide the data to ensure the best possible homogeneity and consistency of the data. It is recommended that these definitions are repeated in all the documents/forms used to collect this data and possibly to complete them with concrete examples using the everyday language of the profession or sector of activity. An approach based on the individual sectors represented by different professional unions should be favoured.

The following points were raised with regard to the measured data:

- Logistics must be separated (count losses but do not allocate them to FIs)

²⁶ Although there are different tables (e.g. FAO)²⁶ giving edible part rates per product, changes in production processes due to changing requirements and consumer acceptance of certain product qualities may lead to significant changes in these rates.

- Reasoning in terms of value was excluded because it varies too much from one activity to another and the price of losses is generally included in the cost price. The economic indicator must be taken away as it fluctuates too much. The participants agree on a unit of measurement in Tonnes per year
- The concept of co-products, which is currently not subject to any regulatory definition, has been removed from the glossary. Co-products that return or are sold for human consumption should not be considered to be waste and are not included in the FW assessment and therefore do not need to be accounted for.
- Effluent (liquid waste) will not be taken into account in the assessment, in accordance with the European Directive.

Finally, the arrival of the European directive during discussions brought confusion due to significantly different perimeters/scope (mainly due to the exclusion of animal recovery/valuation in the definition of food losses and the inclusion of non-consumable parts (skin, bones, etc.). A strong concern was expressed about the risk of different data being circulated. On the one hand, data collected within the framework of the PACT and on the other hand, data collected within the framework of the European Directive. It will therefore be necessary to study the communication methods and the group expressed the wish that only the data reported to the European Commission should be broadcast/disseminated externally.

Of course, the confidentiality of the data will need to be guaranteed.

10.3.3 What are the collection methods for the observation?

The processing sector is a very fragmented sector, which can make trying to involve stakeholders complicated and time-consuming.

All participants in this group confirmed the interest of having a full-scale test to validate the choices of data to be collected. To this end, ANIA and Coop de France co-authored a questionnaire that was tested with their members in November 2019.

The objective of this questionnaire was to verify:

- The relevance of the questions asked,
- The involvement of stakeholders
- Collection methods

The analysis of these initial results will confirm whether it is useful to have a specific questionnaire or, whether it is better to start again using the mandatory survey with the INSEE (PRODCOM).

10.3.4 Which sample to use for a national observation?

As with other groups, it is essential that a representative sample of businesses to be surveyed is defined to obtain a reliable result. The company IN NUMERI, commissioned by the ADEME, provided the following information:

The sampling frame for this sector is the SIRENE database. The unit is the establishment. Only establishments with more than 10 employees are taken into account. Bakers (10.71C and 10.71D) and butchers (10.13B) are excluded, who are in the distribution group.

The strata are the crossovers of sub-sectors of activity and size class, as classified in SIRENE. The units surveyed are the establishments.

The proposed indicator is the ratio 'tonne of FW per tonne produced'. It is assumed that production quantities are known and a ratio based on this tonnage is estimated. The quantities produced by FIs are available by sector of activity on the Eurostat website.

The weight of each stratum is the tonnage produced (source EUROSTAT). The tonnages of activity are broken down by size according to an estimate of the number of establishments, obtained by multiplying the number of establishments by the average size of the establishments (source: ACOSS).

Sampling plan:

	Number of of establishments 2018	Sample	Million tonnes produced (2)	Average FW per tonne produced	Standard deviation	Accuracy of the average	Relative accuracy of the average	FW amount
10.1 Processing and preservation of meat and preparation of meat products (excluding 10.13B)								
Less than 10 employees	2 553	0	0.72					
10 to 99	905	150	1.88	0.097	0.068	0.010	10%	0.182
100 to 249	146	73	2.19	0.097	0.068	0.011	11%	0.213
250 and over	80	80	3.45	0.097	0.068	0.000	0%	0.335
Total	3 684	303	8.24	0.097		0.004	4.2%	0.729
10.2 Processing and preservation of fish, crustaceans and molluscs								
Less than 10 employees	453		0.04	0.04				
10 to 99	133	63	0.09	0.04	0.035	0.0063	16%	0.004
100 to 249	23	12	0.11	0.04	0.035	0.0137	34%	0.004
250 and over	8	8	0.11	0.04	0.035	0.0000	0%	0.004
Total	617	83	0.35	0.040		0.00521	13.0%	0.012
10.3 Processing and preservation of fruit and vegetables								
Less than 10 employees	2 190		0.83					
10 to 99	184	67	0.51	0.07	0.068	0.01	19%	0.036
100 to 249	48	24	0.97	0.07	0.068	0.02	27%	0.068
250 and over	19	19	1.10	0.07	0.068	0.00	0%	0.077
Total	2 441	110	3.42	0.1		0.00766	10.9%	0.181
10.4 Manufacturing of vegetable and animal oils and fats								
Less than 10 employees	332		0.05					
10 to 99	39	25	0.05	0.097	0.068	0.02	16%	0.004
100 to 249	4	4	0.03	0.097	0.068	0.00	0%	0.003
250 and over	2	2	0.05	0.097	0.068	0.00	0%	0.005
Total	377	31	0.18	0.097		0.00569	5.9%	0.012
10.5 Manufacturing of dairy products								
Less than 10 employees	1 750		1.17					
10 to 99	388	150	1.91	0.05	0.04	0.01	10%	0.095
100 to 249	106	53	3.76	0.05	0.04	0.01	15%	0.188
250 and over	56	56	5.72	0.05	0.04	0.00	0%	0.286
Total	2 300	259	12.6	0.05		0.00265	5.3%	0.569
106. Grain processing - starch product manufacturing								
Less than 10 employees	495		1.42					
10 to 99	176	102	3.71	0.097	0.068	0.01	9%	0.360
100 to 249	12	6	1.83	0.097	0.068	0.04	40%	0.177
250 and over	11	11	4.82	0.097	0.068	0.00	0%	0.468
Total	694	119	11.8	0.097		0.00745	7.7%	1.005
107. Manufacturing of bakery and pastry products and pasta (except 10.71C and 10.71D)								
Less than 10 employees	6 337		1.03					
10 to 99	632	150	0.75	0.097	0.068	0.01	10%	0.073
100 to 249	94	47	0.81	0.097	0.068	0.01	14%	0.078
250 and over	36	36	0.89	0.097	0.068	0.00	0%	0.086
Total	7 099	233	3.47	0.097		0.00539	5.6%	0.237



	Number of of establishments 2018	Sample	Million tonnes produced (2)	Average FW per tonne produced	Standard deviation	Accuracy of the average	Relative accuracy of the average	FW amount
108. Manufacturing of other food products								
Less than 10 employees	5 935		2.38					
10 to 99	709	150	2.08	0.097	0.068	0.01	10%	0.202
100 to 249	155	77.5	3.29	0.097	0.068	0.01	11%	0.319
250 and over	54	54	3.30	0.097	0.068	0.00	0%	0.320
Total	6 853	281.5	11.05	0.097		0.00468	4.8%	0.841
11. Beverage manufacturing (3)								
Less than 10 employees	5 199		0.96					
10 to 99	542	150	0.74	0.097	0.068	0.01	10%	0.071
100 to 249	50	25	0.49	0.097	0.068	0.02	19%	0.048
250 and over	19	19	0.54	0.097	0.068	0.00	0%	0.052
Total	5 810	194	2.7	0.097		0.00652	6.7%	0.171
TOTAL EXCLUDING LOGISTICS and excluding <10 employees	4 631	1 614	46.69	0.081		0.0022	2.7%	3.76

10.4 Mixed distribution/processing sub-group: WITHDRAWALS - RECALLS

A group bringing together the stakeholders in the Distribution and Processing sectors met on an ad hoc basis to share the attribution rules (i.e. who is in charge of collecting the data) relating to withdrawals/recalls, the volumes of which may be found at both stages.

The definitions as a reminder:

- **Withdrawals:** products that do not meet regulations (e.g. display) but are safe for the consumer => can be donated
- **Recalls:** products that are recalled for health or safety reasons => destruction

This group agreed that withdrawals/recalls should be grouped under a 'neutral' indicator and dealt with separately (between sectors) without attribution to any particular party regardless of who declares and who is responsible, based on the following principle:

- Withdrawal and recall data for own brand products are reported by distributors
- Withdrawals and recall data for national brands are reported by the manufacturers

In addition, these discussions highlighted the issue of refusals to deliver, for which it was also agreed that they should be recorded in a separate category, in the same way as withdrawals and recalls.



10.5 PRODUCTION sub-group

10.5.1 Participants

This working group brought together up to 13 structures. The representative was Ms Dorothée Briaumont, Director of SOLAAL.

Participants
CTIFL
EQOSPHERE
FNSEA
FRANCEAGRIMER
INRA
I-CARE CONSULT
INTERFEL
LA HALTE DU CŒUR
LES RESTAURANTS DU CŒUR
PHENIX
RÉGION ILE DE FRANCE
SOLAAL (representative)
VIASOURCING

10.5.2 Data to be collected for an observation system

The group agreed from the beginning of the work that the term 'food loss' is more accurate for the profession than 'waste'.

The data available to date for this sector corresponds to one-off studies that are not continued (ADEME studies as well as INRA, France Agrimer and INTERFEL²⁷ study 'pertes agricoles dans la filière fruits et légumes' (Agricultural losses in the fruit and vegetable sector). They did, however, serve as food for thought for the group.

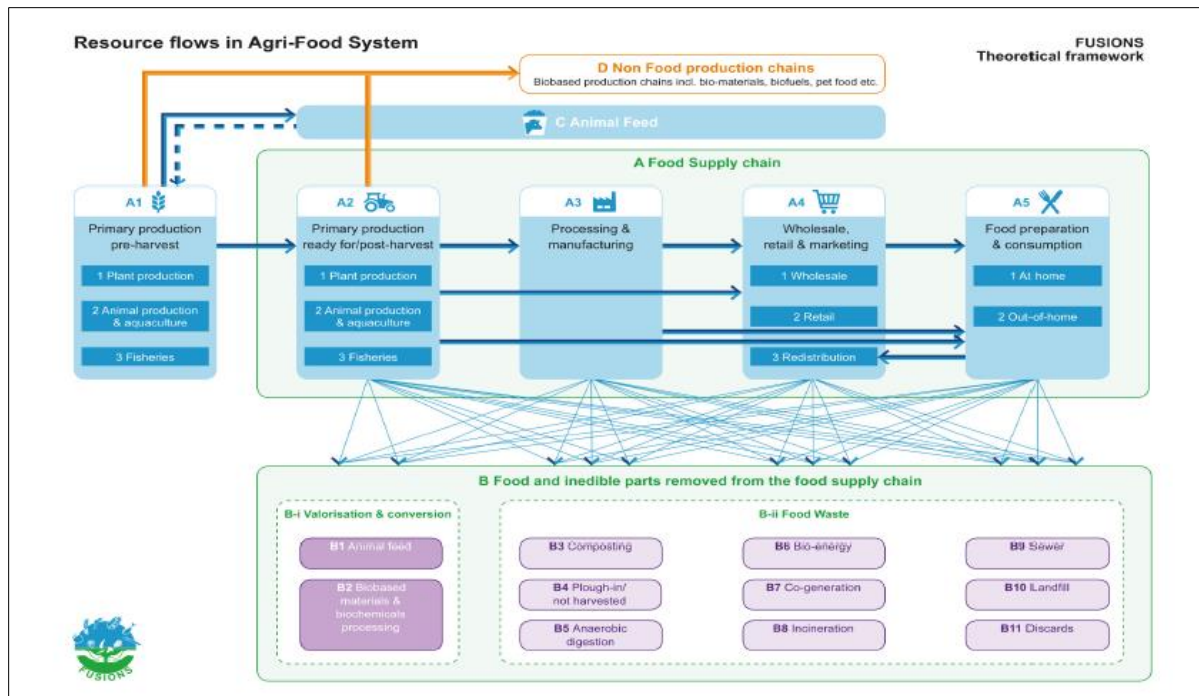
On the basis of the global food production flow from the European FUSION²⁸ project in 2014, the sub-group first determined:

- flow charts, potential sources of losses at the different stages of production,
- a priority scope for data collection (see below).

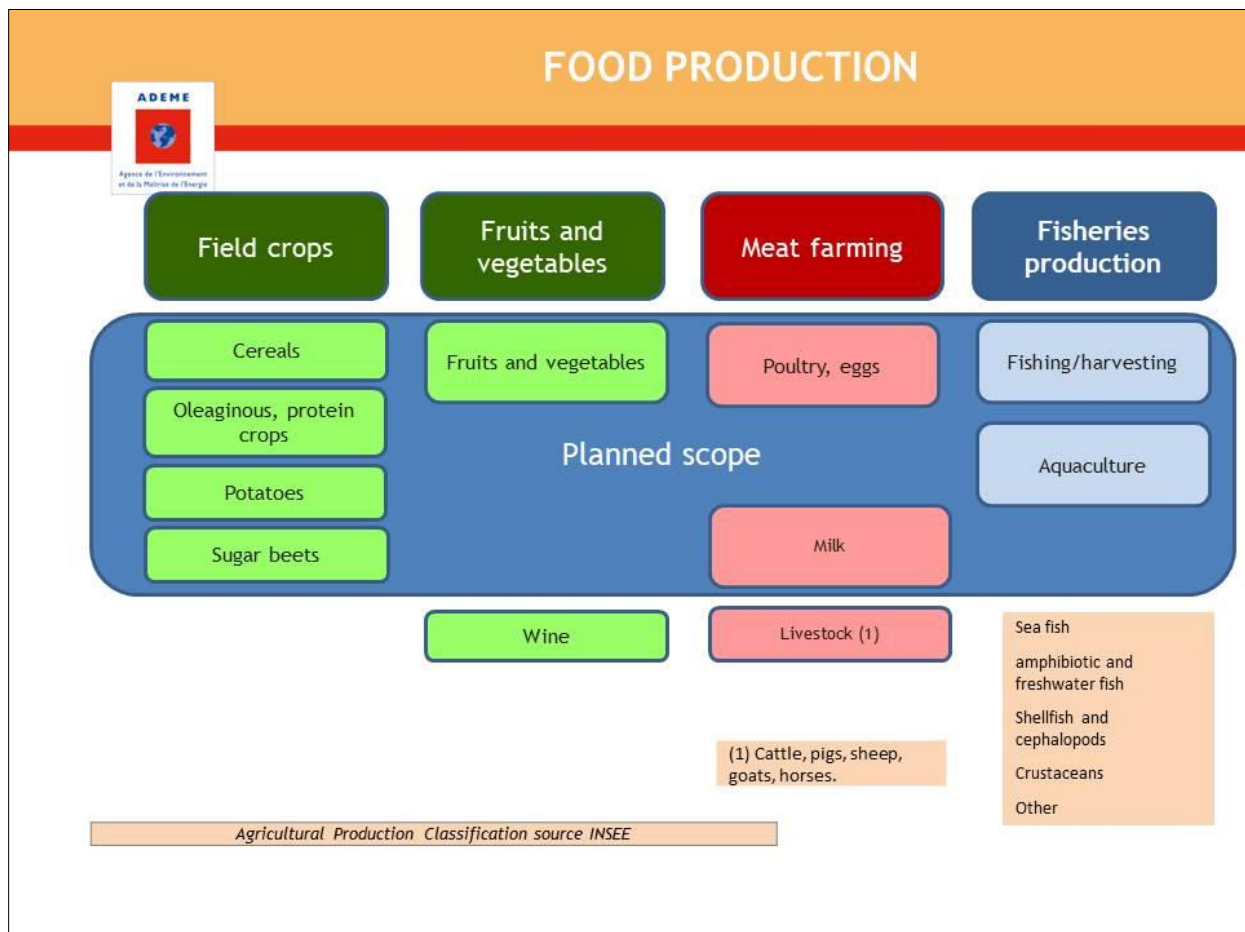
²⁷ [Study](#) 'pertes agricoles dans la filière fruits et légumes'

²⁸ FUSION : <http://www.eu-fusions.org/>





As proposed in the ADEME 2016 study, only mature/ripe products are taken into account in food losses.



Fisheries and aquaculture data has been identified as important, but there are difficulties in identifying the sources and modalities for collecting this information. For sea fishing, the Direction des pêches

maritimes et de l'aquaculture (DPAM) [Directorate of Maritime Fisheries and Aquaculture] observes catches of fish landed or discarded. This is the subject of an annual public report with an estimate of the tonnages of fish discarded at sea. Initial data could be available by the end of 2019, but there are a number of methodological issues that have significant impacts on the final estimates.

The different sources of data identified are as follows:

- Regional Farmers' Surveys (DRAAF)
- Data on donations collected with donor identification (SOLAAL)
- National data from fruit and vegetable warehouses (CTIFL)
- Data on community withdrawals (FranceAgriMer) with information about the different destinations:
 - Free distribution
 - Animal feed
 - Landfill
 - Destruction.

This is a regular data collection but represents only a small proportion of unsold goods.

- Milk donation data (Restos du Coeur and Food Banks)
- Applications for tax exemption (Ministry of Economy and Finance)
- Recovery in animal feed (RESEDA)
- Orchard surveys (FranceAgriMer), carried out every 5 years, and only covering the data marketed and not the data collected.

Data to be collected:

The group then selected sectors where losses are potentially significant, in line with the conclusions of the study carried out by the ADEME in 2018²⁹. These are:

- Fruits & Vegetables,
- Field crops (mainly potatoes),
- Other production depending on data availability and size of losses (in Tonnes).

Conversely, animal losses are excluded from the scope of analysis (too small a volume). Nevertheless, data on poultry, eggs and milk (which is still poorly estimated) is of interest.

Moreover, given the difficulty of calculating losses left in fields, the approach adopted is to identify at least the annual volumes outside usual sales: donations (even if outside FW) and other forms of revaluing.

Producers are becoming increasingly organised in setting up donations to associations. It is essential that these volumes be quantified. Even though these are economic losses for the producer, they are not food losses and therefore, as with other groups, care must be taken to identify them separately. Two sources have been identified to collect data on donations and to avoid possible duplication with producer declarations:

- via SOLAAL,
- via food aid associations.

As for other ways of recovering food losses, the participants wanted them to be clearly identified:

- methanisation [in this case, exclude crops dedicated to methanisation contracts (which are mainly found in field crops)];
- food products intended for human consumption which are turned into animal feed;
- others, when it is possible to quantify them: Remains in the field, Destruction, Compost and Amendment.

In addition, so as to categorise the data, the common information to be collected is:

²⁹ [Potentiels et leviers de réduction des pertes et gaspillage en production agricole \[Potentials and levers for reducing losses and waste in agricultural production\]](#) – ADEME – Gressard Consultants – 2018

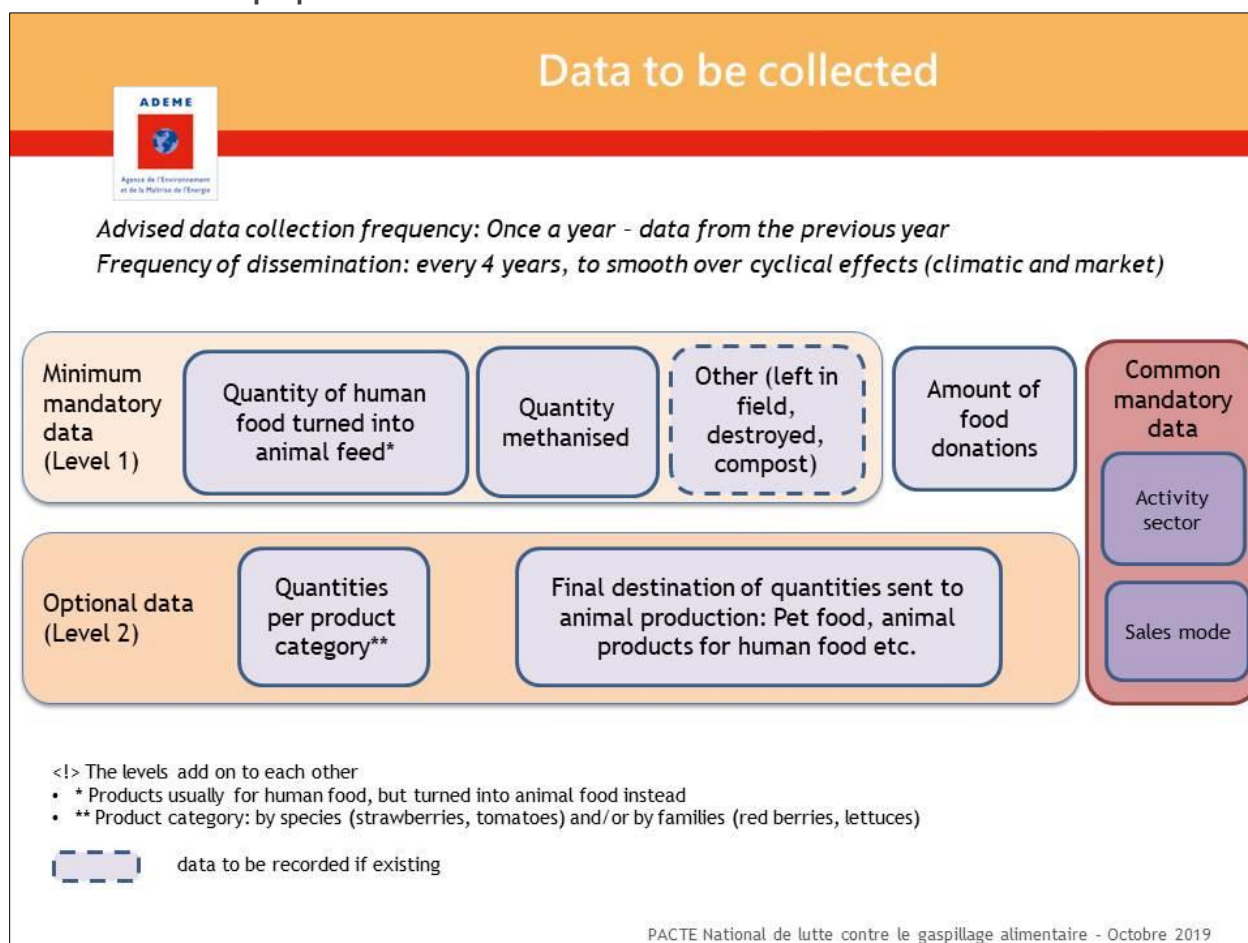


- the sector of activity (agricultural products produced and harvested),
- the sales mode: delegated (warehouses, marketers) or direct.

Regarding the weighing frequency, it was collectively agreed that while it was desirable to collect data once a year using data from the previous year, a reporting frequency of once every four years was more appropriate. For this sector of activity it is essential that the huge disparities from one year to the next are taken into account (climatic and market variations, etc.) and that a smoothing over 4 years is preferable. In addition, this frequency corresponds to the European Commission's expectations.

The unit collected is the Tonne.

WG data collection proposals:



In level 1 known data is collected. Level 2 provides precision by product category and, if possible, on the final destination of products diverted into animal production.

As in the other groups, extensive work was carried out on definitions (presented in the minutes of the last meeting of 3 October 2019 in Annex 2).

Points to note:

This is the most complex stage of data collection because of the great diversity and very broadly profession and the great difficulty of measuring items not marketed. Asking producers to account for what they do not sell when all their time and energy is put into marketing their production as best possible can only be envisaged under simple conditions and to help reduce losses. It is therefore necessary to ensure that producers do not see this as a risk of being stigmatised, but rather as an opportunity to continue the many efforts made by the profession to limit losses.

To possess reliable indicators that are not dependent on climatic or market variations, it was agreed that it will be necessary to work over longer periods than the calendar year to smooth out variations and mitigate cyclical effects.

The risk of double counting was highlighted due to the many possible intermediaries: the loss must be recorded where it is observed and processed.

In addition, there is no common federation to collect information and the profession is broken up into branches.

10.5.3 What are the collection methods for the observation?

It was agreed that there is no data available on losses in agricultural production, even within the service statistique du Ministère de l'Agriculture et de l'Alimentation (SSP) [Statistical service of the Ministry of Agriculture and Food]. It is therefore necessary to create an *ad hoc* collection system or to integrate questions into an existing system.

With this in mind, the idea is to rely as much as possible on the help of technical institutes (CTIFL, which has joined the work in progress, CNIPT, ITB, etc.) and the SSP.

The first avenues considered were:

- For production where losses are significant but variations in losses are small, include one or very few questions in the 'farming practices' survey (surveys conducted around every 5 years). This option is currently being studied with the SSP to define the questions to be added and tests are planned during the 2019/2020 campaign for application in the next surveys that will take place in:

- 2021-2022: field crops (including potatoes)
- 2022-2023: vegetables
- 2023-2024: fruits

- For production where losses can be significant and highly variable (mainly fruit and vegetables), include one or very few questions in the annual production estimation system or in an *ad hoc* system.

If an annual survey is set up to collect data on losses and waste, a very simple system will have to be devised for the producer, providing them with a reporting system, with support for the sectors to reduce losses. It will also be necessary to test the feasibility of such data collection as producers have poor knowledge of their losses and to verify that online surveys can reach a significant part of the population.

- For sea fishing, a survey was due to be launched by FranceAgriMer at the end of 2019 to monitor the use of fishery products and thus calculate losses with annual monitoring to measure changes. However, this remains a poorly monitored and most certainly underestimated figure.
- In addition, FranceAgriMer has conducted a study to evaluate grain losses during harvesting (study every 10 years). This study should also give rise to annual assessments of developments.

With the help of Income Consulting and the SSP, an experiment was proposed with the DRAAF Bourgogne Franche-Comté and Pays-de-la-Loire to test a lighter system with a test sample of fruit and vegetable producers. This questionnaire will also make it possible to collect the respondents' opinions on the questions asked. As for the other groups, the objective of this test is to verify the feasibility of a broad data collection, to evaluate the collection methods, to collect problems and suggestions expressed by users and to improve the questionnaire. At the time of the writing of this report, the questionnaire was being evaluated by the SSP. If an annual questionnaire is introduced for a small sample, the questions will need to be harmonised with those envisaged in the 'farming practices' surveys, to enable refined and comparable results to be collected every five years.

10.5.4 Which sample to use for a national observation?

As with the other groups, IN NUMERI helped to specify the samples needed for official data collection. As seen above, agricultural statistics are conducted by the service statistique du Ministère de l'Agriculture and it is strongly recommended that the databases of the Agriculture Census are used rather than the INSEE databases.

To construct the size strata, a breakdown is proposed based on turnover, the results of which are published each year in the FADN³⁰: €25-100K/€100-250K/>€250K. To simplify the sample, it was suggested that small installations with less than €25K turnover were not included.

A size breakdown could also be based on other elements (such as utilised agricultural area, UAA or quantity of poultry), but the size ranges would then vary depending on the activity selected.

The FADN gives statistics on areas and turnover in each size stratum, as well as average yields. These yields are used to evaluate the tonnages produced.

It is also possible to start from known production quantities (AGRESTE or EUROSTAT data) and estimate a ratio based on this tonnage. This makes it possible to assess changes linked to climatic conditions.

The proposed indicator is the ratio: percentage of FW per tonne produced

A sampling plan is proposed for the following three areas:

- Agricultural crops (NB. the OTEX vegetables (ETO - Economic and Technical Orientation) presented in the table below covers only the part of specialised crops, known as outdoor or covered vegetable crops. These other crops are included in the 'field crops' category).
- Livestock (farming) (poultry, milk, eggs) (if sector included)
- Fishery production

³⁰ [FADN](#)

Sampling plan for agricultural crops:

Main Production (OPEX)	Number of holdings 2017	Surface area (average ha)	Sample	Yield (100kg/ha)	Production (tonnes) for human consumption	Average FW in tonnes per tonne produced	Standard deviation FW/tonne	Accuracy if tonnage amount known	Relative accuracy if tonnages known
Cereals and oilseeds, protein crops (1500)									
€25-100k	30 192	75	70	70	1 572 251	0.06	0.045	0.011	18%
€100-250k	19 600	181	110	70	2 468 871	0.06	0.045	0.008	14%
>€250 k	2 572	337	100	70	602 860	0.06	0.045	0.009	14%
TOTAL	52 364		279		4 643 982	0.06		0.0058	10%
Other field crops (beets, potatoes, etc.) 1600									
€25-100k	5 658	12	100	450	2 201 103	0.05	0.045	0.009	17%
€100-250k	8 803	34	300	450	9 477 926	0.05	0.045	0.005	10%
>€250 k	4 857	83	400	450	12 638 958	0.05	0.045	0.004	8%
TOTAL	19 318		800		24 317 988	0.05		0.0030	6%
Vegetables (2800/1600)									
€25-100k	2 644	2	100	184	276 260	0.12	0.144	0.028	23%
€100-250k	1 274	5	150	184	369 231	0.12	0.144	0.022	18%
>€250 k	993	20	120	184	1 216 686	0.12	0.144	0.024	20%
TOTAL	4 911	6	370		1 862 177	0.12		0.0169	14%
Fruit (3900)									
€25-100k	3 799	8	50	170	537 976	0.1	0.08	0.022	22%
€100-250k	2 527	15	50	274	1 051 060	0.1	0.08	0.022	22%
>€250 k	1 281	40	100	274	1 398 360	0.1	0.08	0.015	15%
TOTAL	7 607	16	200		2 987 397	0.10		0.0112	11%
TOTAL crops	84 200	22	1 649		33 811 544	0.06		0.0026	5%

In the table above, we assume:

- % of cereals for human consumption: 10%
- % beet/potatoes for human consumption: 70%
- Surface area of 'other field crops' = surface area of industrial crops
- Vegetable surface area = fresh vegetable surface area in 2800)
- Fruit surface area = orchard surface area
- Total vegetable production is from SAA 2016 (not estimated from yields)

Fishery production sampling plan:

There is very little information available for fisheries. Companies do not use a standard wage system and 80% of companies have no employees. The elements making up the samples need to be completed.

The chosen sampling frame is SIRENE by default, even if it does not seem to be possible to determine the size strata.

The strata are the chosen sub-sectors, selected with the NAF code. Freshwater fishing is excluded.

The proposed indicator is the ratio: tonne of FW per tonne produced. It is assumed that production quantities are known (EUROSTAT data), and a ratio based on this tonnage is estimated.

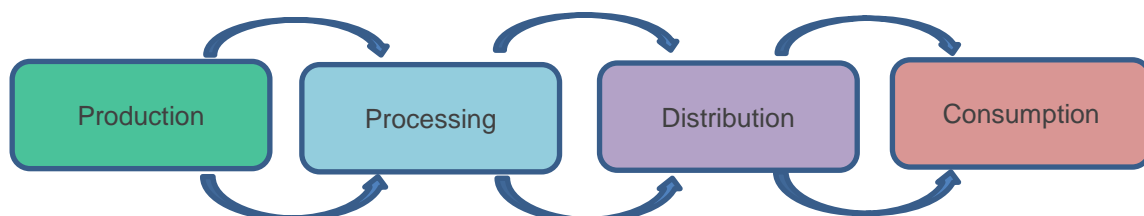
The weight of each stratum is the live tonnage produced for food (source Eurostat). The data is to be confirmed.



	Number of holdings 2017	Sample	Production (tonnes) for human consumption	Average FW in tonnes per tonne produced	Standard deviation FW/tonne	Accuracy if tonnage amount known	Relative accuracy if tonnages known
Fisheries			Tons live				
Sea fishing (03.11Z)	9 520	300	529 340	0.25	0.20	0.022	8.9%
Sea/marine aquaculture (03.21Z)	4 469	100	188 000	0.10	0.08	0.016	15.5%
Freshwater aquaculture (03.22Z)	1 469	100	41 000	0.10	0.08	0.015	15.1%
TOTAL	15 458	500	758 340	0.20		0.0160	7.8%

10.6 Crossovers and gaps in the subgroup work

Obvious crossovers were quickly noted between the groups, highlighting the interdependencies between these sectors and the difficulty of accessing information on intermediaries:



The following were identified among these intermediaries:

- **Independent logistics platforms:** between producers, processors and distributors,
- **Logistics**

None of these representatives were contacted or asked to join the working groups during the work and the data to be collected therefore still needs to be specified. However, for the logistic platforms, the determination of a representative sample could be made with the help of IN NUMERI.

LOGISTICS PLATFORM	Number of establishments 2018	Sample	Tonnes of FW	Average FW/etab	Standard deviation in tonnes	Accuracy	Relative Accuracy
Distributor refrigerated (5210A)	21	21	1 575	75	60.0	0.0	0%
Wholesaler refrigerated (5210A)	12	12	480	40	32.0	0.0	0%
Self-employed refrigerated (5210A)	441	100	4 410	10	8.0	4.9	49%
Distributor non-refrigerated (5210A)	144	144	2 160	15	12.0	0.0	0%
Wholesaler non-refrigerated (5210A)	383	150	7 660	20	16.0	7.8	39%
TOTAL	1 001	427	16 285	16		1.1	7%

In addition, key players were not represented with data that would be too difficult to enter in their absence. In particular, this concerns:

- **Open-air markets:** the Fédération Nationale des Marchés de France [French National Federation of Markets] met in October 2018. It has expressed interest in the PACT work but does not have any data to date. However, it is available to give out surveys. It should be noted that to estimate the FW, it will be essential to coordinate with the entities collecting waste from the open-air markets.
- **Small food shops:** Catering professionals (bakers, butchers, cheese makers, chocolate makers, fishmongers, caterers, etc.) amount to nearly 400 000 businesses. They are represented by the CGAD (confédération Générale de l'Alimentation en Détail [General Confederation of Food Retailing]), which is a signatory of the PACT but which did not take part in the work of the working group, citing the great difficulty it would have to collect data.³¹ Recent work carried out by the chambre des métiers et de l'artisanat [Chamber of Trades and Crafts], the region and the regional directorate of the ADEME Nouvelle Aquitaine should be noted, enabling small food businesses to identify and reduce food waste.
- **Homes:** this is a crucial point. This would have required an entire dedicated working group, as measuring household waste is complex to set up. The choice was made to exclude it from the 'consumption' working group, allowing it to concentrate on collective and commercial catering in conjunction with the stakeholders present.

The few figures that exist on food waste in households come from the study 'Food Losses and Waste - Inventory and Management'³² by the ADEME in 2016 and MODECOM 2007³³. Even though this data is regularly used, it cannot be used directly for the FW exercise as it corresponds to one-off studies that are not monitored over time.

In May 2018 the ADEME carried out an inventory of the various household waste observation surveys. Although these are interesting in terms of data, they do not constitute a reliable basis in the sense that they lack either specific information on waste (in the case of 'collected' surveys) or methodological guarantees (case of local characterisation campaigns). At this stage, there is no permanent and regular system for this target, which raises questions, particularly in the context of European reporting.

Finally, the food aid associations, which were very involved in this working group, stressed the lack of data on waste at their level. Indeed, it is a common observation that if the volumes linked to collection increase, quality can sometimes be a concern with increasingly short best before dates. Thus, the issue of waste transfer from large and medium-sized businesses to associations was discussed. These elements were also reflected in the parliamentary³⁴ report by MPs Melchior and Garot on the evaluation of the Law of 11 February 2016.

³¹ [Métiers de bouche 2019 guide](#)

³² Study '[Food Losses and Waste - Inventory and Management](#)'

³³ [MODECOM 2017](#)

³⁴ [Parliamentary Report](#) by MPs Melchior and Garot



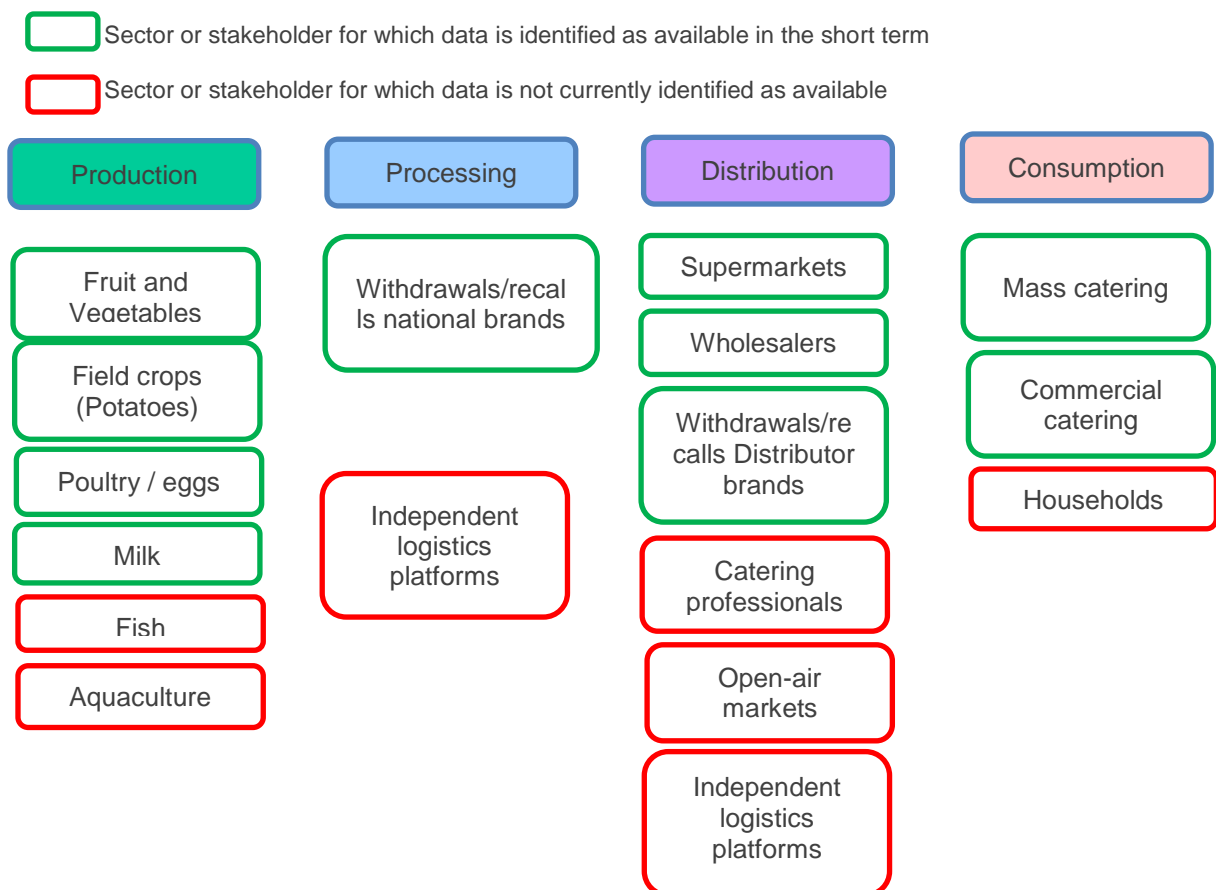
11 WORK SUMMARY

To reach the two objectives, the work carried out by the various stakeholders during this PACT II working group has made it possible to better define the conditions for implementing a FW observation system specific to each sector and to start drawing the outlines of a national reporting system.

11.1 The implementation of an observation system for each food chain stakeholder

This has mainly resulted in the identification of the data that is currently being collected or can be collected under acceptable conditions within each working group. The diagram below shows the sectors or stakeholders for which the work has highlighted a selection of data to be collected and those for which agreements are still necessary.

Summary of data identified for monitoring of food losses and wastage in France



Generally speaking, the available data corresponds to stakeholders representing these sectors in the WG. After 25 months of work, all stakeholders involved succeeded in sharing the relevant and collectable data. This primarily meets the objective of enabling the various stakeholders to define the conditions for setting up a voluntary internal observation system.

At the time of the writing of this report, the various groups are preparing to carry out tests to ensure that the data identified is properly understood, that the stakeholders in the field are able to answer the surveys and that the results can be analysed.

In terms of internal monitoring in the various sectors, a free choice of tools was favoured. Several tools were studied, such as online questionnaires or monitoring tools for each profession; the management of which remains to be determined.

Regular measurement campaigns (every year or every two years) are favoured by the representatives, which would make it possible to establish a routine and carry out observations benefiting the stakeholders in the field. It should be noted that for almost all groups, reporting encouraged by professional representatives is recommended to help commit stakeholders to a common monitoring system.

11.2 The implementation of national food waste monitoring

A significant amount of work remains to be carried out towards the objective of setting up centralised reporting at national level. To date, very little of the statistical reliability criteria have been met. In order to move towards national reporting:

- stakeholders need to be mobilised,
- the sample needs to be formed,
- the interconnection between voluntary and possibly mandatory surveys needs to be made,
- the reliability of stakeholders' input needs to be ensured,
- the frequency of surveys needs to be decided on, which may vary from one sector to another, but which should be in line with the recommendations of the European directive, i.e. every four years.
- consistency of the data collected needs to be ensured,
- the confidentiality of this data needs to be guaranteed,
- there need to be updates over time with samples that change from one survey to another.

To this end, it is necessary to set up national coordination for the collection of this data with a view to being able to monitor and analyse this information over time, particularly by public authorities.

In a second step, the consolidation of the different data (sources, units, different frequencies, implementation schedules, absence of certain stakeholders) will be crucial to create this indicator. This will make it possible to monitor the evolution of FW in France in the long term with a view to evaluating the achievement of the national objective of a 50% FW reduction.

For this, ministerial coordination will be indispensable. This will be achieved through the ongoing work by the MTES statistical services after the CNIS's recommendations concerning the European directive requirements. The step taken in the framework of WG 1 should make it easier for stakeholders to understand this national reporting and encourage reporting to be made thanks to a system that will gradually be put in place in the different sectors.

It will be important to rely on the right representatives to encourage these measurement campaigns. The involvement of these representatives could be crucial in sectors that are less aware of the issue. The participants would like an 'official' communication made by the public authorities. Stakeholders stressed the importance of 'positive' communication aimed at highlighting progress.

It should be noted that the study carried out by the IN NUMERI company determined that the national survey should be conducted among 13 000 statistical units in all sectors selected by the working group. Assuming that the various hypotheses adopted are verified, the objective of this sample is to measure food waste outside household consumption with an accuracy level of 1% to 2%.



12 WHAT NEXT?

The work undertaken for more than 2 years with the stakeholders involved in this working group has enabled very important progress to be made to meet the challenges of defining indicators and measuring food waste.

A general basis for defining and identifying the data required for a step-by-step observation of the food chain has been established, as well as the development of samples making it possible to propose waste measurements at each stakeholder's level.

However, this indispensable basis will now need to be transformed into reality by implementing the observation systems for each stakeholder.

It is now the responsibility of the various stakeholders in charge to keep the momentum going, in particular:

1. **For each sub-group in the food chain, continue work on developing observation systems.** These systems should of course be developed by each stakeholder individually with a view to encouraging individual progress.

This is achieved through:

- The choice of one or more reporting tools,
- The precise definition of the samples to be questioned,
- The organisation of steering to ensure data reporting and monitoring.

For the sake of completeness, the missing sectors identified in point 10.6 should be mobilised, with particular attention to households.

2. **Based on these systems, organise a national observation in the framework of centralised reporting** which will enable the State to monitor the achievement of national objectives on the one hand, and to ensure European reporting on the other.
To keep the momentum generated by the WG work going, pilot surveys could be envisaged as of 2020 with the support of professional organisations.
3. **The implementation of governance adapted** to each level to respond to these multiple challenges.

13 CONCLUSION

A great deal of work to mobilise stakeholders has led to some very encouraging ideas for building up the monitoring of food waste within each sector of activity. A significant amount of work still needs to be carried out with regard to the monitoring of a national indicator. Although initial ideas have been developed, they still need to be consolidated and organised. This will require national ministerial organisation and coordination to provide guarantees and consistent and reassuring signals for the stakeholders involved.

This WG is fortunate that there is mass awareness among stakeholders about the work against food waste. The work of the WG should bolster the stakeholders in following-up their efforts to participate in this national issue. In this context, ADEME will continue to provide ad hoc support to stakeholders where necessary to move towards a regular and sustainable observation system.



14 AFTERWORD

A message from Guillaume Garot



I don't need to remind you how important the fight against food waste is to me.

I launched the PACT in 2013, and in 2016 I brought in the law against food waste, which is the foundation of our public anti-waste policies in France.

I am working today, both in the National Assembly and in the field, to ensure that our country sets ambitious, quantified targets in law to reduce waste. To achieve this, we must have indicators that measure the reality of the situation, but also the reality of progress made.

That is why the findings of this working group are one of the cornerstones of our collective success.

Nothing will be possible without simple, manageable and effective tools for all involved, from producers to consumers. Nothing will be possible either without everyone's involvement. Everyone can do something and everyone has a responsibility to combat food waste.

I would like to thank all those who have been working in this consultation group for two years, in particular the ADEME, which coordinated it, developing recommendations based on their experience and knowledge of reality.

Our country was the first to legislate against food waste. Today, we are as ambitious as ever. I am delighted that this report will be the basis for future progress. Our determination must never waver.

Guillaume Garot
Member of Parliament for Mayenne
President of the National Food Council
Former Minister Responsible for Agri-Food



ANNEX 1: List of WG1 members

The following is a list of those who have participated at least once in a sub-group or plenary meeting

Participants in PACT WG 1	
STRUCTURES	PARTICIPANTS
1001 repas	Ronan De DIEULEVEUT
ACPPA	Jean-Marc THOUMIEUX
ADEME	Laurence GOUTHIÈRE
ADEME	Pierre GALIO
AGORES	Patrice POIRIER
AMORCE	Jessica TILBIAN
ANIA	Adeena CAMPAS
ANIA	Agathe LAUDET
ANIA	Christine BOSSIRE
ANIA	Léa MATHIEU FIGUEIREDO
ANIA	Sandrine BLANCHEMANCHE
AUCHAN	Delphine COLAONE
BETTERFLY TOURISM	Marianne HINSINGER
BETTERFLY-TOURISM	Emmanuel LE GUERNIC
BRAKE/ SYSCO	Aurélie AUTRIC
BRAKE/ SYSCO	Sandrine DUPEULE
CGI	Delphine KOSSER-GLORIES
CGI	Hervé POUZIN
CTIFL	Christian HUTIN
CTIFL	Xavier VERNIN
COMERSO	François VALLEE
COMERSO	Pierre-Yves PASQUIER
COMERSO	Robin LAURENT
CONFITURE REBELLE	Colette RAPP
Conseil Départemental de l'Essonne	Thierry BLAIN
Coop de France Agroalimentaire	Benjamin PERDREAU
Conseil Régional IdF	Nicolas POUTEAU
DELOITTE	Manuela GHEOLDUS
EC6	Frédéric ZULBERTI
EC6	Julien GARNIER
E-LECLERC	Franck BERNARD
E-LECLERC	Stephan ARINO
EQOSPHERE	Antoine BOUCHAUD
EQOSPHERE	Estelle d'ISOARD
EQOSPHERE	Julien CAZENAVE
EQOSPHERE	Lise COUTURIER
EQOSPHERE	Mélanie KESSLER
EQOSPHERE	Nicolas MOTYL
EQOSPHERE	Xavier CORVAL
FAMILLES RURALES	Anne LEGENTIL
FCD	Emilie TAFOURNEL
FCD	Emmanuelle BOURDEAUX
FFBA	Marie CASTAGNE
FFBA	Suzanne EVAIN
FNE	Héloïse GABOREL
FNE	Eléonore KUBIK
FNSEA	Emma ANDRE



FNSEA	Quentin DUPETIT
France AGRIMER	Marie-Agnès OBERTI
France AGRIMER	Philippe BONNARD
GECO Food Service	Frédérique LEHOUX
GRESSARD CONSULTANTS	Solène DENISOT
HAATCH	Louis RAYNAUD DE LAGE
HAATCH	Mylène BOUTTEMENT
HALTE DU COEUR	Adrien PERINO
HALTE DU COEUR	Louis LACROIX
I-CARE CONSULT	Alexandre CAMUEL
I-CARE CONSULT	Benjamin LEVEQUE
I-CARE CONSULT	Hugo ANEST
IDEOLYS	Eugène CASALIS
IDEOLYS	Ariane VAURY
IDEOLYS	Marguerite VELAY
INCOME Consulting	Fabrice DEMAREST
INCOME Consulting	Georges KRYCEVE
INRA/AgroParis Tech	Barbara REDLINGSHOFER
INTERFEL	Dragana MILADINOVIC
INTERFEL	Isabelle JUSSERAND
INTERFEL	Laura PLUM
INTERMARCHÉ	Audrey QUATANA
INTERMARCHÉ	Baptiste CARPENTIER
INTERMARCHÉ	Evelyne BANQUY
JETTE PAS PARTAGE	Eric COLAS
JETTE PAS PARTAGE	Sophie MOIGN
MAA /DGAL	Carole FOULON
MAA / CGAER	Elisabeth MERCIER
MAA / DGAL	Jean-Michel PICARD
MAA / SSP	Julia GASSIE
MAA / DGAL	Marine AUGÉ
MAA / DGAL	Viviane VALLA
MAA / DGPE	Virginia HOSSEN
MTES	Cécile FEVRE
PHENIX	Léa COLLIN
PHENIX	Pierre LEBRUN
RESEDA	Bénédicte RENAUD
RESTAU'CO	Didier GIRARD
RESTAU'CO	Eric LEPECHEUR
RESTAU'CO	Luc DELAHAYE
RESTOS DU CŒUR	Katia THIRIAR
RESTOS DU CŒUR	Pascal DECOOPMAN
RESTOS DU CŒUR	Aurélien DOLLON
RESTOS DU CŒUR	Daniel WIEST-GUDIN
RESTOS DU CŒUR	Jean-Claude GUESDON
RESTOS DU CŒUR	Pierre MAIZIERES
SNRC	Cerise DUCOS
SNRC	Claudine MARTIN
SOLAAL	Dorothee BRIAUMONT
UMIH	Laurent PRIGENT
VIA SOURCING	Sandrine GRUMBERG
WINNOW solutions	Constance LAMBERT
WINNOW solutions	Fleur DURAND SMET

A total of 100 people



ANNEX 2: Access to all minutes of the working group meetings

All 28 reports (sub-groups and plenary sessions) are uploaded onto a platform and accessible via the links below:

Consumption sub-group

[Minutes Consumption Sub-Group No. 1](#)
[Material from Consumption Sub-Group Meeting No. 1](#)
[Minutes Consumption Sub-Group No. 2](#)
[Material from Consumption Sub-Group Meeting No. 2](#)
[Minutes Consumption Sub-Group No. 3](#)
[Material from Consumption Sub-Group Meeting No. 3](#)
[Minutes Consumption Sub-Group No. 4](#)
[Material from Consumption Sub-Group Meeting No. 4](#)
[Minutes Consumption Sub-Group No. 5](#)
[Material from Consumption Sub-Group Meeting No. 5](#)
[Minutes Consumption Sub-Group No. 6](#)
[Material from Consumption Sub-Group Meeting No. 6](#)
[Minutes Consumption Sub-Group No. 7](#)
[Material from Consumption Sub-Group Meeting No. 7](#)
[Sampling Catering](#)

Distribution sub-group

[Minutes Distribution Sub-Group No. 1](#)
[Material from Distribution Sub-Group Meeting No. 1](#)
[Minutes Distribution Sub-Group No. 2](#)
[Material from Distribution Sub-Group Meeting No. 2](#)
[Minutes Distribution Sub-Group No. 3](#)
[Material from Distribution Sub-Group Meeting No. 3](#)
[Minutes Distribution Sub-Group No. 4](#)
[Material from Distribution Sub-Group Meeting No. 4](#)
[Minutes Distribution Sub-Group No. 5](#)
[Material from Distribution Sub-Group Meeting No. 5](#)
[Minutes Distribution Sub-Group No. 6](#)
[Material from Distribution Sub-Group Meeting No. 6](#)
[Minutes Distribution Sub-Group No. 7](#)
[Material from Distribution Sub-Group Meeting No. 7](#)
[Sampling Distribution](#)

Processing sub-group

[Minutes Processing Sub-Group No. 1](#)
[Material from Processing Sub-Group Meeting No. 1](#)
[Minutes Processing Sub-Group No. 2](#)
[Material from Processing Sub-Group Meeting No. 2](#)
[Minutes Processing Sub-Group No. 3](#)
[Material from Processing Sub-Group Meeting No. 3](#)
[Minutes Processing Sub-Group No. 4](#)
[Material from Processing Sub-Group Meeting No. 4](#)
[Minutes Processing Sub-Group No. 5](#)
[Material from Processing Sub-Group Meeting No. 5](#)
[Minutes Processing Sub-Group No. 6](#)
[Material from Processing Sub-Group Meeting No. 6](#)
[Sampling Processing](#)

Production sub-group

[Minutes Production Sub-Group No. 1](#)
[Material from Production Sub-Group Meeting No. 1](#)
[Minutes Production Sub-Group No. 2](#)
[Material from Production Sub-Group Meeting No. 2](#)
[Minutes Production Sub-Group No. 3](#)
[Material from Production Sub-Group Meeting No. 3](#)
[Minutes Production Sub-Group No. 4](#)
[Material from Production Sub-Group Meeting No. 4](#)
[Minutes Production Sub-Group No. 5](#)
[Material from Production Sub-Group Meeting No. 5](#)
[Minutes Production Sub-Group No. 6](#)
[Material from Production Sub-Group Meeting No. 6](#)
[Minutes Production Sub-Group No. 7](#)
[Material from Production Sub-Group Meeting No. 7](#)
[Sampling Production](#)

Plenary meetings

[Plenary No. 1](#)
[Plenary No. 2](#)
[Plenary No. 3](#)



ABOUT ADEME

The French Environment and Energy Management Agency (ADEME) is active in the implementation of public policy in the areas of the environment, energy and sustainable development. The Agency provides expertise and advisory services to businesses, local authorities and communities, government bodies and the public at large, to enable them to establish and consolidate their environmental action. As part of this work ADEME helps finance projects, from research to implementation, in the areas of waste management, soil conservation, energy efficiency and renewable energy, raw materials savings, air quality, noise abatement, circular energy transition and food wastage abatement.

ADEME is a public agency under the joint authority of the Ministry for an Ecological and Solidary Transition and the Ministry for Higher Education, Research and Innovation.

ADEME'S COLLECTIONS



FOCUS ON ACTION

ADEME is a catalyste : Actors and stakeholders talk about their experience and share their know-how.



EXPERTISE

ADEME is an expert – ADEME reports on research, studies and collective work carried out under its supervision.



FACTS AND FIGURES

ADEME is a reference – ADEME provides objective analyses based on regularly updated quantitative indicators.



KEYS TO ACTION

ADEME is a facilitator – ADEME compiles practical handbooks and guidelines to help actors implement their projects methodically and in compliance with regulations.



HORIZONS

ADEME looks to the future – ADEME promotes a forward-looking and realistic view of the energy and environment transition and what is at stake for society, to build a desirable future together.





WG 1 REPORT ON THE NATIONAL PACT AGAINST FOOD WASTE

At a time when the combat against food waste has become a matter of national involvement, the issue of measurement is still in its infancy.

All stakeholders agree that waste is particularly complex as it is so widespread throughout every moment of our lives. The question of measurement has very strongly engaged stakeholders throughout the food chain for over two years within the work of PACT II.

The work presented in this report has made it possible to agree on the relevant data to be collected corresponding to the specific characteristics of each sector. While the observation system specific to each stakeholder is gradually being put in place, one that will make it possible to monitor the evolution of food wastage at national level still needs to be constructed.

This work has also been echoed throughout this mandate by the European Directive which makes the measurement and monitoring of food waste mandatory for all Member States.

The voluntary work by the PACT stakeholders involved in this measurement exercise shows the maturity of the various sectors and undoubtedly the lead taken by France since the first PACT work in 2013.

This document presents the conclusions of the PACT II Indicators and Measurements working group for the 2017-2019 period.



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