Food Systems in European Cities

Deliverable 5.2 – Set of simplified indicators

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Authors	Agnès Lelièvre, Paola Clerino (APT), Anna Niero (UNIBO), Bernd Pölling (SWUAS)
Contributors	Mara Petruzzelli, Fabio De Menna, Matteo Vittuari, Francesco Cirone, Francesco Orsini (UNIBO), Pietro Tonini Xavier Gabarell-Durany (UAB), Luuk Graamans (WUR), Runrid Fox-Kaempfer (ILS), Lélia Reynaud-Desmet (RMN)
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Project Consortium

No.	Institution Short name	Institution Full name	Country
1	UNIBO	ALMA MATER STUDIORUM – UNIVERSITÀ DIBOLOGNA	IT
2	APT	INSTITUT DES SCIENCES ET INDUSTRIES DUVIVANT ET DE L'ENVIRONNEMENT - AGRO PARIS TECH	FR
3	RMN	COMMUNE DE ROMAINVILLE	FR
4	SWUAS	FACHHOCHSCHULE SUDWESTFALEN	DE
5	ILS	INSTITUT FÜR LANDES- UND STADTENTWICKLUNGSFORSCHUNG GMBH	DE
6	FLY	FLYTECH SRL	IT
7	NOL	NOLDE ERWIN	DE
8	BOL	COMUNE DI BOLOGNA	IT
9	NAP	COMUNE DI NAPOLI	IT
10	UNINA	UNIVERSITA' DEGLI STUDI DI NAPOLI FEDERICOII	IT
11	HCA	HAGUE CORPORATE AFFAIRS BV	NL
12	LAN	GEMEENTE LANSINGERLAND	NL
14	WR	STICHTING WAGENINGEN RESEARCH	NL
16	POL	POLAR PERMACULTURE SOLUTIONS AS	NO
17	TAS	TASEN MICROGREENS AS	NO
18	MBI	ASOCIATIA MAI BINE	RO
19	ARC	ARCTUR RACUNALNISKI INZENIRING DOO	SI
20	BEE	DRUSTVO URBANI CEBELAR	SI
21	SBD	AJUNTAMENT DE SABADELL	ES
22	ISL	ORGANIZACION DE PRODUCTORES DE TUNIDOSY PESCA FRESCA DE LA ISLA DE TENERIFE	ES
23	ULL	UNIVERSIDAD DE LA LAGUNA	ES
24	UAB	UNIVERSITAT AUTONOMA DE BARCELONA	ES
25	METAINST	STICHTING METABOLIC INSTITUTE	NL
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List of Abbreviations

CRFS	City Region Food System
CRFSi	City Region Food System initiatives
KPI	Key Performance Indicators
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
PIUA	Professional Intra-Urban Agriculture
PRISMA	Preferred Reporting Items for Systematic reviews and Meta-Analyses
S-LCA:	Social Life Cycle Assessment
UA	Urban Agriculture.

Executive Summary

FoodE (Food Systems in European Cities), funded by the Horizon 2020, was launched in 2020 and will last for 4 years. The consortium involves 24 organisations from 8 European countries (France, Germany, Italy, Netherlands, Norway, Romania, Slovenia, and Spain) and aims at accelerating the growth of citizen-led food system initiatives and creating related innovative and inclusive job opportunities at local level. The main objective of FoodE's WP5 (Business models and validation) is the classification of CRFSI (City Region Food Systems initiatives), the validation of the assessment tool, and identification of standard indicators of CRFSi sustainability measures. This report (Deliverable 5.2) on a set of simplified indicators is at the conjunction between several WP, namely WP2 (developing indicators and an evaluation tool for project managers) and WP3 (developing indicators and an evaluation tool for consumers). At the beginning of the project, three target stakeholder groups have been identified: owners/members of CRFSi; users of CRFSis; stakeholder groups (Higher Education Institutions, Public Authorities, Nongovernmental Organisations…).

Building on the simplified assessment tool developed in the WP2 and the user evaluation tool developed in the FoodE app in WP3, this work advances toward the creation of a third set of Key Performance Indicators (KPI) developed for all other stakeholders of the City Region Food System based on benchmarking of existing tools and in-depth study of the French urban agriculture (UA) context using several methods: a diagnosis of uses including a census of criteria and indicators used by the stakeholders based on 19 case studies and 4 workshops organised for social stakeholders of urban areas. 2 further workshops with a diversity of stakeholders enabled us to identify the different kind of uses where they would need an evaluation tool. This combined with the work done in WP2 was the basis for the third set of KPI to be included in the survey online tool. This survey is presented at the end of the report as it is being continued in T5.3 and will enable us to ensure the validity and pertinence of our KPI sets for all three groups of users identified at the beginning of the project.

1. Introduction

1.1 FoodE in a nutshell

The main objective of the EU HORIZON2020 project FoodE (Food Systems in European Cities) is to involve European Union local initiatives in the design, implementation, and monitoring of an environmentally, economically, and socially sustainable City Region Food System (CRFS). The key challenge of the project is to improve food and nutrition security of European citizens by shaping a sustainable environment able to increase accessibility and availability of affordable, safe, and nutritious food. This challenge will be tackled by setting a co-created mechanism, based on Citizen Science and Responsible Research & Innovation principles, where public authorities, citizens, SMEs, and non-profit organisations can share ideas, tools, best practices, and new models, supporting cities and regions in developing innovative and sustainable food systems. FoodE aims to accelerate the growth of sustainable and resilient citizen-led urban food system initiatives across Europe by engaging citizens, food system start-ups and small businesses operating in the urban food landscape, cities and regional authorities, academia, and schools. The outputs of FoodE will pave the way for job creation, enhance local economies, and enable local communities to contribute to the United Nation's Sustainable Development Goals, whilst increasing the relationships and interlinkages between the different actors of the food chains.

1.2 Set of simplified indicators (WP 5)

FoodE will develop a robust, consistent, and science-based methodological framework to assess CRFSi and a dedicated analytical tool to facilitate participatory decision-making for the development of innovative business models and their replication beyond the setting of the project. The main objective of WP5 is the classification of CRFSi and validation of the assessment tool and identification of standard indicators of CRFSi sustainability measures. It will address a) to identify, validate, and classify innovative business models in CRFSi; b) to define a simplified dataset of indicators for defining CRFSi sustainability; c) to create a multi-user online survey tool; and d) to create a standard citizen-driven certification scheme (FoodE label).

WP5's four tasks are:

- Task 5.1 CRFSI business models
- Task 5.2 Simplified dataset of indicators
- Task 5.3 Multi-user survey online tool
- Task 5.4 FoodE label

Each of the four tasks results in an own Deliverable synthesizing the main activities and outcomes.

This report presents the identified dataset of indicators, suitable for the development of innovative business models to enhance CRFSi sustainability.

2. Benchmarking existing evaluation tools and indicators of CRFS sustainability

2.1 Methodology

We conducted a literature review to get a census of existing sustainability evaluation tools and their frameworks of CRFS initiative. A first search in the existing literature led us to focus on urban agriculture (UA) as a proxy. CRFS as a concept is quite recent and did not seem large enough to identify articles

and a first search of "food system" led to a huge number of articles, most of which were not pertinent as they were mostly about the chain of production and value either of a specific product (apple, pork…) or at a large regional or national level but not at the initiative level. This led us to choose to focus on UA for a first approach to be then enlarged to food systems at a later period. Our definition of UA, focusing on farming as gardening practices, is usually not evaluated in the same way by private and public stakeholders but we still tried to keep as broad a definition as possible using the definition of Mougeot (2000).

"An industry located within (intra-urban) or on the fringe (peri-urban) of a town, a city or a metropolis, which grows and raises, processes and distributes a diversity of food and non-food products, (re-) using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area."

However, we did not exclude literature including other steps of the CRFS (processing or waste management for example) in order to have the broader view possible.

We used the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method as systematic screening procedure to search and sift through the literature. Articles were limited to peer-reviewed publications in scientific journals indexed in Web of Science and Scopus. Database searches were conducted in the period of January 2022. Two additional references were added and more will be added as elicited by experts during the second phase.

We used keywords as broad as possible with a very simple equation: (tool OR framework OR method OR approach) AND (sustainability) AND (eval* OR assess*) AND (urban agric* OR urban farm*). The terms were combined using the specific Boolean operators of each database and using the shortening operator to ensure the use of a whole family of terms (for example assessment, assessing and other derivatives for assess*). Tests were done to ensure which keywords would bring more information.

The screening of the literature for references of interest was then conducted using a predefined set of exclusion criteria: the articles had to be written in English, they had to deal with CRFS and it had to deal with sustainability evaluation whatever the scale or discipline used. However, articles describing one experiment on one farm or policy studies were excluded as well as full books. The article also had to have been published between January 2000 and January 2022.

The papers identified were then selected first on the basis of the title and keywords, then on the abstract and finally each article was read in full and analysed using a specific classification grid developed by the researchers (Table 1). Articles were then coded in a database using this grid.

Table 1. Classification grid used to analyse the selected articles

Classification criteria	Objective of the criteria
Date of publication	Importance of the subject through the years
Localisation of tests/development	Cartography of the subject
Sustainability dimensions studied	Importance of the dimension
Sub-dimension when pertinent	Identify specific interests
Scale	Importance of the scale
Number of criteria and/or indicators	Complexity of the tool
Open source or not	Availability of the tool
Qualitative/quantitative evaluation	Complexity of the tool
Ex ante/In itinere/ex-post	Time of life of the project evaluated
For whom? What uses	Identify users
Results presentation/Aggregation	Tool uses
Use of an existing framework	Compatibility with other tools
Participative construction, which part?	Identify designers

As said in the introduction, we also tested the equation (tool OR framework OR method OR approach) AND (sustainability) AND (eval* OR assess*) AND (food system*) brought out 773 hits for the same time period in Web of Science and 512 in Scopus. After a first screening of the titles, 112 articles including 16 reviews for Web of Science and 70 for Scopus seemed to enter the larger scope of Food systems not limiting to CRFS. Due to a lack of time, this investigation didn't go further since most of the articles seemed to focus on sustainable diets, large-scale supply chain or on a specific produce. A later review might be done using the same method and the thinned down list based on title screening.

2.2 First statistical results

The literature search yielded a total of 122 unique, non-duplicate records in Web of Science and 145 in Scopus. After screening titles and comparing them to the exclusion criteria, 108 records were found in Web of Science and 135 in Scopus. Both lists were then combined to yield a total of 170 unique, non-duplicate record. After screening abstracts, 46 of them were removed because they did not meet at least one criterion leaving 131 for full reading, only 123 of them were accessible online. Articles were divided in two categories: 80 high priority articles and 43 secondary priority papers, which might be pertinent, and which will be read in a secondary time with the grey literature.

The studied sample thus includes 80 articles which are currently being analysed and classified using the grid presented in the previous section. Only 67 have been read by the time of the deliverable and are analysed in the following paragraphs, except for Figure 1. 4 of the 67 articles read fell out of scope after full reading as not using or presenting framework, tools or indicators about sustainability. Out of the 67 articles 4 based their work on reviews.

As can be seen in Figure 1, the thematic is quite recent and the number of published articles is small and very variable between years.

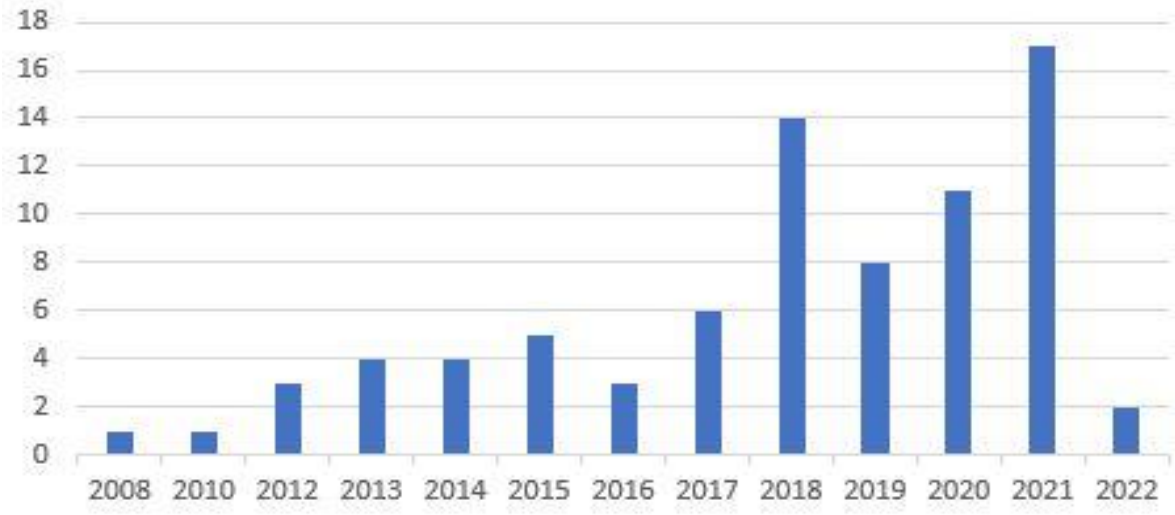

Figure 1. Number of high priority articles per year

The papers present very different approaches and frameworks: some use Life Cycle Assessment approaches and its declination (S-LCA and LCC for example) (Benis and Ferrão, 2017), some are based on existing frameworks (Alberti et al., 2020) while others develop their own approaches. These are still preliminary results as there are still some articles to read, especially the secondary priority ones and some about food systems not including agriculture. Out of the 67 articles already analysed, 22 directly refer to the LCA methodology (a third of all papers) but two others using footprints methods can be linked to Life Cycle Thinking. Three articles belong to the MESMIS framework, three to the MIVESs method, three use the ecosystem services framework and other framework used and cited comprise Delphi, Rapid Assessment Process, SWOT, Socio Climatic Vulnerability Index and SITES. This means that less than a third of the articles develop a framework specific to their tools (19 articles).

2.3 Literature analysis and decisions for the indicators

Out of 67 articles, 51 of them look at the environmental pillar, 39 at the economic and 39 at the social pillar even though the redistribution in sub-dimension sometimes brings another distribution (for example using the MESMIS method the distribution can be production, resilience and adaptability, equity). 11 of the articles add another dimension like governance. Not all articles detail the criteria or indicators, only 38 of the 67 do. The number of criteria used varies between 1 and 40 with some tools testing only a new sustainability indicator (Bagstadt et al., 2012) and the number of indicators used varies between 1 and 59. Out of the 58 articles detailing indicators, 26 use qualitative indicators and 45 use quantitative indicators, when 12 use both. 19 articles mention the participation of experts or stakeholders in the framework or tool development process, which is nearly a third of all articles.

41 articles talk about tools developed for experts and only 15 seem to be developed for urban planners and policy makers. Only 2 out of 67 have been developed for the stakeholders in general, which means that there is a real need for them. 42 are used *ex-post*, 13 *ex-ante* and 3 *in itinere*.

What seems most interesting also is the diversity of tools and disciplines mobilised. A question that arises is the compatibility of these tools. Can they be used indiscriminately? Can they be used together or as complement? No consensus has yet emerged on the approach to choose according to the scale or the use and this is where further research seems important to us. Articles by Sanye-Mengal et al. (2017) and the use of the MIVES framework underline the need to use methods from different disciplines and combine them in order to implicate different kind of stakeholders in the development of these tools and its use for different publics.

This first benchmark of existing framework and tools centred on UA needs to be finished and completed with a review of other tools existing in food systems. We also think there is a need to add to these scientific reviews a census of some of the tools used by private and public stakeholders in their day-to-day practice of UA and CRFS project evaluation in order to create pertinent and solid evaluation tools since these tools might not be visible in the scientific literature but only at best in the grey literature. This has been in part done by the diagnosis of uses (see below) but will still need to be increased after this deliverable and maybe even after the FoodE project to give more substance and depth to the outcome of this work.
This preliminary study of existing evaluation tools has shown that this subject is quite recent and still under development. Several tools already exist to evaluate the sustainability of UA at different scales and using different frameworks. However, the compatibility of these tools with the uses of the stakeholders has not yet been analysed even though we already know that cities and private stakeholders have developed sometimes unsatisfying but needed tools to help them decide how to encourage UA. This is why the work done in the FoodE project is important in creating shared frameworks and tools for the three different kinds of stakeholders identified in the project: owners/members of CRFSI; users of CRFSIs and other stakeholder groups (Higher Education Institutions, Public Authorities, Non-Governmental Organisms…). What also seems to come out of this benchmarking is that different users have different needs and this is why the indicators used might need to be adapted to each group.

3. Results of previous WPs and specific evaluation tools

Results of the benchmarking show that we do need a tool for each group of users. Work already done in the other WPs of the FoodE project has developed tools adapted to project managers/members and to project users/consumers. This work does not need to be replicated here. However, we thought a way of improving these tools would be to take into account an external evaluation of them by the different stakeholders of the CRFSI. This work will be presented in part 5. First, here is a short summary of the work done in the other WPs and a presentation of the two tools already developed.

3.1 Synthesis of the results from WP2: evaluation tool and KPI for project managers

In WP2 "Methodological framework development and case studies sustainability assessment", the team developed a Methodological framework to develop Life Cycle (D2.2), a Data Collection Protocol (D2.3) and Data Inventory (D2.4), to perform a simplified Life cycle assessment, life cycle costing and social LCA of 100+ CRFSI (D2.5). Accordingly, a data collection template has been created for the Extensive life cycle assessment, life cycle costing and social LCA of pilots and self-assessment tool (D2.6) as well as a Pilot Decision Support Tool (D2.7). The tool aims at supporting pilot owners in assessing the pilots' sustainability and is composed of different modules that let the user modify selected parameters and evaluate sustainability criteria divided among economic, social and environmental dimensions. It is composed of four main sheets that can be later used by pilot owners for a semi automatized assessment on specific indicators.

Excerpt of D2.6. "The DCT consists of a spreadsheet Excel file functioning as a guided data collection tool for pilots. This is composed of four main sheets, that can be later used by pilot owners for a semi automatized assessment on specific indicators. Some cells were formatted to deliver automatic calculations starting from the raw data included, while some others were used to collect primary data to base further analyses on, especially for social and economic assessments. Based on the automatically generated formula, graphs for a rapid assessment appraisal were also included to provide immediate user-friendly visualisation outputs for self-assessment"

Excerpt of D2.7. "The Pilot Decision Support Tool is comprehensive simplified informatics tool developed using spreadsheets. The aim of the tool is to support decision-making of business models

and be used by relevant stakeholders and pilot owners from the City/Region Food System. The tool is composed of different modules that let the user modify selected parameters and evaluate sustainability criteria divided among economic, social and environmental dimensions. The Pilot Decision Support Tool is divided in 5 sheets: introduction, general information, economic, social, and environmental"

The objective was both to develop an analytical decision support tool to support decision-making of innovative business models and improve their performances and sustainability but also to be able to include this tool in the FoodE app being developed as part of WP3 Cross pollination (T3.2).

The Pilot Decision Support Tool was developed as a Microsoft Excel(R) file. The tool is mainly automatic for most of the indicators, meaning that the user enters values and gets the value for specific indicators instantly. The Tool is composed of different modules that will let the user modify selected parameters and evaluate the different options for the assessment of specific CRFSI. In particular, the tool allows assessing different food products, technical and organizational solutions, investments and management options, environmental, economic, and social conditions.

The whole tool has been developed using a Life Cycle Thinking approach and is based on a conventional LCC approach for the economic pillar, the S-LCA approach for the social pillar and the LCA approach for the environmental pillar.

Here are the KPIs which have been decided upon based on the methodological framework development but also on two workshops during two General Assemblies of the FoodE project and exchanges between the development team and the pilots.

Table 2. KPI of the Self-Assessment Tool for pilot owners developed in WP2

Pillar	Theme	KPI
Economic	Organization profitability and outlook	Annual net profit margin
		Income diversification
		Business future
		Sales revenue
		Activity revenue
		Public funding
		Private funding
	Local economic development	Place of origin of employees
		Locally sourced supply
		Suppliers' practices
	Customers and users	Customers/users acquisition
		Customers/users return
		Customer/user expenditure
		Customers/users reason to come back
		Online selling
Social	Job (quantity, quality, diversity)	Waged jobs
		Contract typology
		Aver. gross monthly salary
		Workplace Trainings
		Gender balance
	Community outreach, engagement & education	Frequency of events
		Disadvantaged people
		Connection with local producers
		Volunteering activities
	Food quality	Product characteristics
	Food security	Production and supply characteristics
Environmental	Food production/supply	Technology used for crops
		Animal fed provenance
		Fishing Gear types
		Ancient cultivar or local breed
		Characteristics of the products
	Resource use efficiency	Water saving practices
		Electricity sources
		Heating sources
	Waste management and circularity	Waste recycling
		Sustainability commitment
		Packaging and materials recyclability and compostability
		Packaging and materials reusability
	Transport	Distance from clients/ customers
		Type of transport to clients/ customers
		Type of transport of supplies

3.2 Synthesis of the results from WP3: evaluation tool for consumers and KPI

In WP3 "Cross pollination", T3.2. is focused on the development of the FoodE app and as part of its work, has been developing a tool to enable a relationship between CRFSI and customers/visitors. On its part, a CRFSI respond to the simplified sustainability survey developed in WP2 (see above), which yields a score from 1 to 5 in terms of overall sustainability, and a score performance per sustainability dimension (economic, social and environmental) (see Figure 2 below).

Figure 2. *Inclusion of the Self-Assessment Tool developed in WP2 in the FoodE phone app*

On their side, users/customers evaluate their experiences with a specific CRFSI using a tool developed specifically in WP3. This tool consists of a survey open to each user/consumer comprising an open comment space and KPIs for 5 dimensions: Food and experience, Economic, Environmental, Social, and Service quality. Each dimension is evaluated through several indicators and aggregated to obtain a score from 1 to 5. The open comment is reviewed by the FoodE App administrator to check that it falls within the scope of the tool and to avoid deceptive language. The indicators are qualitative with either answers generating a score from 1 to 5 or binary questions generating either a value "1" or "5".

To develop this tool, the team included the stakeholders in its design with several surveys and workshops. A first survey was done and a second survey was distributed to all members of the FoodE General Assembly (see D3.7 and D3.8). Further design workshops were organised within the framework of relevant FoodE meetings in July 2021 with the General Assembly and the Sabadell Stakeholder Board. A final survey was done to finalise the KPIs of the evaluation tool.

Table 3. KPIs of the evaluation tool for consumers developed in WP3

Food and Experience
Subtitle: Quality of products/experiences
Quality of food
Quality of the overall experience with the initiative.
Satisfaction according to what was previously advertised.
Economic
Subtitle: Price-performance ratio of products and services
Affordability of the products and experiences offered by the initiatives compared to their overall quality.
Availability of a range of products with different prices.
Environmental
Subtitle: Connection with nature and the environment
Measures to reduce the environmental impact of the initiative.
Eco-building materials.
Measures and strategies for avoiding waste and packaging to contribute to a circular economy.
Animal welfare.
Social
Subtitle: Social engagement, local communities and adaptability
Family friendly.
Facility adapted for disabled people.
Level of engagement of local communities.
Connection to local culture and gastronomy.
Service quality
Subtitle: Friendliness, quality of services, waiting times and transparency
Staff disposition/attitude towards visitants and customers.
Service speed or waiting times to be attended.
Information and transparency policy.

Both of these tools address two of the publics that were targeted for this task. However, the work in T5.2 was to create a set of KPIs for each of the three groups of stakeholders identified when writing the FoodE project. The remaining group was the group of other stakeholders comprising local authorities, experts, NGOs, land owners, funders… This is why T5.2 mainly addressed this group specifically and the results of our work are presented in the next part.

4. Development of an evaluation tool for other stakeholders (local authorities, funders, experts, NGOs…)

The work of our group was based on several studies, which in combination can help us create of set of KPIs for the third stakeholders' group. First is the PhD work of Paola Clerino on the development of a sustainability assessment tool of professional UA, which will be defended on the 12th of January 2023 in AgroParisTech, Paris (France). This may seem to be limited in comparison with the set of KPIs we are looking for but her work can be seen as the nucleus for creating the tool, which can then be enlarged to include other kinds of initiatives of the CRFS. Secondly, a series of workshops also took place during the summer 2022 with French social stakeholders around the place and the impacts of UA but more generally food production in poor urban areas and the transcription and translation of them were part

of the Master of Science internship of Ana Marquez-Barrenecha, defended in November 2022 in Wageningen University and Isara Lyon and co-directed with a member of the Stakeholder Board of Advisors (UMR Ladyss). Lastly, the literature review done in the introduction was also used to identify within all indicators from the two works, which should be included in our set of KPI.

Most of the results of this part of D5.2 have been accepted for publication in Agronomy for Sustainable Development "**Stakeholder's practices for the sustainability assessment of professional UA reveal numerous original criteria and indicators"** by Paola Clerino, Agnès Fargue-Lelièvre and Jean-Marc Meynard. The following paragraphs are an adaptation of pertinent parts of this article.

With the rapid growth of Professional Intra-Urban Agriculture (PIUA) projects in the Global North, sponsors (meaning funders, owners leasing buildings or lands for CRFSI…), projects leaders and experts developing these projects are seeking to evaluate their sustainability. As existing assessment tools are not adapted to PIUA projects, they establish their own assessment practices. Our study examines these practices to identify their original features, criteria and indicators used. To this end, we analysed 19 case studies of different PIUA projects in France. We identified four dimensions underpinning sustainability assessment, namely internal sustainability, external sustainability, the project leader's credibility, and the innovative nature of the project. We also shed light on the wide diversity of the 67 assessment criteria identified, as well as the qualitative nature of 78% of indicators used. In addition, our study highlights that assessment practices evolve over time as the project progresses from ideation to implementation, according to the variety of assessment situations. Our study is the first to provide an in-depth exploration of PIUA stakeholders' sustainability assessment practices and to shed light on their specific features. Our results afford a better understanding of the way the sustainability of PIUA projects is assessed, and contribute to reflection on the design of a flexible assessment tool, considering the diverse criteria and practices used by stakeholders to assess the sustainability of PIUA.

4.1 Methodology

To explore stakeholders' practices regarding the sustainability assessment of PIUA projects, we performed a "diagnosis of uses" (Cerf et al. 2012). A diagnosis of uses is an approach designed by ergonomists and agronomists, aiming at identifying issues faced by stakeholders when they implement a specific activity and the way they use diverse tools to cope with these issues. It is then a preliminary stage of the design of a new and more efficient tool. The diagnosis of uses relies on data collection from various potential users of the new tool. In our case, the diagnosis of uses applies to the sustainability assessment of PIUA projects: it aims at highlighting the diversity of criteria and indicators used by different stakeholders, in order to enrich the design of an assessment tool adapted to the diversity of stakeholders' working situations. This diagnosis covered 19 case studies in which PIUA projects were evaluated. We selected case studies covering the wide range of possibilities concerning the type of stakeholders involved in the evaluation process, the type of projects and the project selection processes. First, a census of PIUA projects in France was realized based on internet research, including press articles, public calls for projects and consultation of the website of the French professional network of urban farmers (AFAUP). Internet research were completed by discussion with PIUA stakeholders (experts, sponsors and project leaders). Among the identified projects, we selected 19 case studies with a snowball sampling.
In order to capture the diversity of assessment practices, the sample of case studies was selected to represent the **range of stakeholders** involved in PIUA projects, the **diversity of agronomic characteristics of PIUA projects** and the **diversity of project selection processes.** We studied the 19 cases by analysing three types of data: **Semi-structured interviews, Official documents relating to selection processes, Project proposal analysis frameworks.**

We analysed the diversity of the different themes, criteria and indicators used; but also, their frequency of use (occurrences) among the 19 case studies, knowing that different case studies may use the same criteria or indicators (Figure 3). A statistical analysis based on a Hierarchical Clustering (HC) was also carried out to categorize the case studies according to the number of themes, criteria and indicators they applied (number of themes, criteria and indicators used by each case study).

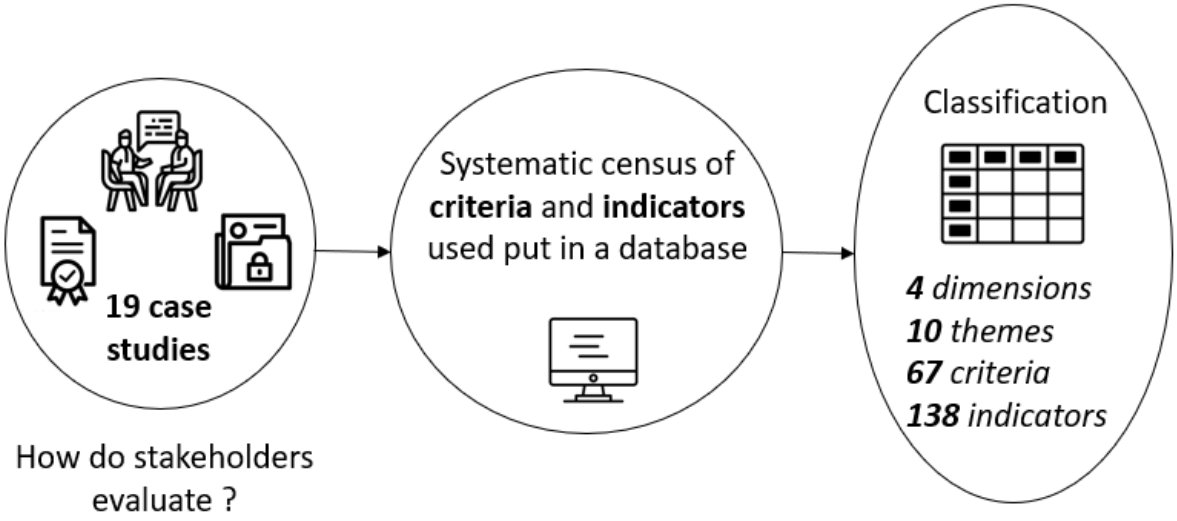

Figure 3. Methodology used for the diagnosis of uses

4.2 Defining the different uses for an evaluation tool

After analysing the 19 cases and the discourse of all interviewees, we organised 2 workshops with 9 stakeholders in total (experts, sponsors and project leaders) and defined with them 5 main types of uses, where sponsors would need criteria to evaluate the sustainability of PIUA. These are the uses where an assessment tool would be needed. The five uses are: precise a project idea, inform project managers on the characteristics wanted in the project, choose a project to sponsor, justify the choice of a specific project among several, follow a PIUA project once it is installed.

4.3 Criteria and indicators used in France

All criteria encountered during the interviews or written in the documents have been systematically noted and entered in a excel database (See Appendix 1). They were then classified by theme and sub-theme to facilitate their presentation and comprehension.

We observed a wide disparity in the number of themes, criteria and indicators used per case study. Some case studies assess a small amount of sustainability themes (with a minimum of three themes), whereas some considered up to 10 sustainability themes. An average of 15 criteria were used per case, with a minimum of 4 criteria and a maximum of 33. While some projects were evaluated based on a very small number of themes and criteria, others were analysed in great depth, suggesting that the evaluators' expectations can vary widely. Finally, for some case studies, we identified a large number of indicators (with a maximum of 30), whereas no indicators were identified for one case study, suggesting that indicators may be implicit or confidential.

We identified 10 different themes of sustainability, and gathered those under four dimensions of sustainability.

The first dimension encompasses themes pertaining to the external sustainability of a project. This refers to the contribution of agriculture to the sustainable development of its territory. In an urban

context, external sustainability is linked to the multi-functionality of PIUA and gathers the services provided by PIUA projects to the city.

The second dimension comprises themes and criteria relating to the internal sustainability of a project. In an urban context, internal sustainability relies on different themes such as the project's technical coherence, its economic robustness, and the management of regulatory aspects which generally address safety or trading standards in the Global North.

The third dimension is about the innovative nature of a project. Numerous interviews and documents highlighted that new issues are emerging around UA, such as limited and non-traditional access to land (i.e. rooftop or underground farms, precarious lease), use of urban soils and alternative growing media (i.e. soil pollution management, use of coffee ground as substrate), the specific legal and political environment, the functions which are not strictly productive or the involvement of non-traditional farmers (Pfeiffer et al., 2015). All these distinct features encourage the development of innovative practices, particularly important to adapt to specific urban challenges (Schans et al., 2014).

The fourth and final dimension of sustainability identified in interviews and documents encompasses themes and criteria for assessing the credibility of a project leader, i.e. evaluating the robustness of the project's governance and the adequacy of the project leader and partners' profiles (references, training and motivations). These criteria serve to ascertain whether the project leader is able to ensure the implementation of the project and the achievement of its objectives (set in the project proposal).
The four dimensions of sustainability are organized into themes covering 67 different criteria.

The external sustainability dimension has the most diversity, with 3 themes and 11 sub-themes covering 35 different criteria. The internal sustainability dimension comprises 3 themes, 6 sub-themes and 22 different criteria, the innovative dimension 2 themes and 5 different criteria, and the dimension of the project leader's credibility also counts 2 themes and 5 different criteria.

Our analysis identified 138 different indicators used by at least one of the 19 case studies. Of the 138 indicators, only 31 are quantitative indicators whereas 107 are qualitative. Quantitative indicators thus account for just 22% of the indicators recorded. This trend is not systematically observed in the literature, or at least to a lesser extent. Only 25% of the indicators used in the Five Borough Farm tool are qualitative (Altman et al. 2014), against 55% in the FADEAR tool (FADEAR 2013) and 62% in the IDEA method (Zahm et al. 2018). However, our results support the conclusions of some studies which stress that qualitative indicators are essential for evaluating sustainability, alongside quantitative indicators, as they allow for better inclusion of stakeholders' values and practices impacting their capability to implement sustainability (Scerri and James 2010). Likewise, they align with the finding that qualitative methods are in the majority for the assessment of the socio-cultural benefits of UA (Ilieva et al. 2021). The high diversity of the indicators identified can be seen in Appendix 3 but a small selection can be found in Table 4.

Table 4. Overview of the diversity of sustainability indicators identified

Indicators	Dimension	Sustainability criteria estimated by the indicators	Source
Produce 4-5 tons a year of leafy greens	Internal sustainability	Realistic crop plan and yields	Interview, CS11: "*We have to produce 4-5 tons a year, you can't make a loss, we have to at least ensure the profitability of the products we replace and if possible make a little extra margin*."
Have natural lighting	Internal sustainability	Limitation of arduous work	Document, CS6: "*Visual comfort: the spaces occupied have natural lighting*"
Implement workshops to test farm's activities	External sustainability	Take-up of the project by locals	Interview, CS18: "*We preferred to test things through workshops [...] with the city's non-profit organizations [...] to see whether there were any advantages for the inhabitants*."
Production and consumption within a 20km radius	External sustainability	Local consumption of produce	Document, CS6: "*Fruit and vegetables produced and consumed within a 20km radius*"
Project leader justifying training in the agricultural field and market gardening in particular	Credibility of the project leader	Relevant skills of the project leader	Document, CS3: "*Training in the agricultural field and market gardening in particular*"
Project leader from the private sector	Credibility of the project leader	Project involving an innovation	Interview, CS6: "*The private sector is more dynamic, it's the one that creates jobs [...] it would be innovative because there would be the whole aspect of supporting people reintegrating society. Today, most of the time this is handled by non-profits or organizations that are trained to do that*"
Opening of the site to the public	External sustainability	Accessibility of the farm	Document CS5: "*The project leader will describe the site operation is terms of […] opening of the site to the public*"
Amount of public aid received	Internal sustainability	Aid and subsidies obtained or expected	Document CS8: "*In the case you received public aid, specify the amounts*"
Promotion of regional plants	External sustainability	Preservation of biodiversity	Document CS15: "*Promotion of regional plants from Ile-de-France*"
Use of innovative materials from recycling	Innovation	Recycling and waste recovery	Document CS14: "*Initiatives using innovative materials, especially from recycling*"
Non-use of chemical phytosanitary products	External sustainability	Limiting soil and water pollution	Document CS15: "Non-use of chemical and environmentally hazardous phytosanitary products"

We also identified 67 assessment criteria, some of these being particularly original, compared to the classical methods of assessment of agriculture: for instance, a project's contribution to the appeal of its neighbourhood, its complementarity with the rural farms in the area, or the freshness of its produce. Finally, we showed that assessment practices differ among case studies by identifying three groups of case studies, some using a large number of criteria and indicators, other only a few, and focusing on different sustainability themes. Our work identified two hypotheses to explain this diversity of practices, namely an evolution of assessment practices over time, and a variety of assessment situations.

4.5 Final choice of indicators set for other stakeholders and tool development

Based on this work and on the self-assessment tool from WP2 (D2.7), a first set of KPI was defined for the "other stakeholders" group as a first step to a coherent development and an inclusion in the FoodE app as envisioned in the Grant Agreement.

A series of workshops was also organised between a member of the Stakeholder Board (UMR Ladyss) and an NGO (Profession Banlieue) during summer 2022 for stakeholders on social issues in urban areas on the thematic of UA but which also debated more generally on UA and food network (see Appendix 2). In these workshops, discussions also took place on what was evaluated by the different stakeholders and their objectives around CRFS. Things that were identified as important to choose UA projects were mostly about social inclusion, physical and mental wellbeing, empowerment of the population and the solidarity that can come out of UA projects and more largely of urban food initiatives. There was also talk about the dependencies on subsidies, on ways to remunerate the projects especially with the incentive of creating food planning by local authorities and including CRFS in it. The fact that different local authorities have different opinions and as such will use different criteria or give more weights to some was discussed. The difficulties they identified were the fact that most projects are evaluated on a short term basis for selection whereas the work needs to be more long term, leave more freedom to the inhabitants and associations and also that the different means of sponsoring projects (as identified in the diagnosis of uses see above) circumscribe what can be sponsored and leave less freedom to create innovative projects that could be more encompassing that just UA or just answering to economic or productive objectives as set by the sponsors. Answering to these calls to get funding also is seen as being a new job in itself with some stakeholders not able to do this when all their energy goes in the main objective of the NGO. This is seen as an indicator of trustiness of the projects for the sponsors

This shows the pertinence of the fourth dimension identified in the diagnosis about the credibility of the project leader and the indicators we found to measure it. The three pillars and their criteria and indicators developed for project owners/members were thus kept as such but a fourth category was added including 11 new criteria specifically tailored for the other stakeholders based on the diagnosis of uses but also on the questions raised during the workshops (Table 4). We thus added 11 new criteria to the set developed for project managers/owners. They pertain to different dimension: external sustainability (Ability to integrate into the neighbourhood, Contribution to the inclusion of vulnerable populations, Complementarity with the rural farms of the area, Fostering of social ties, Contribution to heritage preservation, In line with the strategy of the sponsor), internal sustainability (Ethical staff management, Land tenure risk management), credibility of the project leader (Management of regulatory aspects, Credibility of the project leader / Robustness of the project's governance) and innovation (Innovative nature of the project/Participation in the evolution of knowledge).

Table 5. KPI of the evaluation tool for the other stakeholders (sponsors, experts, associations…)

Pillar	Theme	KPI
Economic	Organization profitability and outlook	Annual net profit margin
		Income diversification
		Business future
	Local economic development	Provenance of employees
		Locally sourced supply
		Suppliers' practices
	Customer and users	Customers/users acquisition
		Customers/users return
		Customer/user expenditure
		Customers/users return reason
		Online selling
Social	Job (quantity, quality, diversity)	Waged jobs
		Contract typology
		Aver. gross monthly salary
		Workplace Trainings
		Gender balance
	Community outreach, engagement & education	Frequency of events
		Disadvantaged people
		Connection with local producers
		Volunteering activities
	Food quality	Product characteristics
Environmental	Food production/supply	Technology used for crops
		Animal fed provenance
		Fishing Gear types
		Ancient cultivar or local breed
		Characteristics of the products
	Resource use efficiency	Water saving practices
		Electricity sources
		Heating sources
	Waste management and circularity	Waste recycling
		Sustainability commitment
		Packaging and materials recyclability and compostability
		Packaging and materials reusability
	Transport	Distance from clients/customers
		Type of transport to clients/customers
		Type of transport of supplies
Other	Ability to integrate into the neighbourhood	
	Contribution to the inclusion of vulnerable populations	
	Complementarity with the rural farms of the area	
	Fostering of social ties	
	Contribution to heritage preservation	
	In line with the strategy of the sponsor	
	Ethical staff management	
	Land tenure risk management	
	Management of regulatory aspects	
	Innovative nature of the project/Participation in the evolution of knowledge	
	Credibility of the project leader / Robustness of the project's governance	

The work done on this part and the benchmarking has shown the need for designing a specific tool to assess the sustainability of PIUA. However, the study has shown that there is a diversity of applications and uses, which implies the need for flexibility of the tool. In our case, the three groups of case studies identified confirmed a diversity of assessment practices (using more or less criteria and indicators, focusing on different sustainability themes) and suggest a diversity of uses for the assessment tool to be designed. The development of this tool has begun in the PhD work of Paola Clerino with a first design for a tool in French as can be seen in the figures below (English translation of the figures was provided to facilitate the comprehension but for the time being the tool has been developed in French).

This work has begun on the UA project but further work based on the completion of the benchmarking presented in the introduction by including the identified references on food systems will enable us to add if needed the indicators' and criteria's grids for other initiatives in CRFS taking into account that the idea of the tool is also to allow users to freely add their own indicators depending on the kind of uses they envision (Figure 4). Enabling the users to also choose different kinds of output will give them more room to adapt the tool to their needs (Figure 5). The KPI sets developed during the WP2, WP3 and T5.2 will be included as helpful suggestions for beginners and as checklist for more savvy users.

As for the fact that our work on the diagnosis of uses and for the workshop is based on our experience in France, the adaptability of the tool and the creation of a set of KPI also based on the work of WP2 will enable us to take into account the other European countries. The survey of T5.3, by opening, the expertise to a more international context will also be of help in perfecting our set of KPIs.

Figure 4. Starting screen of the online assessment tool for French users. Choosing the application between the five identified uses.

		FUNCTIONS			
		Leisure	Education		Urban planning
CRITERIA	Organisation of workshops	i1	i1	i2	
	Reducing the urban heat island				i3
	Opening the site to the public	i4	i4	i5	
	Rehabilitation of a neglected area				i6

		PROJECT 1			PROJECT 2			PROJECT 3		
CRITERIA	Organisation of workshops	i1	i2		i1	i2		i1	i2	
	Reducing the urban heat island	i3			i3			i3		
	Opening the site to the public	i4	i5	i6	i4	i5	i6	i4	i5	i6
	Rehabilitation of a neglected area	i7			i7			i7		

Figure 4. Examples of output from the online assessment tool giving coloured scoring for the indicators by function of the CRFSI or enabling a comparison of projects.

The indicator code could be given as a letter + number and the colour code give an easy indication of sustainability, red for low, green for high sustainability with different gradations between. The scores of the indicators depend on the indicators chosen by the users and his own choice of threshold in some cases. Indicators can be quantitative or qualitative

This development of the tool will continue in 2023 as part of T5.3.

5 Online survey and indicators validation

Another output of T5.2 is the laying the foundation for T5.3 Multi-user online survey tool, with the implementation of a survey on all three simplified sets of indicators by external stakeholders: one for project manager/owners, one for consumers/users and one for the others (sponsors, experts, public authorities, associations…). This survey was sent through the general Assembly of FoodE and various networks to evaluate the ease of measurement, comprehensibility and usefulness of the different KPI developed (see Appendix 3 for the survey website content). The objective of this survey is to improve our set of simplified indicators in order to implement a better tool in the FoodE app.
This survey began in July 2022 and will stay open until the end of the year so that T5.3 can analyse its results and include, if necessary, changes to the three sets of KPI presented here and implement in the FoodE app.

6 Conclusions

The report presents the third set of KPI developed for other CRFS stakeholders, in addition to pilot owners and users. Building on the simplified assessment tool developed in the WP2 and the user evaluation tool developed in the FoodE app in WP3, existing tools were explored and an in-depth study of the French urban agriculture (UA) context was performed, including literature review, case studies and participative workshops. The outcome is a third set of indicators to be included in the survey online tool, which was presented at the end of the work, and will be further developed within T5.3 to ensure validity of the KPI sets for each group of stakeholders. Further work will ensure that the indicators can easily be adapted to all kinds of CRFSI and all European countries. This will be a part of the work done in T5.3.
The present work reflects the complementarity with previous works (T2.3, T2.4 and T3.3), by expanding the perspective previously adopted towards a third category of CRFS stakeholders, and implementing it into the FoodE app, to improve inclusiveness and ensure consistency throughout the project.
The participatory approach adopted and applied for co-developing the three sets of KPI allowed to identify and select indicators which are more effective and useful from a practitioner standpoint. Besides, the variety of data considered, including both qualitative and quantitative, enriched the discussion towards a comprehensive framework for the KPI sets, which was supported by expert knowledge and context-based knowledge. The methodological coherence between the different sets

of KPI was also reflected in the results on the final KPI set, enabling its effective inclusion within the FoodE app.
This report sets the ground for the future work to be further developed within T5.3 for the definition of a final set of indicators and the creation of a multi-user tool, ensuring wider participation, inclusion and representativeness of all the different CRFS stakeholders' categories.
In sum, with the three sets of indicators first, and the multi-user tool that will be finalized in D5.3 second, it will be possible to assess advancements of performance in CRFSI on the sustainability triple bottom line.

References

Alberti M.A., Blanco I., Vox G., Da Silva L.P., Schettini E. (2020) Proposal of a set of indicators for sustainability evaluation of food production in an urban context. **WIT Transactions on Ecology and the Environment** 243: 97-108. Doi 10.2495/UA200091

Altman L, Barry L, Barry M, et al (2014) Five Borough Farm II: Growing the benefits of urban agriculture in New York City, Design Trust for Public Space. **New York** (N.Y.)

Benis K., Ferrão P (2017) Potential mitigation of the environmental impacts of food systems through urban and peri-urban agriculture (UPA) – a life cycle assessment approach. **Journal of Cleaner Production** 140 : 784-795 doi : 10.1016/j.jclepro.2016.05.176

Bagstad K.J., Shammin M.R. (2012) Can the Genuine Progress Indicator better inform sustainable regional progress? - A case study for Northeast Ohio. **Ecological Indicators** 18 : 330-341, doi : 10.1016/j.ecolind.2011.11.026

Cerf M, Jeuffroy M-H, Prost L, Meynard J-M (2012) Participatory design of agricultural decision support tools: taking account of the use situations. **Agron Sustain Dev** 32:899–910. https://doi.org/10.1007/s13593-012-0091-z

FADEAR (2013) Agriculture paysanne - Les outils de l'Agriculture Paysanne. http://www.agriculturepaysanne.org/les-outils-de-l-agriculture-paysanne. Accessed 26 Jan 2022

Ilieva R, Cohen N, Israel M, et al (2021) The socio-cultural benefits of urban agriculture: a scan of the literature. **Society for Urban Ecology, Poznan, Poland,** pp 187–189

Mougeot, L. J. (2000). Urban Agriculture: Definition, Presence, Potentials and Risks. Growing Cities, Growing Food: Urban Agriculture on the Policy Agenda, 1, 42.

Scerri A, James P (2010) Accounting for sustainability: combining qualitative and quantitative research in developing 'indicators' of sustainability. **Int J Soc Res Methodol** 13:41–53. https://doi.org/10.1080/13645570902864145

Schans JW van der, Renting H, Veenhuizen RV (2014) Innovations in urban agriculture. Urban Agric Mag 3–12

Stone, TF; Thompson, JR; Rosentrater, KA; Nair, A (2021) A Life Cycle Assessment Approach for Vegetables in Large-, Mid-, and Small-Scale Food Systems in the Midwest US. **Sustainability** 13(20), doi: 10.3390/su132011368

Zahm F, Ugaglia AA, Barbier J-M, Boureau H (2018) Evaluating sustainability of farms: introducing a new conceptual framework based on three dimensions and five key properties relating to the sustainability of agriculture. The IDEA method version 4. **Chania, Greece**

Appendix 1. List of indicators identified in the 19 case studies of PIUA in France

Supplementary Material - Database of indicators

Manuscript "Stakeholder's practices for the sustainability assessment of professional urban agriculture reveal numerous original criteria and indicators"
Authors : Paola Clerino, Agnès Fargue-Lelièvre, Jean-Marc Meynard
N° ASDE-D-22-00097

This file presents the full list of indicators recorded in case studies to assess the sustainability of Professional Intra-Urban Agriculture projects (some indicators are similar between case studies). The original list is in French, a translation in English has been done
Each indicator is related to a sustainability criterion, a sustainability theme and dimension.
Indicators have been identified during interviews of stakeholders or within documents

Case Study	qualitative/ quantitative	Sustainability dimensions	Sustainability themes	Sustainability sub-themes	Sustainability criteria	Sustainability indicators
CS1	qualitative	internal	consistency and economic robustness	economic viability	cost control	Ability to support the operating costs of rooftop greenhouses
CS1	qualitative	credibility of the project leader	adequacy of the project leader's profile	x	project leader's motivation	Project owner willing to move to live near the project
CS1	qualitative	external	contribution to local sustainability	contribution to the inclusion of vulnerable populations	suitable activities proposed on the farm	Involvement of people hosted by an association helping homeless people in the farm's activities
CS2	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	Project integrated into the district's urban renewal policy
CS2	qualitative	external	contribution to global sustainability	protection of the environment	preservation of biodiversity	Identified funding

CS2	qualitative	innovation	originality	x	project involving an innovation	Presence of an environmental innovation
CS2	qualitative	external	contribution to global sustainability	practices linked to circular economy	recycling and waste recovery	Presence of social and service innovation
CS2	qualitative	external	contribution to global sustainability	practices linked to circular economy	monitoring and limiting of resource consumption	Governance and steering of the dedicated project
CS3	qualitative	external	contribution to local sustainability	ability to integrate into the neighbourhood	accessibility of the farm	Opening of the site to the public
CS3	qualitative	internal	consistency and economic robustness	robustness of the financing plan	aid and subsidies obtained or expected	Use of grants (from the city or other)
CS3	qualitative	innovation	participation in the evolution of knowledge	x	ability to disseminate new knowledge	Opening the site to visitors
CS3	qualitative	innovation	participation in the evolution of knowledge	x	replicability of the project	Financial independence
CS3	qualitative	innovation	participation in the evolution of knowledge	x	replicability of the project	Technical independence
CS3	quantitative	external	contribution to local sustainability	contribution to access to quality local food	local consumption and affordability of products	Share of distribution sold locally and share exported
CS3	quantitative	external	contribution to local sustainability	contribution to local development	job creation	Number of jobs created
CS3	qualitative	external	contribution to local sustainability	contribution to local development	connection with local actors	Involvement of local actors
CS3	quantitative	internal	coherence and technical robustness	ethical staff management	limitation of arduous work	Estimated working time

CS3	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	Setting up equipment or facilities dedicated to reception, training and education
CS3	quantitative	internal	consistency and economic robustness	economic viability	cost control	Evaluation of charges
CS3	quantitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Production volume
CS3	qualitative	external	contribution to local sustainability	contribution to access to quality local food	sanitary quality of the produce	Sanitary quality of products ensured by pollution control and prevention measures
CS3	qualitative	credibility of the project leader	adequacy of the project leader's profile	x	quality and consistency of references of the project leader's team and partners	Specific training of the project leader in permaculture
CS3	qualitative	credibility of the project leader	adequacy of the project leader's profile	x	relevant skills of the project leader	Professional experience in market gardening and permaculture
CS3	qualitative	credibility of the project leader	adequacy of the project leader's profile	x	relevant skills of the project leader	Training of the project leader in the agricultural field and market gardening in particular
CS4	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Solid, detailed and sustainable business model (revenue streams)
CS4	qualitative	external	contribution to local sustainability	contribution to local development	connection with local actors	Involvement of local actors
CS4	quantitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Amortization of the works over the term of the concession

CS4	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	taking into account necessary works	Plan and supervise the works to be amortized over the duration of the concession
CS5	qualitative	external	contribution to local sustainability	ability to integrate into the neighbourhood	accessibility of the farm	Opening of the site to the public
CS5	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	adaptation of the project to a rooftop location	Free access to technical installations on the roof
CS5	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	adaptation of the project to a rooftop location	Circulation between vegetated areas possible
CS5	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	adaptation of the project to a rooftop location	Consideration of stream and downspout access
CS5	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Amount of expected revenue
CS5	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Responding to political will
CS5	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	Presence of changing rooms and sanitary facilities for employees
CS5	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Details of funding sources
CS5	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount and distribution of capital	Composition of the share capital
CS5	quantitative	internal	consistency and economic robustness	robustness of the financing plan	amount and distribution of capital	Amount of share capital
CS5	quantitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Expected productivity

CS5	qualitative	external	contribution to global sustainability	protection of the environment	preservation of biodiversity	Promotion of regional plants from Ile-de-France
CS5	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	taking into account necessary works	Plan, supervise and finance the works to be amortised over the life of the concession
CS5	qualitative	innovation	originality	x	project involving an innovation	Use of innovative materials, especially from recycling
CS5	qualitative	external	contribution to global sustainability	practices linked to circular economy	recycling an waste recovery	Use of innovative materials, especially from recycling
CS6	qualitative	external	contribution to global sustainability	participation in environmental and food education	hosting of school groups	Free workshops for schools
CS6	qualitative	innovation	participation in the evolution of knowledge	x	ability to disseminate new knowledge	Accessibility of the data generated by the project to research teams, open data
CS6	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Income estimates
CS6	qualitative	external	contribution to local sustainability	contribution to access to quality local food	local consumption and affordability of products	Affordability of the production for the city's inhabitants
CS6	qualitative	external	contribution to local sustainability	contribution to access to quality local food	local consumption and affordability of products	Fruit and vegetables produced and consumed within a 20km radius
CS6	qualitative	external	contribution to local sustainability	contribution to the inclusion of vulnerable populations	creation of vocational rehabilitation jobs	Integration through employment primarily for local residents isolated from the world of work
CS6	qualitative	external	contribution to local sustainability	contribution to local development	job creation	Creation of permanent and seasonal jobs

CS6	qualitative	internal	consistency and economic robustness	economic viability	diversification of income sources multifunctionality	Other expected income
CS6	qualitative	internal	coherence and technical robustness	ethical staff management	sustainability of contracts for the staff	Creation of permanent jobs
CS6	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Responding to political will
CS6	qualitative	external	contribution to local sustainability	contribution to local development	connection with local actors	Involvement of local actors
CS6	qualitative	internal	coherence and technical robustness	ethical staff management	limitation of arduous work	Flexibility in the arrangement of growing containers
CS6	qualitative	internal	coherence and technical robustness	ethical staff management	limitation of arduous work	Occupied spaces have natural lighting
CS6	qualitative	internal	coherence and technical robustness	ethical staff management	limitation of arduous work	Consideration of the difficulty of the work in the organisation (bins at ground level, easy movement in the greenhouse, transport of inputs with a lift)
CS6	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	No use of chemical inputs
CS6	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	Organic farming practices
CS6	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	Setting up equipment or facilities dedicated to reception, training and education
CS6	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	Setting up equipment or facilities dedicated to

						reception, training and education
CS6	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	Presence of storage areas and areas reserved for the operator (freight elevator, cold room, delivery area, laboratory, composting area)
CS6	quantitative	internal	consistency and economic robustness	economic viability	cost control	Labour costs
CS6	quantitative	internal	consistency and economic robustness	economic viability	cost control	Operating costs and profitability of the operation
CS6	qualitative	internal	consistency and economic robustness	economic viability	cost control	Remuneration of the farmer by the city
CS6	qualitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Details of crop successions and associations
CS6	qualitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Nature of production suitable for greenhouse cultivation
CS6	quantitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Expected production levels
CS6	quantitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Operating area
CS6	qualitative	innovation	originality	x	project involving an innovation	Involvement of private actors
CS6	qualitative	innovation	originality	x	project involving an innovation	Presence of a low-tech innovation
CS6	qualitative	external	contribution to local sustainability	contribution to access to quality local food	sanitary quality of the produce	Sanitary quality of products ensured by pollution control and prevention measures

CS6	qualitative	external	contribution to global sustainability	practices linked to circular economy	recycling and waste recovery	Production on a substrate from the circular economy
CS6	qualitative	external	contribution to global sustainability	practices linked to circular economy	monitoring and limiting of resource consumption	Carrying out an LCA to determine the water consumption balance
CS7	qualitative	external	contribution to global sustainability	participation in environmental and food education	hosting of school groups	Reception of pupils during extracurricular school time and during the holidays
CS7	qualitative	external	contribution to local sustainability	contribution to local development	job creation	Creation of permanent jobs
CS7	qualitative	internal	coherence and technical robustness	ethical staff management	sustainability of contracts for the staff	Creation of permanent jobs
CS7	qualitative	external	contribution to global sustainability	participation in environmental and food education	organization of workshops	Conducting workshops on nature and the environment with a science teacher
CS8	qualitative	internal	consistency and economic robustness	robustness of the financing plan	aid and subsidies obtained or expected	Date on which public aid was received
CS8	quantitative	internal	consistency and economic robustness	robustness of the financing plan	aid and subsidies obtained or expected	Amount of public aid received
CS8	qualitative	internal	consistency and economic robustness	robustness of the financing plan	aid and subsidies obtained or expected	Nature of public aid received
CS8	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Turnover year y
CS8	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Turnover year y-1
CS8	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Amount of net income year y

CS8	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Amount of net income year y-1
CS8	quantitative	internal	consistency and economic robustness	economic viability	cost control	Amount of external expenditure
CS8	quantitative	internal	consistency and economic robustness	economic viability	cost control	Amount of external expenditure
CS8	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Proposed 50% top-up funding
CS8	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Fundraising phase underway
CS8	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Presence of fundraising since the last closing of accounts
CS8	quantitative	internal	consistency and economic robustness	robustness of the financing plan	amount and distribution of capital	Amount of equity in year y
CS8	quantitative	internal	consistency and economic robustness	robustness of the financing plan	amount and distribution of capital	Amount of equity in year y-1
CS8	quantitative	internal	consistency and economic robustness	robustness of the financing plan	amount and distribution of capital	Amount of share capital
CS8	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount and distribution of capital	Distribution of share capital
CS8	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount and distribution of capital	Distribution of share capital
CS9	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Possible links with the sponsor's activities

CS9	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Respond to the sponsor's priority areas of activity
CS9	qualitative	internal	consistency and economic robustness	economic viability	cost control	Presentation of a detailed budget forecast
CS9	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Presence of co-funders
CS9	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Presentation of a detailed budget forecast
CS10	qualitative	external	contribution to local sustainability	ability to integrate into the neighbourhood	accessibility of the farm	Opening of the site to the public
CS10	qualitative	internal	consistency and economic robustness	robustness of the financing plan	aid and subsidies obtained or expected	No grant applications required
CS10	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Expected turnover over several years
CS10	qualitative	external	contribution to local sustainability	contribution to access to quality local food	local consumption and affordability of products	Local sale of production
CS10	qualitative	external	contribution to global sustainability	bringing consumers and producers closer together	contact between growers and consumers	Direct sales practice
CS10	qualitative	external	contribution to local sustainability	contribution to local development	connection with local actors	Project implemented by local actors
CS10	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	No use of phytosanitary products
CS10	quantitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Sufficient cash flow to pay inheritance costs

CS10	qualitative	external	contribution to global sustainability	contribution to heritage preservation	perpetuation of the agricultural use of the land	Growing in the open ground
CS10	qualitative	external	contribution to global sustainability	contribution to heritage preservation	preservation of old buildings	Rehabilitation of an old building
CS10	qualitative	external	contribution to local sustainability	contribution to access to quality local food	sanitary quality of the produce	Sanitary quality of products ensured by pollution control and prevention measures
CS10	qualitative	internal	consistency and economic robustness	economic viability	robustness of the marketing plan	Details of the proposed sales policy
CS10	qualitative	internal	consistency and economic robustness	economic viability	robustness of the marketing plan	Details of the items marketed and the product range
CS11	quantitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Produce 4-5 tons per year of aromatic plants
CS11	qualitative	external	contribution to global sustainability	bringing consumers and producers closer together	visible production process	Transparent indoor farmhouse walls
CS11	qualitative	credibility of the project leader	adequacy of the project leader's profile	x	quality and consistency of references of the project leader's team and partners	Previous experiences between the lessor and the project developer
CS11	quantitative	internal	consistency and economic robustness	economic viability	robustness of the marketing plan	Reasonable selling price compared to equivalent products
CS11	quantitative	internal	consistency and economic robustness	economic viability	robustness of the marketing plan	Profitability close to that of the usual suppliers
CS11	qualitative	external	contribution to global sustainability	practices linked to circular economy	monitoring and limiting of resource consumption	Production at the point of sale (supermarket)
CS12	qualitative	external	contribution to global sustainability	participation in environmental and food education	hosting of school groups	Educational activities implemented (school reception team building)

CS13	qualitative	innovation	participation in the evolution of knowledge	x	ability to generate new knowledge	Accessibility of the data generated by the project: opening to research centres, open data
CS13	quantitative	innovation	participation in the evolution of knowledge	x	replicability of the project	Depreciable project on a construction operation
CS13	qualitative	innovation	participation in the evolution of knowledge	x	replicability of the project	Project does not require external funding
CS13	qualitative	internal	consistency and economic robustness	economic viability	diversification of income sources multifunctionality	Diversification of income sources
CS13	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Responding to political will
CS13	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	Dedicated technical room for the operator
CS13	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	On-site accommodation for the operator
CS13	qualitative	internal	coherence and technical robustness	adaptation to the characteristics of the site	essential premises planned	Setting up equipment or facilities dedicated to reception, training and education
CS13	quantitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Minimised investment requirements
CS13	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Project does not require external funding

CS13	qualitative	innovation	originality	x	project involving an innovation	Not too high-tech project
CS13	qualitative	internal	consistency and economic robustness	economic viability	robustness of the marketing plan	Planned production opportunities
CS14	qualitative	external	contribution to local sustainability	contribution to local development	improvement of locals' living environment	Securing abandoned car parks
CS14	qualitative	external	contribution to local sustainability	contribution to local development	contribution to the attractiveness of the neighbourhood	Project carried by a private economic actor
CS14	qualitative	internal	management of regulatory aspects	x	management of the appraisal processes and authorizations	Identification and consideration of the process of instruction of the various administrative authorisations and regulations
CS14	qualitative	external	contribution to the sustainability of the sponsor	x	economic added value for the sponsor	Project enabling the sponsor to have additional sources of income
CS14	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Responding to political will
CS14	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	Measures taken to limit pollution
CS14	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	No use of phytosanitary products
CS14	qualitative	external	contribution to global sustainability	protection of the environment	preservation of biodiversity	Promotion of regional plants from Ile-de-France
CS14	qualitative	external	contribution to global sustainability	protection of the environment	preservation of biodiversity	Establishment of ecologically functional spaces to promote ecological continuity

CS14	qualitative	innovation	originality	x	project involving an innovation	Use of innovative materials, especially from recycling
CS14	qualitative	external	contribution to global sustainability	practices linked to circular economy	recycling and waste recovery	Use of innovative materials, especially from recycling
CS14	qualitative	internal	management of regulatory aspects	x	compliance with UA regulations	Registration of the company in the CFE of the Chambers of Agriculture
CS14	qualitative	internal	management of regulatory aspects	x	compliance with UA regulations	Registration of the project leader with the agricultural social security (MSA)
CS14	qualitative	internal	management of regulatory aspects	x	compliance with UA regulations	Obtaining the authorisation to operate
CS14	qualitative	credibility of the project leader	robustness of the project's governance	x	role and responsibilities of the team and partners	Clearly established roles for the project leader's partners
CS15	qualitative	internal	management of regulatory aspects	x	management of the appraisal processes and authorizations	Identification and consideration of the process of instruction of the various administrative authorisations and regulations
CS15	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Responding to political will
CS15	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	Measures taken to limit pollution
CS15	qualitative	external	contribution to global sustainability	protection of the environment	limiting soil and water pollution	No use of phytosanitary products
CS15	qualitative	external	contribution to global sustainability	protection of the environment	preservation of biodiversity	Promotion of regional plants from Ile-de-France

CS15	qualitative	external	contribution to global sustainability	protection of the environment	preservation of biodiversity	Establishment of ecologically functional spaces to promote ecological continuity
CS15	qualitative	innovation	originality	x	project involving an innovation	Use of innovative materials, especially from recycling
CS15	qualitative	external	contribution to global sustainability	practices linked to circular economy	recycling and waste recovery	Use of innovative materials, especially from recycling
CS15	qualitative	internal	management of regulatory aspects	x	compliance with UA regulations	Registration of the company in the CFE of the Chambers of Agriculture
CS15	qualitative	internal	management of regulatory aspects	x	compliance with urban agriculture regulations	Registration of the project leader with the agricultural social security (MSA)
CS15	qualitative	internal	management of regulatory aspects	x	compliance with UA regulations	Obtaining the authorisation to operate
CS15	qualitative	credibility of the project leader	robustness of the project's governance	x	role and responsibilities of the team and partners	Clearly established roles for the project leader's partners
CS16	qualitative	external	contribution to local sustainability	ability to integrate into the neighbourhood	accessibility of the farm	Opening of the site to the public
CS16	quantitative	internal	consistency and economic robustness	economic viability	turnover and expected results	Income estimates
CS16	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	responding to political will
CS16	qualitative	external	contribution to local sustainability	contribution to local development	connection with local actors	Project implemented by local actors

CS16	quantitative	internal	consistency and economic robustness	economic viability	cost control	Evaluation of charges
CS16	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Identification of funding needs
CS16	qualitative	innovation	originality	x	novelty of the project	No high-tech projects
CS16	qualitative	internal	coherence and technical robustness	realistic nature of technical proposals	realistic cropping systems and yields	Details of activities and cultures
CS16	qualitative	credibility of the project leader	adequacy of the project leader's profile	x	quality and consistency of references of the project leader's team and partners	Projects carried out by mature actors
CS16	qualitative	credibility of the project leader	adequacy of the project leader's profile	x	relevant skills of the project leader	Projects carried out by large private companies
CS16	qualitative	internal	consistency and economic robustness	economic viability	robustness of the marketing plan	Details of target audiences
CS17	qualitative	external	contribution to local sustainability	ability to integrate into the neighbourhood	take-up of the project by locals	Activities involving the inhabitants
CS17	qualitative	internal	consistency and economic robustness	economic viability	diversification of income sources multifunctionality	Paid green space management services
CS17	qualitative	external	contribution to local sustainability	contribution to access to quality local food	sanitary quality of the produce	Sanitary quality of products ensured by pollution control and prevention measures
CS18	qualitative	internal	consistency and economic robustness	robustness of the financing plan	aid and subsidies obtained or expected	No subsidies needed in the long term
CS18	qualitative	external	contribution to local sustainability	contribution to local development	improvement of locals' living environment	Creation of green spaces

CS18	qualitative	external	contribution to local sustainability	ability to integrate into the neighbourhood	take-up of the project by locals	Testing and validation of the farm's activities by the inhabitants
CS18	qualitative	credibility of the project leader	robustness of the project's governance	x	composition of the project leader's team and partners	Public/private partnership
CS18	qualitative	internal	coherence and technical robustness	land risk management	capacity to move to another location, mobile facilities	Mobile, relocatable facilities
CS18	qualitative	external	contribution to the sustainability of the sponsor	x	integration of the project into the sponsor strategy	Project integrated into the district's urban renewal policy
CS18	qualitative	internal	consistency and economic robustness	robustness of the financing plan	amount of investments compared to financing capacity	Identified funding
CS18	qualitative	external	contribution to global sustainability	participation in environmental and food education	organization of workshops	Activities involving residents
CS18	qualitative	innovation	originality	x	project involving an innovation	Presence of an environmental innovation
CS18	qualitative	innovation	originality	x	project involving an innovation	Presence of social and service innovation
CS18	qualitative	credibility of the project leader	robustness of the project's governance	x	role and responsibilities of the team and partners	Governance and steering of the dedicated project

Appendix 2. Transcription of the thematic workshops on urban agriculture and working-class neighbourhoods with highlights on points of interest for T5.2

THEMATIC WORKSHOPS

URBAN AGRICULTURE AND WORKING-CLASS NEIGHBOURHOODS.
CYCLE OF VISITS: HOW TO ACCOMPANY URBAN AGRICULTURE PROJECTS AS STAKEHOLDERS OF URBAN SOCIAL DEVELOPMENT?

Partenariat Ladyss (Umr 7533) – Profession Banlieue

TRANSTRIPTIONS TRANSLATED TO ENGLISH July-November 2022

Transcription by Suzie Bernard (Université Paris 8)
Translation by Ana Márquez Barrenechea (Wageningen University & Research / ISARA-Lyon)

1. HALAGE – May 17th 2022

PRESENTATION – SOIL POLLUTION

Ségolène Darly: Now we're going to move on to another part of the morning, which was based on the visits and we thought it would be good to take a little time to frame the issue of soil pollution and urban agriculture on polluted soils, so we invited Anne Barbillon, who is a specialist in the issue with all the work she's done with the AgroParisTech urban agriculture team. We both just wanted to say a few words before going into the question of soil pollution and highly polluted soils to reiterate that we necessarily focus a lot on these soils because there are very important issues linked to this pollution, for plants, for health, but that doesn't mean that all the soils which are available today in the working-class areas are polluted soils. In fact, as I said earlier, there are municipalities in Seine-Saint-Denis where up to 40, 50, 70% of the soil is not built on. All these soils were not the sites of ultra-polluting factories, they are soils that can record pollution, but quite classically like all urban soils, i.e., atmospheric pollution from the time when there was still lead in the petrol of cars. These soils will have a signature - pedologists talk about a pedological signature, i.e. what the soil has recorded from its history - and what often challenges many is what it has recorded in terms of pollution. But in fact, these soils may also have recorded many other things that are much less problematic and which, on the contrary, are much more beneficial. There are many researchers who have worked on the quality of urban soils, and they have shown two things:

The first is that they are extremely heterogeneous. It's still very difficult to say that an urban soil's signature is that. So, for soil scientists it's a bit destabilising because they're used to making a category, a characteristic. Here it's characterised by great heterogeneity.

But what they also say is that cultivated urban soil - which has been used for a long time in gardening, for production, etc. - has a particular signature that is somewhat linked to pollution, linked to industrial activity, but really the signature of garden soil is a high level of organic matter. Organic matter is reintroduced into the soil, and it has higher organic matter levels than, for example, agricultural soils or lawns. This is something that we can show statistically. And why? These are soils where there have been local inputs, soils that have been scraped rather than ploughed, and that in fact disturbs the soil cycles less. More organic matter is very important for water because in fact organic matter is what allows a soil to capture water in its matrix. These are also soils that have more soil biodiversity. We talked a lot about living soil, and in fact there are many living beings in the soil: the pedo-fauna. It is considered that 25% of the world's biodiversity is in the soil, all the little creatures found there. Garden soils also have a higher level of biodiversity. There are also environmental issues and very positive effects of gardened soils, especially in areas like Seine-Saint-Denis where there has been gardening for a very long time, which are the sites of the golden age of urban agriculture that we were talking about earlier. We inherit all that in the soil. I just wanted to put that at the beginning because now we're going to focus on ultra-polluted soils and what we do with them.

Anne Barbillon: It was a very good transition because I am also used to starting, before getting into the hard part, with the benefits and advantages of soils but also of gardening activities, of urban agriculture because you will see that we are talking about soil pollution but we are also talking about health risks. My idea is to start by giving you a little context to know how we arrived at this subject, what we are talking about when we talk about soil pollution in urban agriculture, what the issues are, etc. Then I'll spend a little time on the research programme that I coordinated for three years under the scientific direction of two researchers: Christine Aubry and Nastaran Manouchehri, one of whom had expertise in urban agriculture, the other a specialist in soil chemistry in particular, and who, surrounded by a very rich consortium, including the ARS, which is represented here, made it possible to think about a

methodology for assessing the risks, for managing these risks, linked to soil pollution. Today, after this research programme - with the REFUGE team - we have published tools: the REFUGE guide and we are increasingly solicited by players in the field, whether they are local authorities, urban farming associations, companies, etc., who ask us to say: there is this methodology but can you help us apply the principles? How do we diagnose our soil? What can we grow on it? And so on. So we created SecurAgri, a structure that is still overseen by AgroParisTech innovation, an innovation that promotes the spillover of research to society. And it's a good thing because our idea was to enhance the value of the research work and to make it a more concrete support tool where we can really provide advice almost - but with a public status - to all the players who need it. But we also maintain a desire to participate in research programmes and to provide training. We organise seminars - like what I do here, but perhaps a bit longer - of one or two days on the issue. That's the context I come from.
My prism, of course, is urban agriculture in all its forms. We, the urban agriculture team, the research team, arrived on the subject when in 2015 there was a study in particular which looked at micro-farms. Before that, there had been the JASSUR programme, a research programme with a section on collective gardens, which already included an understanding of the quality of the soil in allotments and shared gardens. I arrived when we were interested in urban micro-farms with a more professional dimension, a bit like here. Typically, when there is marketing, a company, it is no longer individual gardeners but a commercial activity behind it. We worked on different micro-farms in Ile-de-France and once again in a fairly global programme where we were interested in many aspects: understanding the economic aspect, the different types of activity that can exist in these micro-farms, the functioning and sustainability of these micro-farms. We were able to carry out soil analyses in these areas without necessarily being interested in pollution. We did two types of analysis: agri-analysis, which are parameters that we always look at in agricultural soil (pH, organic matter, limestone content, nutrients) and we added to that the analysis of trace metal elements, the famous metals. These are the best known pollutants today, the best documented, in any case in urban agriculture and also in terms of transfer from the soil to the plant. We realised that in one farm out of two that we had investigated, there were problems of contamination, I'll come back to this term, or at least the presence of metals in abnormally high levels. This gave rise to the idea of creating a programme really focused on pollution. I'm not going to mention other work that preceded all this in other forms. [REFUGE] is the idea of working on other urban micro-farms, on pollution: Risks in Urban Farms, Management, Evaluation, which was conducted between 2016 and 2020.
We started this programme in the field, and following our analyses we realised that the players were quite helpless when faced with the metal levels in their soil and, at the time, they inevitably asked us the question: what do these levels mean? We knew that metals are naturally present in soils but in small quantities and we went to look for comparison values, thresholds, instinctively we said to ourselves: are there any regulations? And in fact we started from the observation that there were no regulations governing the quality of the soil in terms of pollution that would simply allow us to say that we can cultivate or not. Faced with the absence of regulations, we took a look at the way polluted soils are managed in France, we were inspired by the national methodology of polluted sites and soils, but which is still constructed for sites with industrial problems, to simplify, in any case problems that were not necessarily linked to our agricultural zones. We don't have the same approach in agricultural areas as in very dense urban sites, in large development or industrial projects, and so the idea was to find a balance between what is done in the rural environment - in fact, there is little and instinctively it's a bit normal, we have no idea that the soils are polluted, fortunately, in the rural environment - and the urban environment where the awareness, notably in the industrial environment, was already present. The questions we were asked were:

- What are the health risks for users?
- Are there risks of polluted vegetables, what are we risking?
- How can we manage them? We were on sites that had existed for some years, sometimes for almost 10-15 years, and this discovery was a source of anxiety for the actors.

We selected three farms and we went to define a method with them, which I will present to you later. I myself am a bit confused between these two terms, but it is interesting to define now what we call "contamination" and "pollution". The difference between these two terms seems important to me. Contamination is basically the presence of pollutants in the soil at levels higher than what is supposed to be found in normal situations. We talk about pollution when these abnormally high levels present a risk to human health and/or the environment. The subtlety is that in some cases, contaminated soil will be polluted and present a risk, but in other cases it is 'just' contaminated and for certain uses it will not present a health risk. We necessarily play on these terms to say that not all urban soils are polluted, it's true, but it's still a problem that we regularly encounter. Not all soils are contaminated, in any case, they are frequently contaminated, but the question arises: when does a risk arise and what is put in place to manage and control these risks?

We're going to review the management methods that are often used on a case-by-case basis because we're going to diagnose each site and move forward step by step to try to find a way to characterise this contamination and then assess the risks to propose management measures. The types of pollutants found in soils, we talked a lot about organic pollutants and metals and it's logical, these are the two families of pollutants in urban agriculture that we will systematically look at. Metals is a common term, but the scientific term is trace metal elements (TMEs) and the main ones, those often found in any case in the urban soils of Ile-de-France and specifically in garden or cultivated soils, are lead, mercury, copper, zinc and cadmium. In this case, we have two trace elements, copper and zinc, which are useful for organisms (plants and humans) but from a certain dose they can become problematic and toxic, whereas lead, cadmium and mercury are not useful elements, they are necessarily additional pollutants with more important toxicity problems. So much for the main metallic trace elements, we also sometimes have arsenic which comes back and which can be problematic, but in Ile-de-France, in our gardens, we find a little less than lead which is, honestly, the most problematic pollutant. There are also organic pollutants, organic because they are molecules composed of carbon chains with improbable names that I'm not necessarily going to mention. I can't help but mention polycyclic aromatic hydrocarbons, PAHs, which are pollutants that we will systematically look at, whatever the history. You will see that the history is really important. I'm not going to go into detail, but in any case it's to tell you that these are two families of pollutants that we encounter and it's not surprising. The most frequent problems we have in our experience are those of metals with background noise from organic pollutants. Perhaps we can quickly go back to where these pollutants, these contaminants, come from? I have already told you that metals can be found naturally in soils, the majority of organic pollutants are rather pollutants resulting from human activity. Theoretically, in a natural soil, they are not supposed to be found, but in fact we are starting to talk about background noise, particularly with PAHs, because with human activity over the centuries, they have been found in the soil. They can be produced by fires and we can imagine that there are natural sources that could also pollute with organic pollutants like these. There is this more or less natural presence, background noise. Then, instinctively, we think of cars and exhaust pipes in the city, all types of transport, urban heating, industrial activity of course, but also have been backfilling: earth movements ant the fact that for a long time very little was done to trace earth movements. We can therefore find soils whose origin we don't know, which we don't like very much, but we often come across them. It will be very difficult to know where the contamination comes from, for example, we may have soil from an old building site piled up in certain

places and which is of poor quality. One last point which is, unfortunately, the other side of a practice which interests us a lot and which for a lot of positive reasons is a bit the example of the circular economy, we are talking about the market gardeners of the 19th century but there was a very widespread practice since the 19th century which was to collect the waste of the city before the sewerage system and the market gardeners collected this material to feed the fields. It then became a more industrial practice to use wastewater and purification plant sludge, which remains a virtuous practice and approach, to feed and enrich the soil. But what we didn't realise until recently was that there was also a risk of polluting the soil by bringing in materials that came from the city in the 19th century, with a lot of industrial activity, uncontrolled use of certain pollutants, which meant that they were concentrated in these materials and which we find in some of our farms installed on formerly agricultural land. It's very frustrating to thing that there is pollution due to agricultural or gardening practices.

I'm just going to tell you in a few words what the risks are, once we've understood the different types of pollutants in the soil that we can encounter, and where they come from. Now, of course, we zoom in on the risks to human health. In fact, when we talk about risk, we are talking, to simplify, about the danger once exposure has occurred. The danger would be the presence of the pollutant at a certain level and the exposure is: will I be exposed once a year because I go to the plot or every day because I put my hands on the soil, I eat a lot of vegetables from the pot, etc.? The health risk will be proportional to these two things and to the same. In the approach, we are really interested in the uses to try to adapt the management measures to these risks. We don't stop at the concentration in the soil, we go a little further to try to manage and to see if it is possible, in certain cases, to make do with it rather than systematically excavating and adding topsoil. The three routes of exposure we're looking at are the ingestion routes: oral, respiratory and skin. The oral route is what I call soil or plant ingestion. Instinctively, we think of the risk of ingesting plants that have grown on polluted soils and that they will be impacted because they have drawn the pollutants from the soil though their roots, though the re-spray of dust or, moreover, though atmospheric deposition when we are in areas close to a road or activity. That's what we necessarily have in mind, now there's the risk that we have less in mind but which is just as important to take into account, and that is that when we make our estimates the risk comes as much or sometimes more from the fact of ingesting dust or grains of soil in a more often unintentional way. IN urban agriculture this is particularly present, we have different types of public that we bring to handle the soil etc. we have young children. Children are often the so-called sensitive population, along with pregnant women. We have to think about this too and take into account the risk linked to exposure to the soil. Soil can also be inhaled, dust or certain pollutants can be inhaled and here we are talking about the respiratory tract. And finally, the cutaneous route is mentioned, but it is difficult to evaluate in the tools we have to evaluate the risks. Perhaps in a few years' time, we will realise that we need to take into account this rout of transfer via the skin, in addition to the rest. You can see that I'm really getting into the swing of things, but fortunately there was the introduction (laughs). The idea is to give you a brief overview of the subject and the finish with the measures we can take to deal with all this.

Perhaps now, that we've finished the context, we can talk about the method, the approach that we defined within the framework of the REfUGE programme, which is already a research programme supported by the institutions, ParisTech, INRAE. We also had the ADEME, which supported us financially and technically in the project, and the Ile-de-France region. It took on a dimension that allowed us to thin and to take the time to investigate our three pilot micro-farms, which are the Ferme du bonheur in Nanterres, la ferme Moultoux in Montreuil in the old Murs à Pêches and the ferme ouverte de Saint-Denis, which some of you may know. The famous approach is a bit like a classic risk analysis approach:

assessment, management, communication. We transformed this into 1 risk characterisation, 2 management measures and the implementation of a sanitary control plan and communication, we are not communicators so we talk about the transfer of expertise, to make it scientific, but behind this we think about the same thing: how to communicate to different audiences, whether they are elected representatives, technical services, associations or even passers-by. 3 stages, the 2 characterisation and the management are a bit linear, communication is necessarily at all stages that we have to think about. To come back to stage 1 of the assessment, the famous REFUGE guide, this tool responds to this stage of soil characterisation and risk assessment. I'm just going to go over the different points that are covered in this guide. Basically, the guide is intended for local authorities, but I think it can also be useful for other actors who ask themselves the question: I have a wasteland, I would like to grow crops on it, how do I make sure that the soils is of good enough quality to accommodate crops and inhabitants. To do this, we proposed four steps that are inspired by the national methodology for polluted sites and soils, but which try to adapt it to this urban agriculture context. We always start by looking at the history of the land by making a historical study of the uses and the environment. We talk about the history, the activities that may have taken place on the site, which could have polluted it. In the surrounding area, we're also looking at what could have impacted the quality of the soil and we're also going to look from an environmental point of view to see if there is any water linked to the site, wo we're broadening our focus from the soil to the environment. So this historical study will allow us say that we have such and such a suspicion, we will, a priori, look for such and such a pollutant. We move on to stage 2 where we take soil samples and there's a whole reflection on the sampling strategy: do we zone it? We'll try to define sampling zones according to what is growing, the visual state of the soil, uses, etc. Then we'll look at the depth of the soil we're taking: are we staying on the surface? Do we have several horizons? Etc. We define the pollutants that we want to analyse, based on a historical study with our systematic park to which we will add pollutants if we really have the idea that such and such an activity may have added this pollutant All this is thought out, we take samples of the soil, send them to the laboratory, and then we go on step 3 of interpreting analyses, the results of the analyses that come back. We have an in-house laboratory, we work internally but sometimes we can also work with external laboratories. Here, we are on a wasteland where nothing grows, but when we arrive on land where things grow, I'll go back to our three micro-farms of the REFUGE programme, the interest is that we were able to test this approach and moreover we took samples of plants, vegetables of different varieties to specify the diagnosis by having a real idea of what the pollutant was in the plants. When we don't have that, we can model that passes, what is transferred from the soil to the plants. Modelling means uncertainty and the risk is to have models that, as a precaution, maximise what can be found in plants. Once we have our results, the interpretation stage, as we don't have a regulatory value, is less simple than initially thought. But here, we have defined comparison values that allow us to say: we are in non-polluted soil; we are in polluted soil where the contamination is reasonable, so it is possible to grow crops provided that we check by precaution in the first few years that the vegetables are healthy and we have values that tell us to be careful, we don't stop everything immediately but we go to step 4, the last step, the risk assessment. Here, we apply a tool called quantitative health risk assessment where we inject all the data we have collected in the field: concentrations and usage data. We will define user models: the urban farmer who comes X times a week to the plot, who puts his hands in the soil, who eats X percent of the vegetables from the plot, and we will be able to use all the data to calculate the risk and find out if the risk is acceptable or not. We can do the same thing for children, which allows us to have an idea of the levels and to be able to say, from there, we will take management measures. And to finish, I'm just going to go over the types of management measures that we have in mind in these cases. Depending on our results, we will see if we can make the risk acceptable by implementing

measures of if we really need to take more drastic measures to eliminate the pollution all together. There are different families fo measures. First of all, the pollution measures, the ones we think about the most and which are not necessarily the ones we are going to take straight away. I won't go back to the string decontamination measures, which require engineering by chemical or physical means and where often the soil has to be excavated and sent to a treatment centre, which is what we want to avoid. We just think that there are unfortunately some rather extreme cases, like the greenhouse, where we had to excavate and remove this pollution, but in some cases we can also talk about soft solution, phytoremediation. There is phyto-extraction, where the soil is cleaned up by plants, or phyto-stabilisation, where we try to stabilise the pollutants in fact to fix them with plants so that they don't wander off into the air or water, etc. and a third form, phyto-remediation, where we try to degradate the pollutants by using plants; This is not possible for metals, which are present a priori, unless they are extracted, but they cannot be degraded in the soil, so one approach for organic pollutants would be to try to degrade them while taking care not to create more toxic chains. It's complex, but there are avenues to explore this area. A small point on phyto-extraction, it's a very attractive method, but in reality there are still many pragmatic limits in the sense that it takes a long time. It can sometimes take hundreds of years to clean up a soil properly if we really want to reach a clean level and what do we do with the plants that are loaded with pollutants? You have to extract them and send them somewhere, and that can cost money. You have to think about it, these are blocking elements in the field, but we'll come back t them if there are other questions.

I'll move on to the measures that are not so much depollution measures as measures to eliminate one or more of the exposure routes that I mentioned earlier. The most telling here is to grow non-food crops on polluted soil. So, we sill check beforehand that putting our hands in the soil is still ok, growing flowers is not systematically a solution. There are soils that are so contaminated, even polluted, that we even want to do off-ground cultivation, and there are even some where grass is problematic: off-ground cultivation is not a systematic solution either. I'm talking about this, fortunately there are plenty of cases where it's a solution, but there are some sensitive cases and that's why you always have to go to the end of the process to be sure that the soil is not extremely polluted. Non-food culture in the soil in place, in some cases it works, the proof; off-ground container culture, it's a way of eliminating the pathway but still growing vegetables; we can decide to make certain areas safe by phyto-stabilising for example and by orientating towards another use (biodiversity, etc.) when we are lucky enough to have large spaces. This can be a solution when you have different areas and some of them are more or less polluted. We can also confine by covering the polluted soil with soil, for example which is a variant of excavation and soil input. But, for example, we can use technosoils, which remain a somewhat virtuous system. Similarly, it has to be adapted to different soil contexts where it can sometimes work, and of course, the technosoils' experimental track is part of this.

Finally, the third family of management measures, which I wanted to present to you here, is that of reducing exposure, we are no longer trying to "eliminate" one of the routes but we want to reduce the routes – vegetables or soil – and therefore we have the food hygiene practices that we will recommend each time we are on polluted soil. In some cases, cultivation is possible but we say, at the very least, think about communicating on hand washing, wearing gloves, hygiene of the premises, of the workers, always having a wash basing within reach, etc. Good food practices, washing vegetables that are grown in urban areas and even peeling some vegetables when possible. Other measures can be to target cultivation towards products that do not accumulate pollutants to a great extent, because not all vegetables accumulate pollutants in the same wat. And finally, it requires more thought, but we can think about types of amendments that can reduce the transfer from the soil to the plant by playing on

the agronomic properties of the soil, or again, I've put the crop back into the soilless container because the fact that you don't have to put your hands in the soil any more reduces the risk of soil ingestion.
This is a range of management measures, and we propose a sanitary control plan that brings together there measures for professional structures that facilitate the application of these measures on the farms.
I'll finish on this point, communication, as you will have understood, is one of the issues. We also need to think about how to make the measures on the farms sustainable, to communicate them well, in a way that is a transparent as possible and sustainable over time.

DISCUSSION – SOIL POLLUTION

Stakeholder 1: I had a first question, here when we visited we were told that they were doing everything aboveground, but from what I understood we don't really know the thresholds and is there a threshold classification where we know that we can cultivate and consume, but there we can't, it didn't seem as clear in your presentation to know.
A.B.: No, in fact the method that really allows us to know until the end what can be done or not is the risk assessment, it's the last step where typically we'll do an off-ground cultivation scenario, we'll run our calculations, and then we'll see a priori if the risk is acceptable, we can go ahead, by applying the measures that go with it.
Stakeholder 1: These are preventive measures, in other words, we say to ourselves that we don't really know anything about them, but we're done out of the ground to be safe
A.B.: No, if we go all the way and carry out the risk assessment, we have a method, which is itself based on uncertainty, but it's the method we have today. If we see that the risk is acceptable, that means that it is possible to grow crops above ground on this land, we have reached the end of the approach that we could have.
Stakeholder 2: For a small business that has a small wasteland and wants to set up an agricultural space: who does it turn to measure its soil? If they don't have the means, is there an agency that measures or does it cost money? Basically, is it a big cost?
A.B.: Yes, that's the problem, it's expensive.
Stakeholder 2: Because when you talk about a working-class neighbourhood and there is the cost involved…
A.B.: We always try to find the balance between scientific rigour, you see, and the method that we propose, which is still consistent even if it simplifies a consistent method. There are consultancies which exist and which carry out this type of study but which are often quite expensive. We created SécurAgri to find a way of adapting the method even more to the field, but I's true that there is still a cost.
Stakeholder 2: In some cases, since we sometimes clear a small area, we'll do off-grid work for the children, etc., but because we don't have the means to really check. We got in touch with small experts and, in fact, when we cleared the land, it grew back, and the plants that grew back indicate that there is pollution. You can get indications from what grows on the ground.
A.B.: The frustration with this is that it shows us that the pollutant is perhaps there but we don't know at what level and you see the whole process is to say that at certain levels the use starts to be problematic.
Stakeholder 2: That's why we're looking at off-ground.
Stakeholder 3: I don't know when, but you said that if you put a tarpaulin and unpolluted soil, rather than doing it completely above ground, it's false above ground. Is that a technique that could work?
A.B.: Sometimes these are recommendations that can be made effectively. So, before bringing in soil, we isolate it with what we call geotextile and yes, this is a way of limiting pollution and ensuring that the roots of the plants don't go underneath. And it limits the risk linked to ingestion of the soil because the above ground, as I was saying, is a bit frustrating, but we must also watch out because children, for

example you children, typically, even if they don't eat vegetables, will walk around on the ground. It's not systematic, but if the soil is really heavily impacted, just the fact of working, playing with the blades of grass… and sucking on the stones, for very small children, can be problematic. The best thing is to have an idea of the quality of the soil and to see what's going on inside. But the geotextile and the addition of soil is a recommendation that we may have to make sometimes.
Stakeholder 4: We know that it has a cost, there are structures that can support, neighbourhood associations, that is to say, that don't have big budgets, we say we have to test the soil, it has a cost – I don't know how much it costs – is there any funding, any structures that can help finance this?
A.B.: I'm thinking of several, notably ADEME, you need a project behind it, you need to build a file, it's a subsidy request, but ADEME supports soil diagnosis work, even depollution etc. in a specific framework. There is also the ANRU within the framework of the Quartier Fertile project, which also allows financial support for projects like that, so yes, there are structures that can support and it's good that it's taken in hand by the state in a certain way.
Stakeholder 5: Do we have a level of knowledge about the quality of the soil in the different layers, let's say, in relation to the soil above and especially with the plants, do we have a wide enough spectrum to know now if I put this type of plant for example, obviously a carrot will absorb more than a fruit… is this defined or is it still to be seen?
A.B.: On vegetables, we have knowledge, in any case mainly for metallic trace elements, we are able to say, we remain by type of vegetable and not on the scale of the variety either, but we are able to say that this is the cost of fruit vegetables which generally accumulate less pollutants than leafy vegetables, roots, herbs. As for covered soils, the question of what we know is what they're doing over there, there are experiments going on today. What's precious is to have ten years or so ahead of us to be able to carry out analyses every year and see how things evolve, because, of course, there are risks, the earthworms, the soil inhabitants will continue to work, there may be soil mixtures, and there are many questions that cab ne monitored. But afterwards, if we have fairly stabilised soils, the metals are not very mobile, so it can still have a positive impact.
Stakeholder 6: I had a question about the state of research, are there any cohort follow-up to try to understand the impact of gardening on polluted soil on the health of gardeners, really to get to the bottom of it, because we know that children are a sensitive group, so the question is always very sensitive, but there you go.
A.B.: I turn to Flore from the ARS.
Flore – ARS: Yes, no, I don't know any large-scale studies like that on this subject. We're working more on pollutant by pollutant basis, so we'll have studies on lead and children for example, those are very well known, but studies on the health of gardeners, consumers in gardens… in fact, fortunately, environmental pollution is quite low and it can also give, unfortunately, such a wide variety of pathologies that it would be difficult to make the link between such as pathology and the state of the soil at the start. So we really need huge cohorts.
Stakeholder 6: And even on lead in children, is it really about lead in children exposed to the garden, exposed to garden soil or is it lead in children's bodies?
Flore – ARS: It has not been studied like that but, in fact, we have managed to assess the maximum quantity of lead in the soil that could lead to a lead endemic in the blood.
A.B.: and in this reflection I thought that it would also be interesting to quantify the risks of gardening in contaminated soil but to weigh this up with the health benefits, the other aspect, the positive health of the garden, the fact that we do physical activity, that we eat vegetables which from a nutritional point of view are good. If we could combine these two notions, we might be able to show more really

interesting things, precisely in this aspect of not just zooming in on the problems but also seeing all the benefits of gardening.
Flore – ARS: We are indeed trying, we are currently financing a study to show all the benefits on health, but public health in the broad sense. It's going to be health in terms of social integration, physical well-being, mental well-being, morale, but I don't think we're going to be able to quantify it, but qualitatively, yes.
A.B.: Maybe this is next step.
Stakeholder 7: Indeed, I'm just going back to what you were saying. If we say to ourselves that urban agriculture could produce 10% to 15% of our food, but that today a lot of land is forbidden, I'm thinking of the Parisculteurs where there is a lot of soil that is said to be polluted and where we are forbidden to grow vegetables, for me, a lot out of prevention, and I understand that, and at the same time, we are not going to eat 100% of these vegetables, we may not work on them a lot… So I think that this also shows down the phenomenon of urban agriculture. In my opinion, are we being too preventive on these issues or not?
A.B.: My impression is that the more you immerse yourself in this field, the more you understand its complexity and, above all, the zone of uncertainty. And when you understand the area of uncertainty, it's true that it's not easy to say. I'm going to put my cursor there. Faced with all this, we inevitably think about the responsibilities behind it and the extent to which it can take place, and so we are obliged to be precautionary in the face of uncertainty, but to develop methods that are reasonably precautionary…
Flore – ARS: It's true that we can say to ourselves that it's painful not to have simple thresholds in the soil: above it I can cultivate, below it I can't cultivate because there thresholds would necessarily be very precautionary to prevent all the risks. That's why we have this case-by-case approach, we're going to really take the characteristics of the soil, the type of crop that will be grown, the time that people will spend on the land to avoid prohibiting as little as possible…But it's true that despite that, it's tainted with uncertainty and I think that the feedback will show that there were many times when we were too careful, but it was with the scientific tools of the moment and with time, probably, that we'll realise that we can…
Stakeholder 7: Is this something we can try to review then?
Flore – ARS: It goes on from year to year… as scientific knowledge evolves.
Stakeholder 2: I had a question, is there a policy today to encourage urban agriculture, a national policy, because for example I come from Bagnolet (municipality) where we're in the inner suburbs again, with a lot of possibilities, etc. The land, I don't see it particularly, and when there are also strong issues about housing, about land. I don't particularly see land, and when there is land, it's more like buildings that grow, housing, there are a lot of housing applicants, there are also strong stakes on housing, on the possible land and that is somewhat in balance with – that could be in balance in any case – with an incentive to develop urban agriculture.
A.L: There is no national policy for the development of urban agriculture as such, but you have, for example, the ANRU's Quartier Fertile programme, as Ségolène mentioned earlier.
S.D: This is the only one that exists.
A.L: Indeed, the Quartier Fertile call for projects ended when Stéphanie left, Stéphanie Cayat who is in charge of the ANRU and who works on this programme. The programme ended a few months ago. There were three successive calls for projects, but it was the only national programme whose aim was – and this is the ANRU's terminology – to promote urban agriculture in the districts, since they were political districts.

S.D: Which was partly financed by the recovery plan via the Ministry of Agriculture, which had a conjunction, but in my opinion, this is the only truly national policy.
Stakeholder 2: My real question is in fact between a community that is strangled by debts, by schools, by a lot of things and that there is land, let's say available, and on which it can make revenue, in what ways, inverted commas, does the state – because on the policy of the city we don't talk about millions of euros per municipality, we talk about thousands of euros – sanctuary a space, a wasteland in a city that is strangled and that it is not a dead end. It doesn't exist yet.
A.L: Afterwards, you have cities that encourage and provide themselves with tools to effectively reserve spaces in the PLU, etc. We will come back to the question of land because it will be the subject of the third session in June. Today, for example, the PLU of Paris in 2016 very clearly earmarked potential spaces to preserve them in the end and to do urban agriculture, so there is really progress.
Stakeholder 7: We're talking about a rich commune.
A.L: We're talking about a rich commune, yes, that's for sure and it's true.
Stakeholder 7: Stains does not have the same means.

A.L: We agree, but it's true that today, we've just talked about ANRU, there are no other policies as such and it's more of a case-by-case approach with the local authorities who are caught up in the imperative, effectively, to build, so land and this remains a rather significant issue for the moment.
Stakeholder 2: On the other hand, what I've noticed in the territories, I'm from Bagnolet, Montreuil, I know a little bit about it, is that there is a development of micro-projects on participative gardens, shared gardens, trying to identify possible micro-spaces, etc., that's for sure, and with the landlords too. And this is developing more and more. It see a multitude of micro-projects.
A.L: This may be the subject of another debate, but it's no longer the time, in fact, but a debate on what we assign to urban agriculture as a role: do we want ultra-productive urban agriculture with important technologies to be able to get out of the vegetable business, because that's the question, or do we want urban agriculture to be thought of from a social angle, and therefore shared gardens, gardens at the foot of buildings, etc.? In addition, we know that there is a significant land reserve on the side of the social landlords, so there is also that in terms of land which should be thought about. My personal opinion, and this is my own and it's very subjective, is that I'm not convinced that urban agriculture has a productive vocation is more social, perhaps for self-production, for food self-determination, and we can probably talk more about this in the 4th session. But there is also this destination which means that from the moment we think of urban agriculture not in a productive form, we do not necessarily need excessive space, so the question of land arises in another way which should perhaps be taken into consideration in relation to the projects that we want to set up in urban agriculture.
S.D: But I think that if we go back to the very long history of urban agriculture, in fact, at the beginning it wasn't national policy to develop agriculture in the city, it was really civil society, private production actors who developed production activities in synergy with the city, working-class bosses who developed gardens, aid organisations who developed… and which then found the support of municipalities and then afterwards they defended themselves, they passes a bill but it was passed in the 70s and 80s. So in relation to the history of urban agriculture, the bill to protect gardens came at the end, in fact, at the very end. So in fact the history of urban agriculture is not a history of public policy to support urban production, it is really the history of the energy of the inhabitants, the energy in the territories which took the place where it was, which asked for it, which then structured themselves politically, etc. And I think that we are one of the first countries in the world to be able to do this. And I think that we're a bit, from my point of view, I have the impression that we've gone backwards a bit on this side, i.e. that the urban agriculture ecosystem today is energy from below,

because Parisculteurs came along very late compared to the whole dynamic of shared gardens in Paris, for example. For 10 years there's been Graine de jardin, shared gardens on wasteland, etc. And Parisculteurs, which supports professional activities, came along much later and actually has a rather different policy. In fact, it seems to me that the driving forces of urban agriculture today are not in national policies, on the other hand, as soon as there is a bit of a support policy, it works very well, that's for sure. Parisculteurs works very well, the ANRU worked well, there were a lot of responses. So we can see that as soon as there is support, to answer your question, but it requires a lot of energy, effectively.

2. LAB3S – June 9th 2022

Ségolène Darly: So we had normally planned for an hour and a half for the final sequence which included a short framing period and then the rest for the discussion. We looked at your post-it notes, and in fact there is a whole series of very interesting questions on the participation of inhabitants, on raising awareness among children, etc. These are themes that we are going to deal with a lot in the next session, so we suggest to keep them and bring them out at that time.
And there is a whole series of questions, I have the impression that there are many questions about production capacities: the agronomic model – almost – of profitability and finally, is it necessary to have a profitable urban agriculture or a social urban agriculture or something which can do both, is it possible etc.? We can feel behind the idea that it can really make quality products accessible. I don't have the answer to all these questions (laughs) but I do have some answers that we can perhaps give. I had prepared just a few elements to frame the debate on the link between food and urban agriculture. It was to come back to this debate is generally posed, on how people eat and why there is urban agriculture and how urban agriculture responds to problems linked to food, etc. I will come back a little bit to some of the questions raised by the debate. I am going to come back a little bit to the framing elements. I'm going to go quickly enough to see if this brings up any thoughts among us. And then, we will try to see if we can collectively answer these questions on production, the link between production and social demand.
We can already try to set out a few elements of the context, beyond just the urban agriculture sites, on the question of food, because there is a much broader context, which is the food and environmental crisis in which we have been immersed, linked to our production methods since, approximately, the 1950s. This is the date when we entered the Anthropocene, namely the entry into the Phagocene, *i.e.* that we are entering a declination of the Anthropocene, which is an era of consumption of the planet. We are moving from inhabiting the planet to consuming it, and our food model today reflects this to some extent. It is very much driven by the logic of the capitalist economy model in which most of the commercial food exchanges take place. And this food model is characterised by the production of surpluses, which are localised but which will materialise in many places on the planet by significant food waste, whereas we have other places where there are food deficits. This way of eating also results in environmental degradation, which is linked to the fact that we consider natural resources as resources to be consumed and not necessarily preserved. And then there is a third translation, which is that the food model will strongly alter the bodies and physiology of consumers. Since the 1960s, we have seen the emergence of a huge number of eating disorders linked to what was known as junk food. Junk food, basically, is highly processed food, saturated with fat and sugar, which in fact causes a whole bunch of reactions in the body, particularly problems of overweight and obesity. So that's the general context. In this context, since 2017, we have also had a parameter that is very worrying, namely the resumption of food insecurity and all the indicators of food insecurity on a global scale, because we were rather in a phase of resorption, polluting but still in a descending phase of food insecurity. Since 2017, this curve has started to rise again and this food insecurity affects both rural areas, peasants in poor countries or shanty towns, but also, increasingly, rich countries and therefore the rate of food insecurity is the same in France and the United States. It's 12% which means millions of people in each of these big countries.
Stakeholder 1: When you say food insecurity, do you mean people not eating enough?
S.D: So there are both, in fact it's also that we eat badly, we can eat less than we'd like and also eat badly, that is to say not eat as we'd like. And these food insecurities will lead to hunger, which is really what we think about, i.e. not having enough to eat, but also to obesity. A very strong link is established

in the trajectory of the food system between the proliferation of industrial foods – which are very rich in calories but very poor in nutrients – and the rather spectacular increase in the obesity rate. So in France, in fact, the increase in the prevalence rate came very late compared to other countries, notably the United States where it's a bit of a model we have in mind. But in fact, since the end of the 1990s and especially the beginning of the 2000s, there has been an explosion in this prevalence rate, which rose from 8 to 14% between 1997 and 2019. So 14% is the average, but in fact, depending on the income or standard of living, for example, rates of 20-30% will be reached in the most working-class sections. These are figures that are of course of great concern, particularly in France, because of the speed of the phenomenon, which arrived more or less like that in the 2000s.
So, in reaction to all these observations, something that was becoming omnipresent in the food and food-related health landscape, a whole narrative was constructed about obesity seen as an epidemic that would be linked essentially to rather irresponsible and lazy behaviour by the poor and minorities, of the type that would eat chips in front of the TV, that could not take the time or energy or the time to think about eating properly. In the end, the prevalence of obesity is the result of excessive individual consumption of junk food, and also the other narrative that is also constructed afterwards is: they are urged to get their act together, to change their diet and to "get moving", in the sense of really moving physically, to exercise. One of the leitmotifs of Michelle Obama's campaign during the Obama term was "let's get moving", "let's get moving" to reduce health problems. These are also the narratives that many educational programmes carry, with the dissemination of knowledge about nutrition and the promotion of physical activity as vectors for the reduction of these problems. So that doesn't mean that it doesn't play a role, the question is not to stop the educational programmes, nor the knowledge of nutrition (laughs) but the idea is that the fact that these stories are also present also diverts our attention from other explanations of why these phenomena persist, particularly in poor neighbourhoods. These other explanations are much more structural elements, much more important than individual behaviour. These structural elements weigh enormously on the margins of manoeuvre of individuals, that's it, it's not necessarily enough to want it or even to know it, you also need the power. In these different structural elements, there is the reinforcement of the functioning of the agro-industrial food system, so agricultural policy and agro-industrial policies are very much targeted, but there is also the mode of urbanisation and the urban environment in which people live. For some researchers in critical economics and critical geography, this will really illustrate the situation in which we find ourselves, namely the observation and the narrative of individualistic solutions. It illustrates how the agents of the rather liberal or capitalist economy will push, on the one hand, for overproduction and overconsumption, and on the other hand, place the responsibility for solving the problems linked to all this on individuals. So, when we are interested in counterbalancing this narrative of individual responsibility, let's take a look at these structural elements, particularly in the urban environment, because if we look at the geography of both junk food, i.e. the places where these over-saturated foods are distributed, and their effects, i.e. where we measure very high rates of obesity, we realise that they are not at all evenly distributed over the territory. Rather, they are unevenly distributed over the territory and often in the same places, it is where there is junk food that there are health problems linked to food, depending on the neighbourhoods, but also according to class, gender, age and racial minority criteria. This leads some researchers to talk about obesogenic neighbourhoods, i.e. neighbourhoods which, in the way they are organised, constrain the lifestyles and reactions of individuals. So we realise that these are neighbourhoods which, on the one hand, do not have too many places to get healthy food (what we call healthy, i.e. organic, fresh, local, or which are also neighbourhoods where there are a few or no places to exercise, not to run a marathon, but just to walk, to go for a walk, to do some sport, to meet each other, and this means that we have neighbourhoods

where these conditions conducive to obesity are concentrated. It's true that we often use the term "food desert", which has been coined in North America because there has been a real collapse of the food supply in many sectors. In France, we have a hard time importing this concept, by we do measure neighbourhoods which are much less equipped than others, without necessarily being deserts, but which are still less equipped, especially the priority neighbourhoods. We know that there are 7 local shops per 1000 inhabitants, whereas elsewhere in France it's 10. What does that mean? It means that to go shopping, to have access to rather healthy, rather better and not too expensive food, you have to make long journeys in rather uncomfortable conditions because these are neighbourhoods where there is not a very large transport network or where you don't necessarily have a car. All of this combines to make or less than ideal conditions.
Stakeholder 1: There is also the typology of shops, of the offer.
S.D: Yes, that's right, it is to say that I've just given a quantitative number, afterwards I think we should go into the details of these local shops, what are they? I think we're going down the scale again. And I'll finish on this point, since it's the point which links with our questions of UA, finally, faced with these constrains, these situations these living conditions, the inhabitants are not passive. In fact, they are not passive either when faced with these food issues. If we look more closely, if we look at what is going on, if we look at the more informal things that happen in the family network, in the network of acquaintances, and therefore not necessarily in a very visible way, we can see the emergence of very ordinary strategies of resistance that are often carried out by women, who are often responsible for household food. We realise the importance of solidarity networks, donations, exchanges of services, exchanges of information which can be very strong in moments of collective work: moments of collectivisation of shopping time when we share a car to go and buy in a supermarket together, for example, and of meal preparation with the question of collective kitchens, but which we can find within a family. We're going to rely on this to reconfigure access to food, particularly with the issue of shared gardens: taking over a plot of land to plant vegetables collectively. But beyond planting vegetables to eat them, it is also the result, when we ask people, of a much broader awareness than the fact of not eating well. It is also the awareness of being in an environment where we suffer from food injustices and environmental injustices that are structural and that, in response to this, we want to improve life in the neighbourhood. This also explains the motivation to make room for urban agricultural gardens and not just to produce a lot of food for everyone, even though this is of course linked to food issues.
So that's my final point and the beginning of an answer to the question that were asked at the beginning, where we ask ourselves questions about production capacities, productive ambition, the conciliation of social objectives and production objectives. What I would like to say is that, generally speaking, in the experiments underway, this is what is being experimented with, how all this is articulated, because this is often what is at the origin of the exercise.
Last point, because Antoine was supposed to talk about it but he's not here, these strategies of resistance and the weight of solidarity networks, it's interesting, we saw them reappear a lot during covid. In particular those who observe or live in working class or priority neighbourhoods saw both the classic networks of solidarity and assistance that were strengthen with regard to food, but also a whole bunch of other family or inter-acquaintance networks that took up a lot of space, that were reactivated to try to find other forms of food than what was distributed in the banks.
Discussion/ debate:
Speaker 2: Just to understand the beginning of the conclusion, in the end, there is a concern to be able to feed the planet, the whole planet, in the next few years, which has triggered dynamics, such as shared gardens, but which, in the end, are not intended to respond to this food problem?
S.D: So I don't think the goal is to feed the whole planet…

Speaker 2: No, because I really understood today's theme in relation to productivity, that is to say, how urban agriculture can respond and I know that there are things that exist but on a much larger scale than shared gardens. This is just to put things in perspective.
S.D: The theme was the link to food, so it's true that we often tend to think that we have to feed such and such quantity of people, so we have to produce so much on such and such an area. There are quite a few studies that have been done now that try to compare what exists, and we know that what is produced today in private or collective gardens contributes very little to the food supply. It's a very punctual contribution, so it's a contribution which, for certain households which invest a lot of work, can be very important on the scale of the household, feeding fruit and vegetables over a large part of the year, and if they're equipped with jars, with conservation stuff, it can even be over the whole year. Then there are studies on the production potential, we say, if there is a crisis, we have to produce in town: do we have the space? And would we be able to feed this population with this space? So these are scenario-based projections. And here, the answers are very different depending on the type of urban environment. Basically, in the centre of Paris, where there is very little space and the roofs are not very suitable, we have very little potential. On the other hand, as soon as we leave the very mineral environments, we arrive in environment where there are grassy areas, there are many private or public gardens, and if we transform all these spaces into productive spaces, if we intensify the work on these spaces to reach levels of productivity which would be higher than the current level of productivity of the trade, then we can hope to achieve a supply of fruit and vegetable which could provide for a large part of the population. So we have these benchmarks today. I think that the question that arises today is also what motivates people to invest time and work in agricultural production and how this is linked to food issues. And depending on how it's linked to food issues, we won't have the same type of project, even if it's linked to the way we eat.
Speaker 3: It is true that in the Seine-Saint-Denis department, it's not possible to imagine that urban agriculture will feed the entire population. In Plaine Commune, in the construction of the urban agriculture strategy, there was a small projection like that to say: if we cultivate all the available spaces for production, it can feed between 10 and 20% of the population, but only in fruit and vegetables, we don't just eat fruit and vegetables, there is everything else. And these were very high estimates without taking into account all the technical characteristics, if we invest all the roofs for example, this kind of thing. And there was an interesting figure from the department's diagnosis…
Speaker 4: But I think that there is also a reflection to exploit the crown. There is land that is more accessible, and there is also a reflection on how to develop fresh produce, transport…
Speaker 3: Yes, there are things that could be improved, but it wouldn't be possible. At the level of the department to feed the whole population, you would need 20 to 50 times the total surface area of the department… And I also wanted to react to what you said about the environment, which is very interesting. To illustrate, perhaps, in the town of Saint-Denis, they had made a small study at the level of a college or a high school, I don't know, they had looked at all the shops around and there were about forty fast-food restaurants. These were the first shops around and there were about forty fast-food restaurants. These were the first shops where young people went to when they left the school, because that's what surrounded the school. I find this very interesting, but I was wondering what levers we could activate in relation to this. Should we go and see the commercial services? (laughs)
S.D: On the commercial offer?
Speaker 3: Yes, on the commercial offer! How do we act on that? Because it's true that putting everything back on individual behaviour has its limits, and then it's how do we act on the rest? It's complicated.
Speaker 2: Perhaps it would be more for awareness-raising associations after all.

Speaker 5: It's more than awareness raising, it should be planning.
S.D: There is the example of Saint-Denis, typically in the city of Saint-Denis, there are networks of cooperative grocery shops and, in fact, they have difficulty at the moment, for example, in finding premises because in fact for it to function it needs a rent, not free, but still almost so that it doesn't weigh on the expenses. That's the kind of initiative we're talking about. But I think that what is interesting is to go and see what exists and in fact there are many things that are done and to try to understand what makes it work, what doesn't work and how we can unblock it.
Speaker 5: It's true that I find the link, for example, to commercial strategy and the installation of shops really interesting. Today, there are a certain number of cities that have commercial planning tools precisely to try to diversify the commercial offer – this is a strong expectation of the inhabitants – generally by means of commercial real estate or this type of thing. We see that, even today, commercial planning is still based, for the elected representatives in particular, on the choices that they want to make, on the somewhat traditional things of the shopping centre, we have the brands that come, big things like that. I think that we also saw, during the lockdown, that it was very striking to have closed the local markets, to have left the big stores. There are choices like that which are made and which do not go in the direction you describe. So we can see that there is a convergence, a convergence of planning rather than awareness, on how we build the city if we really want to achieve this.
Speaker 1: What we also saw was that people often know that what they eat is not necessarily very good, but when there is a kebab shop and a mini-market with frozen food and things like that at the foot of a building, the choice is quickly made and the same goes for cooking time, etc. I think it's a question of supply, but also a question of how to incorporate different preparation times into everyday life, which involve transport times, habits, working hours, etc. It's a really global reflection, and we need to look at the different ways of doing things. It's a really global reflection, it's also important to talk about agriculture, but it's much broader in fact.
S.D: Yes, I think the idea is to say that when we start talking about food in a shared garden or in an urban agriculture experiment, we're going to talk about many other things than production factors and productivity levels, which are of course important, and there is a vegetable grower here, because we have to – if we set ourselves objectives – achieve them. But in the end, this will lead to a whole series of other issues such as the commercial offer, working hours, and this raises the question of how to deal with these issues: do we refer them to other areas? I don't know.
Speaker 6: But in the end, as Vincent said, it has a lot to do with political choices, priorities, but also with the economy, because for them a shopping centre is more profitable from an economic point of view, so in the short and medium term it is more interesting. There is also the whole lobbying aspect. Politicians are trying to move in that direction, but the passage between theory and action, frankly, there is a huge threshold.
Speaker 7: If we come back to the approach of access to land, have you, in Profession Banlieue for example, noticed that ANRU 2 has made more room, not only for housing, concrete, but also – at one time there were allotments etc. – so to also put this dimension of gardens, shared spaces. Has there been an evolution on this?
S.D: I can't answer for Profession Banlieue (laughs) but there's the "Quartier fertile" appeal. This was a call within the framework of the recovery plan and had a very particular orientation since it was supported in part by the Ministry of Agriculture, which said that this call would have mass effect on professional agriculture.
Speaker 7: Which is interesting, but we don't really see an overall strategy. It just came about.
S.D: Yes, because what we see is that landlord by landlord, in all the cities, the people I talk to, there are land takeover as the foot of buildings, inhabitants who first take over a strip of land, then another,

and who go to see their landlord and try to sign an agreement in order to have land security. But as a result, it's still not part of an overall policy, it's piecemeal. On the other hand, the landlords like it because it allows them to maintain the green space, to keep a kind of social watch on the outside spaces. Potentially it can be deployed in green spaces, but it's not linked to a policy.
Speaker 4: But in a general way, I think that the subject of urban agriculture and ecological transition is going up everywhere anyway. So, the remain, for the most part, on somewhat ultra-local projects with are not intended to have a leverage effect on a huge territory. Nevertheless, with all the resource centres in France, what we see is that in all the territories to envisage the next contractualisation of the urban policy, the ANRU, all the urban renovation, etc., it seems obvious to everyone that the transitions of the territories are going to integrate the urban policy, which was not really the case today. I think it's through effects like that, and the ANRU is becoming a bit strong (as a leverage effect), I don't really know how long it will take but we can see that there is a movement anyway. I found this story about shops interesting, they're trying to contact all the shops departments in the cities to ask them this question and they don't answer. For the moment, it's not in the culture to see collaboration on these elements. Ten years ago, we only talked about shared gardens maintained by others. Today, we're starting to use wastelands much more, at least to do something with them for a while, and then finally we see wastelands that are perpetuated because we realise the contribution that they can generate, both from a social point of view in a neighbourhood and from a food point of view. We talk about collective kitchens, these are projects that have existed for a long time, but today we see concrete results or means put on the table to try to achieve them that did not exist a few years ago. So it's slow going, but I still think we can hope that a movement has been set up.
Speaker 5: And it's true that within the framework of the ANRU, whether it's via the ANRU + club or via other things, there are some reflections that are carried out. There are changes. There are several urban agriculture project managers within the agency – it's a bit of a pity because they couldn't come today – and I think that there is really a much stronger mobilisation than there was, even if it lacks a global strategy plan. It's still an emerging issue, and the land question in Île-de-France is particularly complex, and we'll try to tackle it in a little more detail at the next visit which will take place at George Valbon. I think that even on the side of the social landlords, as Ségolène said, there are real reflections on these subjects and much more than before, there is a real change, and that's what we feel.
S.D: What is certain is that the IAU, the Paris-Region Institute, does its census of gardens by comparing, it seems to me, 2018 and 2014 (well on two dates over a recent period). They measure an increase in the number of shared gardens, the number of allotment gardens is more or less stable, it hasn't increased much, but on the other hand it's the number of shared gardens that is increasing, with slightly smaller surfaces, but so there is still a phenomenon of diffusion. But, on the other hand, I think that we are not making much progress with the laws on land protection. The allotment gardens are protected by a law of the rural code but since the 80's even 90's, there have been several attempts to widen the protection perimeter to other types of gardens that the allotment gardens, typically to include the shared gardens. It stopped at the Senate stage and has never been reopened. So we can also do political lobbying to bring out this bill which aimed, in fact, to legalise the term "shared gardens" in the whole nomenclature of collective gardens to give them the legal protection they lack.
Speaker 3: But then, perhaps we're falling into the theme of a future workshop on participation, but for example, when we talk about land, having a space that can be made available but which, either the inhabitants are very interested – that's not always the case – and so we can leave a piece of it fallow, that can be one of the options, so that it remains like that, a bit of wasteland; or on the other hand, having an stakeholder whose job it is to produce, to make a garden or an agricultural land, in between. There isn't necessarily just one model and there isn't just one way of presenting it. As a result of having

the support of the person who owns the land, how do we ensure that this space will remain either productive or in activity? I think that for us it is an important issue to convince someone to make something available.
Speaker 5: Afterwards, we also come back to the question of planning documents and really to the questions of urban planning and pure development and negotiations that are also political negotiations. I think that in the end, the means of preserving agricultural plots is to make them agricultural and non-buildable in the urban planning documents and to ensure that this is respected.
S.D: So on the agricultural rows, in fact, they are reserved for professionals because the approval of exploitation is given to professionals, so the question of shared gardens is not how to secure them on the ground, for the moment it is often precarious agreements.
Speaker 7: Perhaps it's also a question of the evolution of urban jobs, perhaps the job of urban farmer is taking shape, which also means that it would be borne by the community, it's an additional expense, we already know how difficult it is for farmers to live, I don't think they can live from it here.
S.D: No, clearly the examples that exist, the profession of urban farmer is very old but it had disappeared, but let's say that those who are really coming back to the city centre, we have a little bit of hindsight, but it's true that when we discuss food production with them, we come back to the question of what is produced, who can be fed, it's not just a question of the quantity to be produced but also how much does it cost to produce it? And in fact it's expensive to produce it in the city because you have to have access to land, you have to buy water, you have to pay the labour, etc. So in fact, just selling fruit is not enough. Just selling fruit and vegetables doesn't make it possible to make a living from farming unless you sell them at a very high price. Those who manage to sell fruit and vegetables are the ones who make baskets on the roofs of the Opera or honey in Paris, or saffron, and who sell things at a very high price, who themselves admit that this is not going to feed – and even less the planet – but not even the people who need it in fact. That's the first model, then there are other models which we'll find more in the Seine-Saint-Denis are and which will develop both production and training and educational services. That's what we'll see at the next meeting, Urban Shepherds are in fact two urban farmers who are paid and clearly their economic model is essentially based on services, private services. But every time we talk about specificities of urban agriculture, it's precisely to say that it's an agriculture that provides many more services than just producing fruit and vegetables. It's true that we're talking about food, so we're thinking a lot about fruit and vegetables, but it's also about environmental services, social services, reducing environmental justice, etc. And so it's very important service. And so this is a cost in fact, if we provide services that cost us money, at some point who pays for them? We have either private services or public subsidies, because if we provide a service to the community, the community assumes this cost. It often assumes it by paying for the services: often school visits, centre visits, it's less expensive but it's still a bit of a charge. So I've never really seen a subsidy like the CAP subsidies for farmers. But in French law, there are what are called payments for environmental services, which make payments to farmers, not for what they produce, but for the effects of their agricultural activities.
Speaker 8: On the land part, we are a member of AFAUP, the French association of professional urban agriculture, and just yesterday they sent us an email saying that the new ministry, which is called the Ministry of Agriculture and Food Sovereignty, is opening a consultation on the rental offers proposed to urban agriculture players with a view to revising the rural code to protect agricultural areas. So things are moving, they have been structured around the actors of urban agriculture and we will see what happens, bit in any case…
S.D: Yes, for two or three years now there has been a lot of lobbying from both the rural and urban worlds to think about a new land law, precisely to think about the land axis. I don't know what they've

planned for urban land, bit it will undoubtedly affect it, but if AFAUP takes part in it, they will carry the torch (laughs), but with this question in mind: the AFAUP is professional agriculture, which means that even if the AFAUP's members include integration structures which will provide services such as setting up gardens, it still defends the idea of developing the professional dimension of the activity. This, in turn, raises the question of collective domestic activity versus professional activity.

3. BERGERS URBAINS – June 25th 2022

S.D: We asked Giulia Giacché to give us a short introduction to launch the discussion, to come back to the different forms of agreement, land contractualisation that exists today, that is to say, how we deal with the different regulations, both urban and rural, around land. So Giulia is part of the urban agriculture team of AgroParisTech, she works with Christine and she runs EXP'AU, perhaps you can tell us what it is.
G.G: This is an urban agriculture research-expertise office that was created in 2015 by Christine Aubry to respond to the growing demands of local authorities and private structures that wanted to set up urban agriculture projects but did not really know how to go about it. And so this structure was created to support them and had two main missions: one was to support them in a territorial diagnosis mission to understand which forms of urban agriculture were more or less relevant according to the characteristics of the territories and there was a section a focus, on the quality of the soils, the contamination of the soils, which later expanded. The Secur'agri platform was then created, and I think you must have met Anne Barbillon who deals with this issues.
S.D: Yes, it was the session at Île-Saint-Denis, not everyone was there, but there was Anne Barbillon who presented her work.
G.G: Indeed, we have capitalised on all these experiences of accompaniment in the form of a guide which will soon be available online, which can be downloaded free of charge, and which is called Meth EXP'AU. I will pass on the links to you, perhaps to Ségolène who can distribute it. The idea is really to encourage the local authorities, but also the landlords, to make a diagnosis on the scale of the site but also of the district to see, effectively, what the conditions are for setting up an urban agriculture project, because as we have seen very well today, we must take into account both the site, the space, and therefore the characteristics, the qualities... You can't give a project leader the use of a space which is enclosed, which is not shaded, where there are different traffic problems and think that urban agriculture can solve all that. That's not it. You have to think about giving spaces that are suitable for projects. The idea is really to give, in the form of a guide, the keys to understanding, to make this analysis on the scale of the sites but also of the districts, to see what the functions are, what the social demands are and how the project can answer them.
Here, in the post-it notes, I saw that there were questions about the size, whether there was a correspondence between the size of the plots and the urban farming actions. We tried to give orders of magnitude based on different feedbacks and visits to different projects and project leaders. Afterwards, we have to take them with a pinch of salt, it's just to guide us in our choices, but it's important to take into account the demands of the future users of the community and to co-construct with the future project leader. We tried to give some elements. For example, if we talk about collective gardens, we have allotments, allotments, for example, or shared gardens. Of course a shared garden can be set up on a smaller area, even I have seen shared gardens on a 30-50 m2. On the other hand, for the allotment gardens, it is a plot in the allotment garden which is 50m2. So we can see that there are more or less, depending on the size, orientations that can be followed and correspondences between the size of the plot and the forms of urban agriculture. So when we talk about land for urban agriculture in the city, there are not only spaces on the ground, there are roof terraces, car parks, other types of space that can be invested by urban agriculture and, for example, there are guides that have come out, I will send, perhaps a small list of guides, a source of commentary, to Ségolène, to which you can refer to understand whether your space or the space that you have in mind is suitable for this project. For example, for roofing, there is the ADIVET guide, there is another guide that was made by Fanny Provent and Paul Aumonier, notably on how to make a diagnosis of a terrace roof and see what the characteristics are. For soils, in particular the question of soil quality is essential, and so Anne Barbillon and other people took part in the production of the REFUGE guide, but for community gardens there is also an ARS guide which has just been published, so there are several sources to which you can

refer, but, in fact, these sources of commentary are a bit scattered. It is difficult, perhaps, to find them because they are different themes: soil pollution, the characteristics of a roof and a central theme that we are discussing today, contractualisation. In relation to how to give access to this land, what forms of contractualisation there can be between the landowner and the project owner. There is already an interesting documentary source, which is the legal information sheets of the AFAUP, the French association of professional urban agriculture, which is a small document of about fifteen pages which lists the main contracts which are set up between the land holders and a project leader in urban agriculture. It highlights the advantages and disadvantages for the tenants and for the project leaders, so it is rather interesting. But we can see that there are not necessarily already pre-established forms of contractualisation for the different forms of urban agriculture. What are the criteria that can guide us in the choice of contractualisation? First of all, it is the nature of the land, whether it is in the public domain or in the private domain of a community, it is not the same thing. In a public domain, we can set up contracts that are precarious and revocable, but in the private domain, we can set up, for example, a rural lease that has a duration of 9 years. In the nature of the land, this already determines a first typology of contractualisation that can be made, and another thing that can determine this choice is also the form of agriculture that we have, because in certain cases, the difficulty of urban agriculture is that the different forms of urban agriculture are not necessarily regulated by the law. We do not have a definition, except for the allotment gardens which are regulated by the rural code where it is a provision to an association as indicated in the rural code and if they are expropriated, they can't appeal to have an equivalent plot. The local authority and the SAFER can pre-empt the land so that they can make an equivalent plot available. Studies have also been carried out in the framework of the JASSUR project, which show that local authorities tend to set up shared gardens, which do not have this legal status, rather than allotments, which are more restrictive. But at the same time, we know that there is a movement of shared gardens and integration gardens which are fighting to acquire the same rights. There is a pressure, there was already a law proposal in 2002 and 2003 from these gardens to acquire the same protections and rights as the allotment gardens. So there is a tendency to move towards recognition and sometimes local authorities will have rather flexible contracts which can be revoked because there is a question of temporality and the provision of land. The city of Paris, for example, within the framework of the Parisculteurs, makes agreements available which are often 12 years, and 12 years is also the same duration of the local urban plan, they ask for a fee of 10 euros per 50m2, which is more or less stabilised like that. But then the French Association of Professional Urban Agriculture is working on the clauses to be included in the contract, because often the project holder, there are some who manage to assert their rights well, others less so, so there is also all this work that this association is doing with the lawyers to protect the rights of urban farmers. As we were reminded earlier, it's a pity that sometimes we set up, we invest time, energy too perhaps sometimes, in the soil, in fertility, and then we are asked to leave because we are using a space that provides services. So I will close by referring to another question that was asked: how can be measure ecosystem services and positive externalities? That's not easy. I took part in a research project on the evaluation of ecosystem services provided by urban micro-farms. So there are several ecosystem services: regulation, socio-cultural, etc. I worked mainly on the regulation of the environment. I worked mainly on the socio-cultural part, especially the learning, leisure, creative and landscape services. And there, the complexity is to collect the data from the project leaders, because, already, they do not have only that to do, sometimes it is complicated, even if there is not an entry ticket to the events or how much of percentage they have participated. The data are a bit fragmented, it's complicated to collect them and, above all, the other complexity is to evaluate them, because I know that an urban farm on the roofs, and educational farm on a school building that welcomes pupils and families from time to time, and next to it I have a farm that does events and that welcomes maybe 2000 people at once: how can we evaluate this objective and how can we compare them? This is also a work in progress, the evaluation; to see if it is the ecosystem services or other indicators that could be interesting and above all to see

the relevance and to put it in the light of the diversity of the forms of urban agriculture and their context. I think that it is important, I think that everyone need to evaluate the impacts – there are questions that have been asked in this sense – but then, perhaps, so beyond the quantitative and see the qualitative and what it changes: does it change the living environment, involvement, commitment, etc.?
S.D: Thank you very much Giulia, so now we're going to move on to a sequence of questions and discussions. We were thinking that there could be questions that Giulia could answer, but also that sometimes, in the room, we have the answers collectively, so if there are questions that emerge, everyone can feel free to answer them, and not only the organisers can and must answer.
G.G: There's still one question I haven't answered, about the time it takes to set up a project, which is very variable because it's linked to the community. In particular, we often go through competitions, the communities often make land available through calls for applications, calls for expressions of interest, calls for projects, so there is this whole preliminary process of evaluation of the land, of diagnosis, then of competition and then the selection, the installation, so it can be from 9 months to 1 year sometimes. Afterwards, the important thing, which we encourage, is to take into account certain obstacles or blockages that we have, such as access to water, access to electricity, the types of contracts - so first of all find out: are we in the public domain, private domain? - Collect all the necessary information to be able to set up the contract. We have to work on it beforehand so that we can then set it up. And then you have to take into account the seasonality, especially if you're doing market gardening in the ground - because it depends on the type of urban agriculture, you have to take into account the season to install someone. You can set him up in August but maybe he won't have a job right away... so there will also be the temporality of the seasons. I don't know if Antoine would like to add to this...
A.L : On this point, not particularly, but to take up what Ségolène was saying, the idea of the discussion is to come back to the theme of the day, land and everything we saw this morning, But nothing prevents us from also going back to the previous sessions because perhaps some people weren't there and may have questions about these previous sessions and the idea is to circulate the floor and it's not, as Ségolène quite rightly said, up to the experts or those who can be described as experts. .. Everyone can also contribute their own experience and knowledge on these issues.
Speaker 1: I have a reaction, because you said that in 10 years we should be able to have a real development of animals in the city and perhaps develop complementarities etc., and at the same time, we see that in the area, the pressure on land is still strong and, as a result, are we starting to see in land use planning, or even - let's go ahead - in urban renewal, this kind of thing, a consideration, as you were talking about...
G.G: ecosystem services
Speaker 1: So, finally, are there any economic models that are reliable and that allow us to say that it may be in the interest of a territory to protect certain areas... agricultural or, in any case, green, non-constructible? Because today, we often see that the garden or what have you for a community is what costs a lot of money because there is no budgetary use for the project etc. How do you reconcile the fact that, on the one hand, we say that it's going to develop, with everything you've explained to us, and on the other hand, the constraints of development, housing, etc.?
G. G.: I can react quickly. The SCOT already provides for the preservation of certain agricultural land and the production of 3000 hectares. Afterwards, it remains to be seen how they will achieve this. And afterwards, I think that there are communities that have gone in this direction, that are going to protect certain agricultural areas. After that, it depends on the political orientation. The city of Montreuil, in particular, on the Murs à Pêches, has made an OAP, a thematic development orientation on urban agriculture, so there are more and more examples of local authorities committing themselves, in particular in their urban plans, to preserving, or even developing, agricultural spaces. I think that with the territorial food plans, food is taking its place and food is becoming a priority - not as much as housing

- but it is something that is on the table and I think that agriculture can be used to move in this direction and preserve these agricultural lands, to feed ourselves...
A.L: Very clearly, to answer your question and in the sense of what Giulia said, politically speaking today, there is almost no municipality that doesn't want its own little urban agriculture project. Urban agriculture is something that has taken root. I can see it in my city, I live in Dijon, there is a discourse that is carried by the politicians, carried in particular by François Rebsamen, but between the discourse that is carried in particular around the territorial food plan and its concrete translation on the ground and in particular this balancing act with the pressure on land and the need to build housing – well, the need, we could also talk about that – the fact that developing land in any case, this balancing act is still very unfavourable for the moment to urban agriculture, and when we talk about urban agriculture, we have a tendency today, especially in these cities where the pressure on land is significant, to make it climb onto the roofs. I have nothing against these forms, on the contrary, we were talking about it earlier, in terms of ecosystem services, it is extremely interesting to succeed in greening the roofs, but at the same time farming on the roofs, personally, it is very subjective, it poses a problem for me, especially in terms of accessibility. If we think of agriculture in its social aspect, productive urban agriculture on a roof it remains questionable. Basically, agriculture and I refer you to what Guillaume and the Urban Shepherds are doing, is something that takes place on the ground, and I think that this is where it makes sense. I think that for the moment the cities have not really solved this equation, either because there is a lack of political will, or because there are strong economic interests behind this equation with, effectively, the use of land. In Dijon, there is something quite extraordinary, in terms of example, there is a market garden plot of about 8 hectares called Les Lentillères, those who know Dijon or how are interested in the question may have heard of it, it's a district which is enclosed in the city, we're really in the intra-urban area, it's rare moreover when we have market garden land which is extremely fertile and it's land which is targeted by real estate operations. This is land on which an eco-district is called the eco-city of market gardeners, orchards on the roofs. You get the impression that they're obviously going to concrete over this market garden land. So there's all this aspect, it's not a question of polemics on these subjects, but I think that the balancing act between land for building and land for preserving natural elements to make urban agriculture is an equation that is not yet very well mastered. There is a will that is still on the fringe.
Speaker 2: I thought I understood, from my little experience and my studies, that one of the big issues was the dewatering of soils, with the ponds and others, but in fact I was thinking of a district on which I am currently working at Val Coteau in Neuilly-Sur-Marne, just to tell me whether it's feasible or not, because it's a big district, and there's the 33-hectare park which is just next door, but I think that otherwise there are almost no green spaces as such, no grassy areas, it's almost all concrete. I have the impression that in development projects, there are so many complex things, networks, buildings, constructions that it is often on the public spaces that the whole operation is reflected and that what costs the least is the tar, so for the sake of planning time – despite the fact that we are aware, that is to say the municipalities, developers and others – that in the end it is not taken into account so much. And in the end I think that the urban planning documents are not so restrictive, in fact, you mentioned earlier that in the long term in Paris there could be circuits, cycles, but if there is no more land or if it is more than in the parks, the circuits will be very limited in fact.
B.U.: There will always be room in the city, but we don't necessarily think we see it because there are all the edges on the sides to get from point A to point B. On the substance, yes, I fight a lot and we fight a lot to have open-ground agriculture, in the ground, which is almost placed after the other experiences that exist and which are placed next to it. Very well, we want to see how they develop, how they are economically viable, because today it has not been proven. Working on the roofs is like working in the middle of the desert, it's very unpleasant. You have to pull up the earth, you're in the wind, you're cold, there's no shade, it's a dog's job. It's a bit nicer than the Alhambra greenhouses (NOT Alhambra, but Almeria), but not much more, and when you say you're going to do an insertion on it, well, no, at some

point you say to yourself that's how it's done. You think there are great ideas, it's good for agronomists, engineers, to make money but for those who work it's really very, very unpleasant. After that, we'll see why not, but I find agriculture with additional green spaces on the roofs interesting. I'm very wary, however, because you can always find, as long as you have an open space, a walk with sheep that will relay the green spaces from one to the other. In the desert, sheep connect oases and this works very well. That's how I came to think of urban shepherding, when I was in Morocco and I saw a guy walking by with his sheep and I wasn't sure I'd seen him half an hour later because there was nothing to eat. After that, I'm very suspicious, if you rent the green space in the city and you rent the land when in fact you have an added value of service, it's not you who has to rent as a stakeholder, it's the city which has to pay you. This was the real strength we had, which allowed us to invent new forms. For example, I have a small vineyard that I rent in the Beaujolais region, and to rent a hectare, or 6,000m2, it's 500€ a year, it's planted and it's going to make money on the spot. That means that it's one cent per m2 per year. Basically, the rental of a market garden shouldn't be more expensive than what Beaujolais Nouveau brings in. Otherwise, you are renting, if you go up to ten euros per m2 or something like that, you are more expensive than [inaudible], but you make Saint-Joseph... So there comes a time when we have to go back to parallels where the city, the real chance we had was that we could set up and develop this type of activity because we were paid for the ecosystem services we provide, and the agro-environmental services are starting to take precedence over the city. If, all of a sudden, the value is reversed and we have to pay to see the ecosystem services we provide, we have to be very wary of what we do because suddenly there will be much less rent for urban agriculture. We need to make exchanges of services in which we can say I'm exchanging ecosystemic value and you are giving me these services and that's precious. But renting is very dangerous for urban agriculture in the future, where we end up with the Gally farm, insertion and we return to an agricultural system that we don't want, whereas urban agriculture managed to denounce and show that there is an alternative. That's my opinion, and we have to be wary, and indeed, it's not only friends who can find land, you can also approach them – and it's the same rate that will happen: between 1 and 5 years to be able to sign contracts, there are still contracts that I signed ten years ago that are starting to be bankable only now.
S. D : I have a question, I don't know if Giulia or someone else has an opinion on this, but I had the impression that at the time of the ZAN - zero net artificialisation - So when the ZAN policy was launched, the local authorities seemed to be saying that we were going up a notch in the way we were asking the local authorities to manage space sparingly, we were moving on to precise, quantified values, and that this changed the situation a bit compared to the previous urban planning documents where there were principles and not really anything precise; and that the ZAN brought in this quantitative threshold and that it changed the situation somewhat. As a result, the issues of agricultural compensation, land compensation, reversibility, saying that we're going to take over an urban area and make it return to a cultivable state, had a better chance of being implemented. So, I don't know, Giulia, if you also have this impression, or if you in your departments have the impression that the passage of this law, although we don't talk about it too much anymore, it's true that last year it was at the heart of all the debates, that it changed something?
G.G: As I was saying before, I'm waiting to see, effectively, the SCOT because there is this objective of creating 3000 hectares, so maybe converting certain areas, classifying them as agricultural, I don't know.
S.D: What is the SCOT you're talking about?
G.G: The Greater Paris metropolis, sorry I didn't specify, and so there will be consultations between September and October, I'm waiting to see. And also the city of Paris is working on an urban climate plan and I'm waiting to see how they are going to internalise certain prescriptions and it will be interesting to see how these speeches are translated into the plan, but we'll see.
Speaker 4: I think there are two ways of making progress: Firstly, there are the laws, I was saying earlier to Giulia that perhaps at some point - but that's beyond us - when 30 houses are built now, there should

be a systematic garden or a green space planned, etc. This would make it possible to reconcile the need to build housing, to ensure that there is housing for everyone, and at the same time to make progress on these issues and to avoid making the mistakes of the past. The second aspect, which is perhaps more for the stakeholders of the city or associations, is to militate each on its own on these aspects. For example, as we saw earlier, one of the obstacles is the question of security, theft, damage, acceptance by the public, but apparently it goes very well. But perhaps it should be put forward in bodies and meetings that are not a priori designed for this. I'm thinking, for example, of the CNSPD, when it is convened. I think that we can also change mentalities a little by talking about urban agriculture in these bodies which are rather dedicated, a priori, to talking about security, the relationship between the police and the population, and perhaps highlighting indirect ways of calming things down in order to avoid degradations, etc. Otherwise, at best, urban agriculture is reduced to "let's make a shared garden, it will keep people busy" and then we immediately come up against the idea that we can't feed everyone, so it remains very marginal. If we manage to point out that there are many more aspects that we mentioned earlier and that were addressed via the sheep, related aspects linked to social, security and other things, maybe that will make things move.
Speaker 1: Today, we were talking about calls for projects, and here we see a political approach to the city, since this is our subject, but everything that is "Quartier fertile", the ANRU calls for projects, all these questions do not integrate these systemic elements at all, I believe...
G.G.: In any case, more and more, in the calls for projects and the criteria, we pay attention to ecological practices, the environment, the landscapes and in the evaluation criteria a panel that touches different dimensions, not only economic... afterwards, when there is an arbitration in the projects, it may be based on other criteria, on aspects rather than others. But we can say that in the criteria that are displayed, there is attention, for example, to water. There are more and more criteria linked to access to water, water management, etc. So there is this recognition in any case. Afterwards, when we talk about urban agriculture, we were able to see that through the exchanges we had, there is a diversity of forms that vary greatly (open ground, roofs, etc.), so it is important to take into account these different dimensions, to make choices according to the forms and function that urban agriculture can bring, which are not necessarily the same. There is a plurality of forms and therefore, obviously, we have to be careful, sometimes we talk about what the values and functions we want are. So it's impossible to find a forms that meets all the criteria at the same time. There is this attention, in the ANRU services, and on fertile districts there were really indicators. Afterwards, it's also difficult in the project to gather all the criteria.
Speaker 5: A question, Giulia, you talked about the role of the landlords, because we are talking about land and finally the landlords are the managers of a good part of the land, especially in the political districts of the city. But I find that there is a sort of enormous gap, even in the example of *Quartiers Fertiles* which is becoming a sort of gadget, in my opinion, but which is not taken into account from the beginning in the ANRU projects, there is still the logic of building huge car parks which take up a lot of space and which will be concreted over etc. That's what I think, I think we should give more space, already to green spaces, but to agriculture and the alternatives that go in this direction, I feel that there is a gap in relation to the reality that we are living and in the 10 or 15 years to come, the 20 years to come. But we continue to project as if we were in the 1960 or the 1990s, it's the same response, the same inertia, the projects try to improve climate performance but in terms of development, the place of the car remains very important, if not one of the most important things in the project. Even if we really hear a lot about urban agriculture, it is still… I think that we have to stir up the decision-makers, the landlords, the communities.
G.G.: Thank you for this intervention because it gives me the possibility to complete, I had noted but I forgot, in fact we have just finished a study with the Social Union for Housing and in collaboration with the CSPV and the AFAUP on the evolution of urban agriculture in social housing buildings. We published this study, which is online and can be downloaded free of charge, and what is really interesting is that

at the end there is a monograph of about ten cases where the landlord presents the project. Of all the landlords, only 53% responded to the survey, so this study is not exhaustive, but we can see that there is a predominance of gardens at the foot of the building, but there are also more professional forms which are being set up, There is also a project in partnership with a market gardener in Toulouse Métropole and there is access to food for people living in the residence, there are also partnerships or forms that are being set up. So we can see that urban agriculture is also a space of freedom where we can create partnerships or innovative projects from a social point of view and not necessarily only from a technological point of view and I invite you to go and see this publication that I will send you via Ségolène, because in the monograph part there are different examples of the type of projects that can be interesting to look at. But it's true that it's taking place little by little, but there are quite a few projects in progress.
Participant 6: And what are the main obstacles, I don't know if you asked them about this, mentioned by the landlords to the creation of these gardens, apart from the need to build other parking spaces (laughs), but the other obstacles mentioned?
G.G.: The obstacles are also different depending on the type of project, but for the more professional projects, it's the skills within the landlord to carry out the project and also to find an operator to contract afterwards, so it's a bit of a project methodology but also finding an operator. Afterwards, for shared gardens or collective gardens, the problem is mobilisation because there may be an enthusiasm but then there is a loss of momentum, so this is really a problem. And the support of communities and decision-makers is, on the contrary, a lever.
A. L : Regarding what you said about running out of steam and the need to mobilise inhabitants around the notion of shared or family gardens if we decide to create allotment garden plots at the foot of buildings, if we take Quartier Fertile as an example, I know it quite well because I work quite a lot with the ANRU and I am a Quartier Fertile in a certain town; which we often see, I'm thinking in particular of Romainville, for example the Cité Maraichère, they submitted a file and they are labelled "Quartier fertile" (there are 3 waves of fertile districts, 3 sessions we'll say because it's a bit of a connotation now, but there are three sessions and Quartier fertile is finished today, moreover, there will be no more. In any case, there will be no more calls for the Quartier Fertile project, unless the ANRU decides to relaunch it and there is funding to do so), but in Romainville we noticed that very often the local authorities, the landlords, or at least the project leaders, do not immediately include the inhabitants in their reflection, and this is a real concern. Launching a dynamic of urban agriculture in this type of housing, which first of all concerns the inhabitants because we are supposed to improve their way of life, even if the call for the Quartier Fertile project, the ANRU's terminology, is to say that we are going to massify urban agriculture in the political districts of the city with the aim of economic development and social development. So economic development can be, it creates some jobs, it's not necessarily debatable, on the other hand, social development is somewhat debatable insofar as, once again, we tend to forget how we build with the inhabitants and it's not only due to Quartier Fertile, it's as old as the world this story of associating the inhabitants and co-constructing with them. I think that there is a real lever to be found, even if it's not complicated to find, there are many associations which work on how to associate the inhabitants, there are many reflections, it's not as if we discovered this yesterday. But it's still an unthought-of issue and even in urban agriculture projects, we feel that in this type of project where we might think that it's a given, I notice that when I've accompanied cities - and I'm not talking about Sarcelles necessarily, I really notice that it remains a difficulty, or else we will think of associating the inhabitants at the beginning but we will not think of associating them in the long term and that’s the whole difficulty because an urban agriculture project starts very well at the beginning, We’re all happy when we get a shared garden going for the first few months, then it will run out of steam, if there’s no animation behind it, if there’s no social animation and social development behind it, it won’t work. And this is a real concern that the ANRU has not necessarily integrated, it is not necessarily part of the way the project will be conducted, at least for the moment. And it is true that I

think that a real effort should be made on this, at least in these political districts of the city where we know that social animation is essential. We can't say that we're going to do an urban agriculture project, it's a bit of a vertical aspect, somewhere, of the fertile districts projects – I can criticize something I'm working on but I've also said a lot of good things about it and I continue to say a lot of good things about it – but there's still a vertical aspect to it, whereas urban agriculture needs horizontality, especially in the districts, to work with the population, otherwise it won't work.
B.U.: I worked a lot for the shared gardens in Sevran and the landlord naively thought that as the space was managed, the building was managed, he would not have to manage that space. The chance we had in Sevran was that we were sworn in, we worked for the city, but this allowed us to animate and we fought by saying that we absolutely had to have the keys to animate this space and not with a false concertation as we are used to doing where it's good you've consulted, it's good, it's gone and then you're on your own. If we're paid to do social work, it has a real cost, it's not just three lines on a piece of paper, it's something that's long, that's regular and that has an added value. When you do social work, you don't do prog in general, that's not how it's going to happen. When I see actors who say that they have colossal or fairly large subsidies and that they are being robbed or degraded on the territory, it's because they haven't done the social work. At some point, we take up space in spaces like that, but this urban agriculture which does social work must do it because it's really important, I think, and that's where it's most important, I agree with Antoine who says, basically, that we must start there and not (inaudible) and that's what's going to be the most expensive tomorrow and that's the only thing which is interesting. Basically, what we were saying earlier, we are English bobby and country wardens, the aim is to reanimate and reenchant the space in the capital. What we like about urban agriculture is not so much its capacity to produce as its capacity to make people dream, i.e. basically the little flowers in the shared gardens etc. are more evocative for the city dweller than the romantic garden of the 19th century or the Zen garden which is being set up (inaudible). This is really interesting. And the last point, the local authority must keep control of this part, as Mathieu Hely said, when we gave everything to the associations, it was the consumer, the beneficiary, the citizen who lost out, because basically school support and all that, before it was taken care of, at the time there was a lot of stuff, but each time we give it to the associations, we give subsidies to do it, we don't give the means we need to do it, and in the end the consumer loses out. And I was quite happy when I was in Sevran to be sworn in to be able to run the gardens because we have the counter-example of the shared gardens in Créteil, where, basically, if they weren't run, they ended up as brothels and drug houses and that's also what happens. At some point we have to be able to work on this and be careful to legislate, when the city of Paris says that you need a gardening permit to be able to take control of the land, it's scandalous, normally the garden is the first freedom, to work the land, to take it like that, it's something that we have to be able to do and if you need a gardening permit, it's really annoying. You go to Garge-lès-Gonesse in the industrial area on the side, the Chinese don't talk about urban agriculture, and it produces more than in most gardens, there's a plethora of them everywhere on the smallest plot of land because they need it and they know how to do it. At some point, we should perhaps just let people do it and have policies of encouragement and incentives and not necessarily always go to associations and things like that. I'm very sceptical about urban agriculture start-ups that set up in neighbourhoods and talk about social issues, but in any case they should be held accountable. Today, we talk about CSR, but we don't know how to calculate CSR, we don't know how to make the social economy and when we ask to evaluate it, we don't succeed. I think that we have to be careful to leave the freedom and the space for public policy to have the means to do this, which seems to me to be quite important.
S. D: Julie? (laughs) We have the second shepherdess
J: Hello, I'm going to speak on behalf of the Clinamen association, which has the flock of sheep, in fact, and because I've met people, let's say in precarious situations, that we've been able to help in one way or another. My conclusion, and I don't come from the social world, I come from the building trade and I've been looking after sheep for 10 years, is that you can't do agriculture when you're in a precarious

situation. Agriculture is often compared to the hospital because we are dealing with living organisms. It's a very long time, we see long-term benefits and people in precarious situations are always moving around, changing plans, thinking where can I get help, where can I get this? They have so much to deal with that farming is the most disabling thing you can offer them. To offer them to get out of it through urban agriculture and to come and do some extra work or something like that, in my opinion it's a joke. And so, to ask, for example, shepherds to teach, to educate, to accompany, we can't do that! We're already accompanying a hundred sheep (laughs), we can't add human beings, knowing that it's not our job to know all the aid circuits, to draw up a life project, to accompany on that, on short-term and long-term objectives, etc. It's an educator's job, it's a social worker's job. Every person who has a technical skill in gardening, agriculture, animal husbandry, would need to be accompanied by a social worker, and this is very, very expensive, it's doubly expensive. That's why at one point I was following the project of... I don't know what it's called... 104, 101? Rue Henri Barbusse in Saint-Denis, which wanted to create a neighbourhood centre which would help, in addition to accompanying people, to develop micro-economies in the form of cooperatives etc. Well, I don't really know, I don't really know where they are at, but for me, that's the solution for tomorrow and it's certainly not to create 2-3 gardener animator posts because, in any case, it's not possible to do either a garden or an animation. The precarious, the poor, and we're in the poorest department in France, we can't afford to just say that gardeners will take over, or else we won't fulfil the objectives and then people will realise that they're not eating, so the promise is not kept. In relation to the price of food, there is a sort of glass ceiling which means that we either distribute food for free, but in any case we will never really be able to pay the price of what we do in the field, of the product, and I'm talking nonsense, but it takes 4,000 hours to keep a flock of sheep, imagine the price of the meat, especially as I have a very small flock, and very few people will be able to pay that cost. Farming in the countryside is so subsidised by the CAP that the guys don't pay themselves from the sale of their product, that's a fantasy, the truth is that they are 70-100% subsidised. So why aren't we, as urban farmers, also 100% subsidised? Afterwards, when I call the DRIAF etc., they tell me: ah but yes, Seine-Saint-Denis has not been designated as an agricultural department, so there is no land that is eligible for the CAP, it's complicated. In addition, we have an agricultural sector that lives a lot from services, so the MSA tells us that you are not a farmer because you live from services. When you're a farmer, almost 51% of your budget has to be the sale of products, we're here to produce, to feed the world, we're not here to provide services. They refuse to accept service agriculture, so, in fact, urban agriculture is not agriculture, for the MSA and for the whole agricultural world. So it's up to them to evolve in relation to the specificity of what we call urban agriculture, and on the other hand, it's up to us to realise that if we don't have the CAP, we won't make it. So there's a lot of political work to be done, there's something called the grass premium, for example, for sheep, if we make the George Valbon Park eligible for the grass premium, it can go up to 1500 euros per hectare, so we're starting to talk about interesting things. Otherwise it's insolvent and so we'll see that people who are exhausted, who are exhausted, taken by passion and then by exhaustion and burn-out.

J: You can be a landlord...

S. D: Or a tenant, that's what they call the basic payment entitlement, and then the green payment, premiums, etc., will be grafted onto it. But in fact this basic payment right is linked to hectares, no matter what you produce on them, if you don't have the hectares you don't have this right. Not all agricultural land in France gives the right to this basic payment right, there is a pool in fact, a limited number of rights which was decided in 2015 or in 2016 at the time of the CAP reform. In fact, this is the cake that has to be redistributed permanently but which remains constant. Between the farmers who stop, who put their right to payment back into the common pot, but who are in fact linked to their hectares, so depending on who takes over their hectares, they have to ask for a transfer, there is a

rather complicated muddle, but which means that the CAP aids, contrary to what we think, are not at all linked to the production that we do, but it is really linked to the land. Today we're talking about land, so it was complicated not to mention it.
J: And the worst thing is that you see, for example, we were a bit annoyed by the MSA, which wanted to integrate us as farmers because we answered several boxes, so they said they had to collect contributions. The MSA, for those who don't know, is the social security fund for agriculture. And there we discovered something completely unfair, so we tried to avoid it as much as possible, it's the solidarity contribution, which means that if you have less than one hectare with a small production, so already there if you manage to pass the 51% of production of turnover, in fact, you pay, and sometimes it can go up to 3,000 euros of contributions and you are not entitled to anything. So yes, you have your "carte vitale" but you don't have any pension contributions, no unemployment contributions, and there are 47,000 farms in France which pay this solidarity contribution and which have no right to anything, it's disgusting. As an urban citizen who is discovering the agricultural system, we can already protest and show solidarity with the small agricultural associations and say that this is scandalous.
G.G.: The AFAUP is working on a link with these out-of-case farms, these micro-farms which are also in the urban environment, and they are working on clauses and also with the MSA to assert rights, to adapt projects which are different to the urban situation. All the projects are different, so each one has its own particularity, but they try to characterise the diversity and then assert the rights to make it possible to work like that, because otherwise there is a risk of exhaustion.
J: You mean that the AFAUP is really going to discuss with the MSA?
G.G: Yes.
J: And is it going well?
G.G: They are negotiating, so there you go, I don't think it's something that can be done in a minute, but in any case there is a dialogue that is being built up with the farming community and that's important.
J: I don't think they accept the delusion because, in fact, if urban agriculture gets money for the services it provides, it means that all these 47,000 small producers could say to themselves: I'm also going to provide services, visits to the farm, education, and things like that. They'll realise that it's more profitable than producing, and then we could also have the Carrefour chain and all its partners starting to do educational work, and in supermarkets, etc. Bonduelle will also do educational work, and this will be a good example. Bonduelle is also going to educate and at some point no one will produce peas anymore. I think that the aim of the MSA is to keep farmers' heads under water so that they don't see that the service sector is more profitable today than the production sector. If urban agriculture raised this issue... I think that the FNSEA would take a stand against it, like we won't share the cake, because the cake is getting smaller every year, so there is a crab basket effect in the agricultural atmosphere in the countryside, with everyone trying to take over the other's plot of land, which leads to incredible neighbourhood wars... it's quite a challenge.
B.U.: There was something else, usually, it's Antoine who says it, maybe he's changed (laughs), but urban agriculture on land issues, there's not only agriculture in terms of what we need, it's interesting for people in terms of well-being or something else, there's something else that we can say. I'm maybe quite old etc., at the time I was fighting with social actors about the right to do nothing and often, basically, what do we take from agriculture where at the time we had large spaces of freedom in which we could meet with each other in these empty spaces and which are really structuring, the vacant lots etc. So there are no more spaces for the people to do nothing. As a result, there are no more free spaces, because we've made it safe, we have to fill the space all the time, we want to have a place to do nothing and that's really important, the city becomes detestable. There can be all the urban

agriculture you want with gardens in all directions. The place where you can be relaxed, which is not secure, basically, you need it for your construction as an adolescent, as a human being, and even when you're in Franc-Moisin you have people who say: it's so secure that when you make a garden you're happy to go in because at least you're not in a draught with a secure thing where you have a bench in the middle of nothing and you can hide from the cops even if it's transparent. We also have to be vigilant about the land that goes beyond agriculture and in any case we have to ask ourselves what space we're taking up and what space still exists for these spaces so that people can breathe, without being on a bench, in the middle of an empty square, to see what they're doing.
S. D : This is typically the problem we have in the ZAC des Tartres at the moment, which is at the crossroads of Stains, Saint-Denis and Pierrefitte and which was the last market garden land, so it was really exploited for classic market gardening and was quite well known. What is less well known is that just to the north of this land, on one side there are official allotments, and in fact on the other side, gardens that the community has called "wild", pirate gardens, well, these are undeclared gardens but which have been there for an extremely long time with cherry trees everywhere, It's a kind of incredible ecosystem, gardened by gentlemen who are now retired and people who were in the towers, who came to do their gardening in an informal way but, all the same, very organised. When you go in there, you feel that it's the space where the whole family was invited on Sundays, there are a lot of activities other than breeding and agriculture, there were many things going on. In fact, this space, even though we're in the ZAC des Tartres, which is sold as a ZAC that has put green space and urban agriculture at the heart of its project, that's how it's sold and, effectively, all the agricultural hectares have been reused as green space or agriculture, but in fact, these gardens have always been replaced by buildings in all the plans. At no time did we say to ourselves: this land is also garden land, agricultural land, land in which something is happening, and so these will be lost in a few years, these are the last parts, so a priori it will be 2025. They don't exist. I think that for them, for a long time, it was good that they didn't exist, because a lot of things could happen there, but in the ZAC there's no space like that where we could rethink places that aren't planned in a row. It's not for nothing that it happened there, it's because we're in fact between three towns and therefore on the outskirts of three towns, none of the towns had much interest in these plots of land, but now that everyone's growing, it's becoming a heartland and so, in the end, what we're going to lose are these spaces of freedom, by gaining a little bit of agriculture.
Speaker 1: We have some figures on land, whether it's green spaces or agriculture, the evolution in the department or in Ile-de-France. Spontaneously, I imagine that over the last 50 years there has been a drop in agricultural land, green spaces, etc. Is there a change in trend or is it that, overall, even if there are a lot of small projects emerging and we feel something beginning to emerge around this question, in the figures and in reality, land is becoming increasingly rare for this type of activity?
G.G: Maybe it's Antoine, isn't it, the conservatory?
A. L: No, in fact there's a database managed by the Paris Region Institute, I've completely forgotten the name of the database.
S. D: The MOSS, the land use pattern
A. L: Thank you, and so effectively there you have the evolution of green spaces which, I don't know where this evolution stands, but from memory when I was still working at the Paris Region Institute, we were surprised to see that, despite everything, and while intuitively we could think that artificialisation has progressed strongly, that's clear and has caused a decrease in green spaces, there is a movement towards stabilisation, or at least a plateau that had been observed.
S. D: But not on agricultural land, on agricultural land we're still in a consumption dynamic because it's the least protected land, and green spaces in the city have had a whole bunch of tools to protect them,

and there was also data from the WHO saying that access to green spaces was now necessary, so there's a whole bunch of things that made it so that at one point we tried to protect them. At one point there was even an increase in Paris, but we had fallen so low in Paris, we were really at the limit of what was liveable. In the inner suburbs, you say stabilised, but the whole rural area and even in the inner suburbs, the agricultural land is always where we're going to take for urbanisation and there the rhythm continues. I don't have the figures in my head, but we're talking about several hundred hectares per year and, in fact, we can see very well the influence of economic cycles, that is to say that when there's money, when the economy is doing well, we build and then it goes up, there are rates of consumption of agricultural land which start to rise again and as soon as the economy slows down, when the number of projects decreases, it doesn't decrease but it increases less quickly. But we are still in a phase of consumption of agricultural land, which is why the objective of zero net artificialisation suddenly raises a lot of questions and shifts the focus to the city because it means that if we continue to consume agricultural land in one place, it means that we will have to recreate it elsewhere or recreate green spaces. That's where all the soil engineering comes in, to say that land deemed unsuitable will be brought back and that's exactly what Guillaume was saying, that land that was somewhat abandoned, the abandoned, will be brought back into this accounting to arrive at this ZAN while we continue to consume agricultural land.
Stakeholder 1: This is the example of the park where, despite Natura 2000, despite the ZAN, etc., we're still going to build, to take away some of it.
S. D: Yes, if we're talking about La Courneuve, there's a construction project in Dugny for the Olympic Games, which we were told about at the very beginning, but in fact, in the balance sheet, we consider that the park will grow because in compensation, the State has retroceded the petrol park that was previously owned by the army.
J: I'll show you if you want (laughs), in fact it's a piece of here and they're going to get that piece back.
S. D: And so in fact, as it's bigger than what's taken from Dugny, if we take stock, it's positive.
Stakeholder 1: But which was already there, nothing had been built on that part?
S. D: Yes, but it wasn't considered usable land.
J: It was a military site, it was used as a security fuel tank and, as a result, there were leaks in the area, so it was an extremely polluted zone. I think they invested several million euros to clean up the soil. And then for the park, you have to know that it was one of the first parks to invent the embankment, so the landscape is modulated with piles to enhance it. And in fact all this area here, all the areas we see here and a bit of the amphitheatre, are the soils of Paris which are piled up here, which make the hills, so you might as well say that the soil is bare, even after 40 years, it's very draining, very dry, there's nothing that takes, the humus is struggling, the trees are struggling... It's very complicated. The only really interesting area is this one, it's all flat and it's really the old fields with the original soil of Seine-Saint-Denis because the Mareville farm was here, at this place, there are archaeological studies that attest to it. Here there's this road which has always existed and here a whole series of fields and you can still see the plot of land, so I would declare a possible agricultural zone here, because the soil is there and it's good. Mareville, we hear it in the toponymy "mare", these are waterlogged soils and indeed the grass is always green in this place.
S. D: But as a preamble to the agriculture and food diagnosis carried out by LAB3S, they take stock of the situation, and what's interesting is that they also use the data from the last agricultural census, so there is a drop in the number of farms and the number of areas.
Stakeholder 7: That's right, because today there are about 550 hectares of farmland in Seine-Saint-Denis, which has decreased by 50% in 10 years and continues to decrease because we see that in Tremblay-en-France there are about 200 hectares that are threatened and more than threatened with

the Aerolians project, but even on the projects that we can follow, for example in Sevran where there was a plot of land where the surfing wave was supposed to be, which was cancelled and which was an agricultural land of about thirty hectares, there is again a project which should be on it. We manage to save agricultural land but half of it becomes constructible, so even by preserving certain agricultural plots we halve the agricultural surface. We continue to be on this very downward slope when there's not much left.

J: And I'd like to add, in relation to what we're saying here, what's really very annoying is that we'll never be able to compensate agricultural land in Ile-de-France for creation elsewhere, i.e. agricultural land in Ile-de-France is not worth a hectare next to Clermont-Ferrand on granite or in Brittany, it's not the same thing at all. You have to think that all the agricultural land around the cities is the best in France because we would never have had these cities, they would never have developed, if there hadn't been this fertile land around. So the bigger the city, the more fertile the land. We're killing the Pacha Mama, as the southern Americans say, we really can't continue to try to develop agriculture on piles of stones in the rest of France in geologically, geographically very difficult places against urban sprawl on the best land in France. It's a great pity, and this is an awareness that people should make which is really very important. There's a second phenomenon and we see it because we're often in Villiers-le-bel, Villiers le bel has what's called an agricultural corridor under high voltage lines under which we can never build, so it's, in inverted commas, preserved, except that the farmers who today plant maize or wheat over there, they haven't planned on it, there's no one in the family who wants to take over, so what do we do if there's no farmer on the agricultural land? There is no urban agriculture project with holders who would say yes, I'll take 100 hectares, we only have beginners in agriculture, they don't have the level to maintain what cereal farmers could pass on, so that's another problem.

S.D.: Yes, the problems in the peri-urban area are still different.

4. AUTRE CHAMP – July 7th 2022

S. D: We tried, in several sessions, to approach very practical tools in relation to the theme: on soils, there was the history of diagnosis, on land, the same tools, and Antoine had the idea when we thought up this session, as we're in a very lively garden and the question of participation arises, to perhaps focus on the tool, which can be interesting, of participative sciences, as a support for animation in these gardens. So, to what extent is it taken in charge by the inhabitants or is it animated by the associations? First of all, we invited Lucille Dewulf who will talk to us about this because she is the specialist in this field, and then we will have a short question-and-answer session on this type of tool, and afterwards we wanted to broaden the question of inhabitant participation more generally, but in fact, we can see that the link between the inhabitants and the public authorities still has an important role. I am going to give you a summary of what came out of the collective intelligence workshops we organised in 2019, where there was a workshop on this issue, to remind you of what came out of these exchanges between many stakeholders of the territory and urban agriculture. So I'll pass the floor to Lucille on the question of participatory sciences.

L. D: Hello everyone, my name is Lucille de Wulf, I work at the regional biodiversity agency, I am a naturalist and ecologist. We have been interested in participative sciences for many years, because they are tools that allow us to have a better knowledge of our natural heritage, to collect information on this natural heritage in a standardised way, generally via protocols that are quite simple but that allow us to define the way in which we collect information. This standardisation allows researchers and scientists to answer the questions they ask themselves, to be able to analyse homogeneous data and therefore to have a relatively reliable set of data. Why is this of interest to us in the case of biodiversity? Because it is an element of living organisms that is very complicated to observe and analyse and, as we all know, there is the climate emergency but also the collapse of biodiversity. At the same time, we need to have this information. And why are we also interested in this in the context of urban agriculture and cultivated spaces in the city? It's because in the city there are fewer and fewer places that can support biodiversity and cultivated areas are one of them.

I'm just going to backtrack a little to explain the approach that led us to develop participatory science in cultivated areas in the city. We go back to a time when Antoine was my colleague (laughs), because we worked together quite a few years ago. Antoine had set up, as part of his mission on urban agriculture, an observatory of urban agriculture in Ile-de-France, an observatory of urban agriculture and biodiversity, where he questioned - I can even let you talk about this - you questioned the practices, the places, the dynamics.

A. L: Yes, the idea was to create an observatory that would be used to collect data, as Lucille said, and also to support local authorities, because when we created it in 2014, urban agriculture was really starting, in fact, the movement was gaining momentum and local authorities, in particular, were taking it up. So the idea was to use this observatory to support these start-ups and initiatives in the communities.

L. D : And so, through this observatory, you were also interested in the notions of practices to know how people, whether in allotment gardens, shared gardens, collective gardens, all the different types of cultivation in the city, worked the soil, the weeding, the products, etc. So, obviously, all that has an effect on biodiversity, but we found ourselves among colleagues saying: well, that's great, we have this base, but in the end, we don't carry out in-depth studies to know which products to use. So obviously all that has an effect on biodiversity, but we found ourselves saying to our colleagues: "It's great that we have this base, but in the end we don't carry out in-depth studies to find out what species we find.

Each time we asked them for very opportunistic observations but it was difficult to understand and evaluate all that. We decided to set up a study in 2018 on biodiversity in cultivated areas using participatory science protocols. We carried out these inventories on about twenty gardens, shared, family, educational... on the ground, i.e. we excluded the roofs because we didn't have many sites, we still wanted to have homogeneity in the way we studied crops in the city, so we stayed on cropping on the ground, but sometimes in the ground, sometimes in containers. We set up a few protocols, a protocol that allows us to have information on the interactions between plants and pollinators, called SPIPOLL (photographic monitoring of pollinating insects). It is a protocol that can be understood without any particular knowledge of the subject. The principle is that for 20 minutes, you sit on a flower bed, for example, you take the focus in flower or the lavender, so you choose a flower bed and for 20 minutes you take photos of all the insects and arthropods that will land on the flowers. We then enter the data on a platform, there is a whole identification aid available on the SPIPOLL website to help identify the observations we make and then there is a validation by peers. We are not left to our own devices either. Once we enter the data, some people come back to you to validate the data, to tell you that it's good, that you went to the end of your identification and that you observed well, or "look at this little criterion here, it could be such and such a species or such and such a group of species", which makes it a very interesting protocol because pollinators are very important for cultivation, fruiting, pollination to produce fruit and vegetables, but it's also a very important support for life. It's a protocol that works very well, which is set up at the national level and which really allows amateurs, who are curious enough to go and observe, to learn more, to recognise quite quickly the species that will frequent the garden, to make the difference between bees, wasps, syrphid flies, so all these flies that can also look like bees. And finally, when we analyse the data, we can see which plants will attract which insects. Which insects will frequent which plants? So we have a range of plants that are more specialised in the insects they will attract and, conversely, plants that are more generalist. And insects that will be very generalist and insects that will be more specialist. This allows us to evaluate the richness of our plots, but also to see the interactions and therefore also to see if the ecological functions between the different species are well established or if, on the contrary, there are imbalances, especially in an urban environment, and therefore in this case to improve. We can then think about how to improve our site, how to add plants better, which species to choose to try to attract other insects, etc. It also allows us to ask questions about the development with, for example, beehives, bees, which is a good thing, and what we advise is always to first look at what wild insects are present, what pollinating insects are already present on the site before installing beehives because sometimes we have a capacity, a floral availability which is limited, we don't realise it, but which is already exploited by wild insects. The arrival of hives with several thousand bees tends to unstructure the communities, to create competition, and if we don't provide an additional floral food source, we will completely unbalance the system that is already in place. So from relatively simple protocols, which are really to sit for 20 minutes near a flower, take a photo and then identify it, we can get all this information and then plan, with a more advanced reflection, on how to favour biodiversity. So that's one of the protocols we've set up.

We set up another protocol, on the flora this time, which is called "Florilège prairie urbaine". We make quadras, so 1m2 squares, 5 successive squares that we replicate twice on the site and we inventory all the floral species that we find on these squares. There's also a notion, I didn't say it, of recurrence, we're going to repeat each year, or even several times a year for certain protocols. In the same way, we're going to inventory the plant species, which also gives interesting information. For example, we started the Florilegia urban meadow protocol in 2018 and in the meantime we had the covid, so we had a year where we did inventories after a total halt in management because the sites were closed. There were many plots that had been completely inaccessible to users during the lockdown, and so we

wanted to see the effects of the lockdown on the plant communities and on the animal species. We realised, in the first years, that cultivated spaces in the city tended to favour plants with an annual life cycle, i.e. plants with a fairly short life cycle. It's quite logical because we tend to work the soil, to have an action on the soil, which doesn't allow spontaneous plants, and I'm not talking about plants that we're going to let grow ourselves, that we're going to plant, but spontaneous plants to settle down, plants that are said to be pluriannual and that are going to settle down over life cycles of 2, 3, 4 years, they're very little present. As a result, we'll have plant communities in what we call pioneer environments or disturbed environments, which are quite similar to wastelands, but which are also interesting, because wastelands are the spaces in the city that are the most important in terms of biodiversity. This year's break in management showed us that in just one year we already had a plant community that was changing, with pluriannual plants beginning to appear. It's interesting to see that in one year there is a resilience of the environment that is sufficiently important to be able to evolve rapidly. This also shows that there are sufficient interactions between the spaces that collect biodiversity in the city.

There's another protocol that we tried to set up but it didn't work, but I'm talking about it anyway because it's interesting, it's a protocol on soil invertebrates, so everything that's going to be molluscs, slugs, etc., and in cultivated areas in the city, it's also a question. It consists of a fairly simple rectangular board that you lift up to see what's underneath. It's a very simple protocol that provides information on molluscs, snails, slugs, etc., but also on insects such as carabid beetles, which consume these molluscs. Why didn't this stand out? Because we are in areas that are very popular and so users tend to either move them or use them as traps. We realised that it worked well and we found ourselves with snails and slugs underneath and when we came back, they said ah yes, great, so I removed them, I killed them or I put them in the next plot... ok, so that's not the goal (laughs). There are also other protocols that exist but that we didn't implement in the case of our study because we didn't have the time and also because it was during periods when we couldn't do any fieldwork, but which can provide very interesting information when we can develop this participatory science theme to observe biodiversity over a whole year or over a longer cycle. I'm thinking, for example, of the bird lab protocol in winter, which consists of putting two feeders on a plot of land and observing the birds that come to the site and come to the feeder to find out which birds are present in winter and it's also a protocol that makes it possible to observe the interactions between birds at the feeder. It becomes very playful. The data is entered on a mobile application. We will see that, for example, the chickadees will tend to take a small sunflower seed and go and stand in a small bush next to it and shell their seed; the pigeons arrive in a group, they smash everything up, they throw it all over, everything falls down and they leave; so what has fallen to the ground is eaten by the flycatchers, who will be a bit more discreet and come and eat what is on the ground. And then it allows us to observe wintering birds, which we don't necessarily see all year round but which are passing through on their migratory stopover or which come to winter, for example greenfinches or other species which are very interesting and very amusing to watch in the garden. These are also species that for some will come to nest in the summer, so it also gives information on which species can come during the rest of the year and therefore if we want to encourage them, install nest boxes etc. Target the species that we observe rather than other species that we haven't necessarily seen on the site. Another protocol was created, the last one I'll mention, which was created in the meantime, which we didn't use but which we could have really used if it had been implemented from the start, it's the protocol that was set up by the League for the Protection of Birds, called "Mission Hérisson". It consists of a tunnel that is placed, for example, along a low wall, inside which cat food is placed. On each side of the kibble, we put small adhesive strips on which we put vegetable ink that we make ourselves with oil and coal, it is completely natural and harmless for

the species, and at the end of the tunnel we put leaves. When the hedgehogs, who frequent the site, come, they walk on the ink to eat some kibble and when they leave they leave their prints. Obviously, not only hedgehogs come, but all sorts of micro mammals come, cats, we have observed weasels and squirrels on our site, and there may also be amphibians that frequent the tunnel. This gives information on the species that come to the site at night, which is a time of day when we are less present, and which at the same time will be very useful in the garden, because the hedgehog is the holy grail of the auxiliaries, it's a very nice animal that eats all the slugs, which has a very important role in the garden and which at the same time is a threatened species. So when we have one, we tend to really want to take care of it and it's very nice but it's a species that lives at night so it's not easy to observe. This protocol gives both this information for the garden and the protocol behind it is always the idea of entering the data and it is, in fact, the only protocol that exists today at the national level to have an inventory of the populations and to be able, in a more pragmatic way, to see at what level it is threatened and if there is really a decrease in its distribution area at the national level, because that is information that we don't currently know. So, if you have any questions, I've gone into the heart of the matter very quickly, talking to you about the various protocols, etc., but if you have any questions, even about the context or anything else, don't hesitate to ask.
A. L: Maybe bounce back to the WRA website.
L.D: Yes, this study I'm talking about isn't published yet because we haven't finalised the data analysis, but in any case there's information on the WRA website, articles that Antoine wrote when he was there that are very important and very interesting. And then for all the other protocols, most of the other protocols were done by VigieNature, which is the organisation at the Natural History Museum that develops its participative science protocols, which they develop for the general public, for the managers of natural areas... I was talking, for example, about the Florilège Prairie Urbaine protocol, which is basically a protocol made for the managers of green spaces, SPIPOLL is a protocol that is made for naturalists but also for those who are curious about nature and even for the general public because it is really easy to use, Bird Lab is a protocol for the general public, etc. And then there are protocols that are more difficult and that will be made more for naturalists. For example, in bird watching, there's the STOC protocol, which is the standardised monitoring of common birds, which really requires knowledge of bird songs, etc. So, in any case, there are all these different protocols that are explained on the Vigie Nature website. And there are other protocols that were designed for farmers, so within the framework of the observatory of agricultural life and biodiversity, and which can be adapted... For example, for wild pollinators, I didn't mention it, but there's a protocol that consists of making small nesting boxes for solitary bees installed on the plot of land throughout the year, and this is a protocol that was basically made for farmers but which can be very well adapted for cultivated areas in the city, to see the bees that frequent the areas.
A. L: We can discuss this again at the end of the discussion, but thanks Lucille. I'm sorry I left the WRA. I don't know if you've ever worked with naturalists, but it's really fascinating, I discovered this world 10 years ago and really, you get up in the morning full of joy, so there you go (laughs). In short, the idea, as Ségolène said, with Lucille's presence here, was to present you with a tool which had two virtues: on the one hand, it is a real tool for adhesion and awakening for the inhabitants, for those who, like me ten years ago, know nothing about all this. So I know much less than Lucille, obviously, and there's not much comparison, but I think it's really a powerful tool for getting to know living things better, for connecting with nature and the reconnection that we talk about so much and more. It is really prevalent in this participatory science protocol, and it is really interesting from that point of view. The other thing is that it's also a tool, from my point of view in any case, for empowering the inhabitants on ecological issues, for increasing their competence and, from this point of view, it also contributes to the

construction of a common culture. It may also allow the inhabitants to develop strong arguments, linked to this increase in competence, during exchanges with the city's actors and elected representatives, for example. This contributes, in a way, to the power to act. I'm not saying that it's through participatory science that we're going to create a relationship of force to preserve these places, for example, if they're threatened, but in any case, it can also be a point of support, because effectively, when we know what we're talking about, when we manage to pass on messages like Lucille was just doing on living things, when we talk about hedgehogs, when we materialise all that, it's very powerful, it's very strong and I really think that it also participates in the creation of a balance of power, perhaps, when we talk about nature in the city and that the elected representatives sometimes have a bit of difficulty in. ... define, I would say, to put it politely... You can go on with that (laughs)
S. D: Yes, we'll stay on the question of elected representatives and the link with public action. I'm going to give you a very brief summary, so that we can discuss it, of what came out of a collective debate workshop that we held in 2019. Samuel, you also came to Paris 8 for this day, the theme of which was "urban agriculture and working-class neighbourhoods", in order to try to grasp what was happening specifically in working-class neighbourhoods with regard to urban agriculture. By discussing it with urban agriculture practitioners, people who wanted to set up projects or who were already somewhat involved in these problems, one of the questions that was asked, and which people had reflected on, was whether public action could support popular urban agriculture practices, a question mark. Is public action an effective lever for doing this? Because in fact, there was an observation quite shared by the participants that was that of a mistrust, in fact, of the population in relation to public action, not necessarily in relation to public action in the environment, but globally in relation to public action in the urban environment and in the urban history of these districts, with very symbolic representations of violence of public action on the distribution of buildings, on somewhat discriminatory policies of access to housing resources. ... and also because the deficit of green spaces in these neighbourhoods is also linked to the results of public action. So, there was an observation made about our reflections because it was not necessarily obvious, in these neighbourhoods, to work between the population and the representatives of the public action. Then, the question was raised as to what positioning, precisely, what form of articulation there could be, since there are a whole bunch of ways of working with the population, the inhabitants. The observation, which was also fairly common, was that there was a whole range of possible positions, from laissez-faire, to accepting to leave spaces that were not really regulated, where we let things happen; a relationship that was more of an accompaniment, or even a supervision, but the idea was to say to ourselves that it was not a position that had to be defined, set in stone, which could even evolve over time. This question of temporality really came up when we said that the local authorities had to succeed in differentiating their involvement according to the temporality of the project: where it is situated in its history, by asking themselves the question of whether they position themselves as a driving force, and therefore are going to be very present at the start of the projects and then let things evolve a little; or whether the agents of the local authority respond to the solicitations without necessarily having a very proactive policy. Above all, this positioning can change over time: it's not a garden, a way of discussing, it's a garden and its trajectory and a way of positioning oneself in relation to that. What also corresponds a little to this is the idea that we must avoid an injunction to urban agriculture, so it's the opposite, we want to do participation, urban agriculture is a good way, let's do urban agriculture. In fact, it is also sometimes projects that can fail because there is not necessarily a local dynamic. You have to avoid ready-made recipes saying that the Other Champ is great, they've succeeded in getting people to participate, so we're going to set up Other Champ collectives all over the place...

On the other hand, there is one place where the public stakeholders and their position have a predominant role, almost all the time, and that's on land issues. Why is that? Because they generally own the land or they have a very important power of regulation of the land and finally, they are going to be decision-makers in access to the land and, for the time being, it's something in the long term, it's the history of the conventions that must, in fact, be renewed all the time, because otherwise there are problems of access.
The very last point, and I will conclude on this, because it is something that emerged on which we did not necessarily conclude, but it was around questions of terminology, the terms used and, in particular, around a term that seemed to be a bit controversial because it could be interpreted very differently, that of the appropriation and appropriation of the urban agriculture space, to appropriate a space. On the one hand, there is the shared idea that there is a need to appropriate outdoor spaces, street spaces or public spaces in working-class neighbourhoods in order to reappropriate one's daily life to some extent. But at the same time, there is a certain attitude of rejecting appropriation, which is very much linked to a question of ownership and therefore to an exclusive use of a place which would prevent other people from intervening. So it's interesting because the history of collective gardens is exactly that, it's that we have a position in relation to this question of how we anchor ourselves in a very different place, which could lead to a crystallisation of relations, and therefore the question was raised of using perhaps other terms than appropriation which seems to crystallise other tensions. It was in 2019, so it could be an opportunity to discuss these terms again and how they have evolved, how they circulate. In 2019, there was a lot of talk about the notion of the common, about talking about communal resources, about communalising space. Talking about inhabiting, rather than appropriating and going into the full depth of what the term inhabiting means, we are in a habitat. And then there was also the notion of attachment, of being attached and being attached somewhere. It's a bit related to rooting, but perhaps less fixed, more in a notion of anchoring, of being anchored in trajectories, circulations, and then it's also about being attached to a place, being attached to people, we can talk about a whole bunch of links. Here we are, a brief summary of our discussions at the end of 2019 just before 2020 (laughs) and what happened afterwards. I don't know if this makes you react, on these questions of terminology, these questions of positioning, of link with the community, are there also perhaps among the speakers, the participants, other examples of garden, of discussion that there was between the public authorities and the inhabitants of which you can testify.
Stakeholder 1: Maybe things that work with communities?
S. D: That's right, things that work with the communities, or also a little bit alongside... that's how it's articulated?
A. L: Do you have an example, Samuel?
S: At the time we were invited, it was a delicate period when it was difficult to make public the conflicts we had, and at the same time the question: can the communities or the public authorities serve, or develop, or support the development of the principles of urban agriculture, we had a ready-made practical answer. In this case, for us, it was absolutely not the case, but it was not so much on questions of land but rather on questions of the relationship with associations, the verticality of power, etc. It was rather that. It was more like that. But there was also the idea that it was in any case logical to privilege the shared garden - because at the time there was only the shared garden - to privilege a project or in any case a future for these spaces which will be concreted, because we are at the entrance to the city, it's a very busy area, we would have put a building anyway. At one point we said "but don't you want to think about it a bit? I don't know, this garden works well, it's time, we're talking about the climate emergency, we have to stop concreting. We're talking about areas where it gets hotter and hotter in the summer, we have to plant. It's true that we noted a rather worrying delay, from our experience and

from the point of view of the community, from the point of view of this community. But in general, here the mandate and the team have changed, there is no elected representative or a person in charge of, I don't know, the ecological transition or I don't know what you could call it. There's no elected official in Villetaneuse in charge of that. So there's an elected official in charge, so we get along very well, who loves gardens, but who's not very available, who's a certain age, who's very happy and who comes every time we do things... I'm trying to think of a title for her mandate.
Stakeholder 2: Living environment?
S: Yes, it's something like that, living environment, that's it. So we feel that it's often the opposite, it's often the associations, the inhabitants, the citizens, the collectives that push the communities, that convince them. Afterwards, sometimes there are teams where there are elected representatives who really have these concerns, but I think it depends on the type of elected representative.
Stakeholder 3: So what would you expect from the community?
S: What would we expect from the community? That they leave us alone (laughs)). Basically, that's what we expected from the old community, that's what's happening now, they're leaving us alone.
A. L: It's not too much of an exchange, you say we're going to talk about good things (laughs)
S : I think there are plenty of examples where things are done well, but in this case it was a bit tricky for questions... but what could we expect? I don't know, very simple things, but for example, the greenhouses of Villetaneuse are greenhouses of the agglomeration community, there are several poles in Plaine Commune and, in fact, it's always very complicated to obtain even a delivery of shredded material or compost, because in fact the priority, the agenda of these territorial spaces, of these communities, is to respond to requests. We plant roundabouts, medians, requests from above, from elected officials or mayors who ask for the development of such and such a space, etc., and shared gardens or gardens for the environment. And the shared gardens or the collective gardens are really the last wheel of the carriage, that is to say that even we have accompanied the training of activity leaders in the city, we have been hoping for years for this and now we are developing a garden with activity leaders of the city and the idea is that it will spread everywhere, on the other leisure centres and so it works well, we had to fight so that there would be a delivery of material. So afterwards it's a question of numbers, there aren't many, there are always priorities and we're really not a priority. We would like, in the long term, with the leisure centres, moreover, with the people in charge of the leisure centres, before the next season, to make sure that we can make requests and that there are no difficulties. Sometimes we found ourselves going to get compost for the leisure centre, whereas with the crane and the dump truck, it takes a quarter of an hour, whereas with the shovel, it takes us half a day to fill 1m3 of compost. It's things like that that could work well, that sometimes work well, but we feel that it's not yet the priority. And we can feel that in the logic of regional planning, it's still not a priority to make areas safe, to green them up, to stop concreting, and there are many examples like that. So I think it's evolving, but unfortunately it's not evolving at the speed it should. We've seen it, the last few days of heatwaves here, it was quite terrible, it was really terrible. We're far from it, we're not planting enough, it's accompanying, it's supporting, but it's still slow, in our experience, but it's getting better all the same.
Stakeholder 4: I think that in what we've seen, even on LAB3S, we talked about the urban farm etc., these are projects that are very well supported, in connection with the communities...
S: Are you talking about the Zone Sensible urban farm?
Stakeholder 4: Yes, the Zone Sensible etc., and then there, well maybe not Zone Sensible, but I think that in the questions of LAB3S etc. there is almost an institutional impulse to say we need to think about the place of urban agriculture. Today, local authorities, such as the department and Plaine Co, have a territorial food plan, they have posts and missions dedicated to this and I think that in the reflections

of our cycle, which we can discuss here, there was this subject of how these institutional agents, through their mission, find their place and really come to accompany and complement the things that are being done, because it is the new professions that we are talking about. I find it interesting, there are many initiatives today, even institutional ones, which propose things. But in what we saw from the institutions, we saw that the difficulty was that we didn't see many people living there. So there was the question, we had to go and look for inhabitants, so we proposed initiatives to bring inhabitants back inside, we see that there are the two things that are not really caused there (laughs). I think that there is something, there, in the popular aspect of the garden, well of urban agriculture, that we have seen quite a lot and in the role that today the communities intend to have on this.
S: There can also be different types of project in urban agriculture in the sense that in Zone Sensible they are still producing, they have a garden to run, a production to maintain. We are not involved in production, so it's good if we produce a lot because it's also important, it also gives people desires, ideas, to see that we can also eat healthy food in a different way here, but it goes beyond the garden, here it's also a cultural space, a social space that also responds to the needs of the territory. But these places are also crossed by food issues, obviously, and the relationship with the land, with living things, etc. After that, it depends, I think that there are communities that are aware of the urgency and the need to promote projects. But it's true that it's not yet the norm and not the majority. That is to say that today, when we see an empty plot of land, we immediately think of a real estate project rather than thinking about greening it, we think about making it productive, making a space productive. Here, the participation of the inhabitants can be theoretical at the base and not work effectively, but when you are in a production perspective, everything depends on the type of project. Afterwards, it's clear that there's no secret that it should be rooted in the territory, that there should be links with the district, that things should be open, that's why we don't necessarily have these stories of membership... The fact of going through the door, as we were saying earlier, is already an effort, and all the people told us that we have the impression that it's open, but in fact people don't necessarily dare.
Stakeholder 5: In reality, it's quite closed.
S: Yes, it's something that's built over the long term, and during that time you can't run around trying to be productive, doing gardening perfectly, you have to find a balance in all that. Afterwards, there are subsidies, we get a lot, we answer calls for projects, in our work we are also financed to do things with the inhabitants, so the calls for projects which have very participative criteria, popular ecology etc. or popular education, it's clear that our work, when we do a workshop here which is turned towards the inhabitants and there is little participation, it's a failure for us. Our objective is not necessarily to have beautiful vegetables, but to have our space invested by the inhabitants. This is really the priority and the commitment of the association. That's why we have a lot of communication work, a lot of local communication work, etc. The community is not its job, that is to say that it supports us, sometimes allows us to print posters that relay the information, and if we need equipment for events, it makes it available to us. So it's an effective support, a partnership with material support. Afterwards, there are also financing choices, in other large associations, they are financed by private foundations which, in addition, participate to the destruction of the world. This is also the question. We could get more money, but we're not going to get money from the BNP, because we start from the principle that they're participating in the current destruction of the world's environment, so we're not going to allow them to launder money or to avoid tax by supporting popular ecology initiatives or whatever. We're also limited in terms of means because it's a bit of a crossroads here, i.e. we don't really do productive urban agriculture, intended to feed people, but we're a bit of a social, cultural and also ecological structure. We manage to get by with that, but it's not a lot of funding, it's a lot of calls for projects, we have to rewrite the titles every year, even though it's the continuation of the same project, the

continuation of the same dynamic. Then what could we ask for? What the city is doing at the moment, apart from the fact that there are things that don't work well, but that's not the fault of the elected representatives, it's really the fault of the city management structure, but otherwise we assume that we are fairly supported and that we are fairly calm. But there are things like that, like the provision of plant matter, for example, which is a bit basic, we shouldn't have to send 50 emails or 50 texts to get 1m3 of compost, knowing that there are tens of m3 a few kilometres away.
A. L: What you're saying, Samuel, perhaps raises the question of whether there's a guy who theorised about the two irreconcilable lefts, but I have the impression that there are two urban agricultures that are a bit irreconcilable in fact. You talk about productive urban agriculture, when you cite certain examples, and on the other side there is indeed this very social urban agriculture which still has a strong dimension. We can really see the two types, which sometimes intersect and then often end up diverging, depending on the relationship that the community has with urban agriculture, for example. This relationship between the community and urban agriculture, I think that this is where we should ask ourselves: what do communities want when they want to do urban agriculture? If, as for a project that I know well, we've been getting to know each other for four weeks - well, you see me intermittently depending on whether the SNCF brings me here or not (laughs) - but in any case, by following the famous Quartier Fertile operation proposed by the ANRU, we can see that with Quartier Fertile there is an extremely interesting instrument, moreover, proposed by the ANRU, the National Agency for Urban Renewal, where the social question, theoretically, is quite significant. Despite everything, we can see that in this call for projects, there is an injunction to massify urban agriculture, therefore to develop the economy of a territory, which is understandable given the location of the calls for projects, but at the same time it somewhat omits the social issue. We still have difficulty today, from the point of view of the community, to think about urban agriculture, and this is my point of view, having studied the issue for a few years, but there are other people who study it very well here, and they can add their grain of salt. There is always this feeling that the community prefers to be in a dimension, a very economic orientation with production because for them economy equals production - that's another debate in the debate - and in the end, we effectively lose somewhere, you were talking about it - I don't know if it was you Samuel - the popular side of urban agriculture, we clearly lose this notion, the social dimension becomes minor, almost, in the projects and especially we lose this notion of participation of the inhabitants. It is quite a powerful observation to see to what extent a city has difficulty, at the end of the day, to extricate itself from this control that it wants to exert over the inhabitants. Sometimes we even see urban agriculture - I have an example in my city but I won't develop it - but we consider urban agriculture as a vector that challenges the power of the community. I think that there is really a need on the part of the communities - some of you represent or work in communities - to ask the question of what we want to do with an urban agriculture project. From my point of view, and I think that many local authorities have not understood anything or do not want to understand - it depends on which point of view you look at it from - what urban agriculture can bring, particularly in social terms and in terms of participative democracy.
Speaker 6: Or have understood it too well and don't want it.
S: After participation, there can be many ways of doing things on a productive model. It can also mean giving priority to hiring or training people from the neighbourhood. In fact, very often there is a form of expertise of certain associations or certain collectives which will arrive on a territory but with which they will have no connection and no link, i.e. a community will solicit an association which comes from far away. When we were in conflict with the former town hall, they regularly told us: "but we don't care, if you're not happy, next year we'll take another association", as if it were in fact just an optional thing...

Stakeholder 7: Providers
S :... In fact, it's built over time, you have to be rooted in the territory if you want to gain, in inverted commas, people's trust or be able to work in complete confidence. The power to act in these areas is trust, that's really the main thing. People have to feel that they have a place in these spaces. When you bring in people who aren't from the area, who don't necessarily know the codes or the history of the district, etc., who will also propose a membership, who will propose something a bit strict and who won't have the time because they'll be obliged to work in the field at the same time, there are a whole bunch of things that can prevent that. We often say that in the end people don't want to participate, or that people aren't interested, which may be true for cultural projects, which may be a bit strange, not necessarily connected, or which may not be in tune with the emotions of people in the neighbourhoods, but in agriculture, it's false. When you open the doors, people are always ready to come in and do things. That's why, sometimes, there are associations or collectives that get subsidies in the name of people's participation and which, as you can see, don't work... There is no connection with reality. I think that's the most important thing, to succeed in creating a relationship of trust, to leave a form of autonomy to the inhabitants to be able to do things, to reappropriate things and then to be able to work in the long term.

S. D: It's interesting that you use the term "trust" because I was going to use it precisely for the link with the communities because, as you said earlier, what we'd like is to be left alone - apart from the support, etc. - so that they stop pestering us to get our land back, etc., and then no relationship. But in fact no, because in order for them to let you do something, they have to trust you and the decision-maker who leaves his land, who makes an agreement of use, has to trust the person, the association or the people to whom he is going to leave the land. And I think that it's really how you build this trust, either you build it over time because you know and finally now you are starting to be known. They know you over time, they see more or less, I imagine, what you can do, what you can't do, how you manage the thing. But that also means elected representatives or agents who know their territory well, who go there, who are able to go there in their working time to build this trust. And if they can't do it, often, I have the impression that we are moving towards that, and towards models which are a bit normalised, standardised, that is to say models which are capable of giving proof of confidence, profitability indicators, employment indicators, integration indicators, things which go a bit with the professionalisation of the job but which allow us to have confidence in the data. So there is also this whole link. And I think that this is also very much linked, on the other hand, to the mutation of the job of the development agents, the time that they can spend in the field, beyond even the elected representatives, let's not talk about it, normally it's their main occupation to know what's going on, but also of the agents, I think that it's the result of all this.
S: Afterwards, I think that this notion of trust is very important, and it also makes me think that we have to accept to trust and accept that we don't know how to do it. The current mayor's office has said that you are experts in this field, in the participation of inhabitants, in urban agroecology, and it's great what you're doing and we'll let you do it. Unfortunately, many town halls, the late communist town halls of the 93 region, I think that they lost a lot of town halls because they didn't accept that they didn't know how to do it and that there were people from the area who knew how to do it. And that, beyond that, not letting people do it because it's not you as the town hall who's going to do it, because you don't have the capacity to do it anyway, but it goes beyond that, that is to say that often - even concerning cultural projects in the cities - very often, we call upon collectives or associations who come from far away, who are not from the territory. This also shows a lack of confidence in the inhabitants and in local associations. Sometimes we prefer to call on associations that come from far away, that don't know the

area but with whom we know we can negotiate things, things like "no, we're not going to garden in the ground, we're going to make containers, okay, there's no problem anyway, we're not from the area, we're not here to take root, we're here to take on a project because we're a big association and we have to keep the association going economically and we have to take on a lot of projects everywhere. In terms of culture, it's a bit the same, so sometimes it goes well, sometimes it doesn't because there's no participation. That's where the problem arises, especially in working-class neighbourhoods, because people, by dint of experience with the State, what is the State compared to us, what are the communities, what is the power, what are the institutions? In order for people to want to participate in social life, in civic life, they must already have confidence in the person who comes to propose the space, who comes to open the space, who comes to program something. Sometimes communities organise things with great artists in places that are great with resources - I'm not telling you the waste - but nobody comes. Why is that? Because there's no link because people either don't have the information, or because they think it's another weird thing, in addition to I don't know who, we don't know, so they don't feel involved and not concerned by it. To get people moving again, you also have to recreate trust, that's very important, and so it's the same for a garden. To make people want to go through the gates of a garden and participate, they also have to feel that they have a place and that it's not something external, that comes from above, that is also controlled and observed by the community and the institutions. I think that if the communities have this in mind, there are many things that can work, but there has been a drop in participation. People participate much less, in fact, there are many fewer local associations which have much less latitude at the local level to do things, to get funding and subsidies it's more and more complicated, there are only calls for projects. All this means that today, to get people moving again, agriculture is very good, but we have to keep in mind the possibility of giving people back their desire and confidence to participate, so that they find their place, so that it doesn't seem strange or disconnected from their reality.

Speaker (PB): This is a general movement that we observe in urban policy, in the approach, I refer you to the cycles that we are going to do on associations, the evaluation of urban contracts and everything, if you want to go into more detail. But effectively, on the appearance of more and more operators, often in the form of associations, nevertheless, in inverted commas, faced with calls for projects or large thematic funding schemes. Responding to this type of funding requires a certain type of engineering, which is developed by operators, who have to respond to several and who, without local support, are unable to mobilise. As a result, for us, in the groups we set up, we see the issue of how to give value back to local competence, knowledge, i.e. social competence in setting up a district, etc., which requires a lot of time, well, you talk to us about a project which is 7 years old, which functions autonomously, and therefore we see the length of time that it takes to become established in the long term, to have these links. It's a question of saying, finally, how can we recognise these skills and perhaps the operator, when he comes, recognises this skill, so that there are associations that can be made. We feel that this is a subject that also crosses urban agriculture. I find, in reaction to what you were saying about these two urban agriculture activities : It's true that today the examples we've looked at, the communities, in particular, and I'm talking about the Territorial Food Plan, obviously have this notion of production, etc., and the stakes, as I think we saw during the four visits, are extremely high, and there's little chance that this urban agriculture will be able to solve the food problems, that's what's taken, and the social aspect... It made me think of one of the reactions, we saw Clinamen in the Georges Valbon park a few weeks ago, and so they have an urban shepherd approach, and it's a profession, they are urban shepherds. To round out the budget, they have to look for a bit of financing and, in this case, what we ask them to do is precisely social work: to take kids to school, to bring them there, etc. The person who told us this told us that they were not going to be able to do this. The person who told us

that said to us, it's not my job in fact, I do it because it's necessary to do it a little and then because we have to respond etc., but she said no, I'm a shepherd. I was wondering how the CAF, which finances social centres, social life spaces... is there coming together envisioned because what you are doing here is a social centre, a social life space and how this social vocation could be financed in urban agriculture or recognised...
S: Here, we had this reflection not long ago, on the search for funding, it's the same for the cinema, we're told you're not doing culture or art, you're doing social work, there's a whole thing every time... it teaches us not to be in the right boxes. Here, there are film screenings, meetings sometimes on politics or cultural projects, there's this festival at the end of September, there are circus shows, there are meals, there's food distribution, it's a social centre space in fact. It's true that this aspect... In urban policy we are supported, it's not big financing, we have to look for financing everywhere which is at the crossroads, sometimes it's really urban agriculture, sometimes it's social and solidarity economy... Sometimes it's urban policy. It requires a certain amount of gymnastics, but we are generally financed according to the criteria of the calls for projects because it is always participation, the democratisation of cultural practices. We are really involved every time, we don't have an employee dedicated to seeking funding, unlike other structures. It's a real job, and it's becoming more and more complicated.
Speaker ... S: And do you have any relations with the CAF or not at all?
S: The CAF? No, I think we tried once to get interested in a call for projects from the CAF? they sent us this, but afterwards these are big projects.
Intervener ... There's one type of thing you can do, it's a social life space, that is to say, without having the social centre approval, that's what you do, it corresponds totally, it's annual operating funding. And then there's another call for projects called "public and territory" on the participation of inhabitants, and there it's the same, you have possibilities.
S: I think we tried to respond to it once, but it was too much to bear.
Stakeholder: You have to look again... in any case, the social life space is something to look at.
Speaker: I think that we are also criticizing the calls for projects, it's always the same thing, instead of starting from a need and a problem, defining a project and then going to look for money, it's the call for projects that dictates the way in which we are going to do things. For example, the Quartier Fertile call for projects is very interesting because it is perhaps the first, at least to my knowledge, which gave funds on this subject and it immediately closed the approach by obliging us to do commercial work and, as a result, we can see that urban agriculture is already complicated to set up, so we cannot have the objective of feeding the population, of selling, therefore of doing commercial work, of doing social work, well, at a given moment it starts to do a lot of things. If we want to rely on the local area, its specificities, it must be a project, it can be a social project at the beginning, or there is a real will like in Romainville, whatever we say, it's a way of doing things, there's a message there which is we're going to feed the population, which is an interesting strategy, but in this case we won't be able to do social work, animation with the schools with a project like that. That's the problem with calls for projects, I think, which locks us in. There is always a need, the State directs in a direction, don't trust it to say I delegate money, don't do, perhaps, what you want but here I leave a margin of manoeuvre. The question of appropriation I found interesting, beyond the (inaudible) on the uses, for example, for a certain number of years now, sometimes I think about it, I see that there are more children in the city who play ball. We want to control everything, even urban agriculture, it's a way - as you said - of appropriating it. As soon as there's a vacant lot, you have to do something, so that it's useful. So when you play football, it's necessarily in a club. If you go and watch the Brazilians, they play in the square, we've lost something there. Right away, you have to control, you have to get them into an association, you have to occupy the field, there always has to be something, a project. It can't be left to... in a way,

doing urban agriculture is also doing a project. That's good, but there's no injunction, as you said, to urban agriculture. In short, it's open-ended, as I say (laughs)
S. D: You must remember that the ANRU Quartier Fertile was financed by the Ministry of Agriculture, the recovery plan, the funds came from agriculture and it was the Ministry of Agriculture that said I'm willing to give money but it must be agriculture, and agriculture is (inaudible). So that's it. It's a rather special set-up, even though it's a operation financed by the Ministry of Agriculture, and in the end, the players in social action must also commit themselves to these issues, which are somewhat pre-empted by agriculture, whereas the agricultural world doesn't really want to deal with them either, so it's a rather ambiguous position. We're perhaps at a turning point where the stakeholders of social action can really get involved in this. There are forums on integration through agriculture, things like that where it's starting to be structured.

Appendix 3. Online Survey of Key Performance Indicators for the three tools developed in FoodE WP2, WP3 and WP5

This survey is totally anonymous and no personal data will be collected. It is being done as part of the H2020 FoodE project (http://www.foode.eu) and the results will only be used as aggregated data.
The estimated length of this survey is 10-15 minutes as you will only be asked on your opinion on some existing choices on survey options.
By answering to this survey, you agree to these uses. Any questions can be asked by contacting the researcher in charge of this survey agnes.lelievre at agroparistech.fr
CRFSI definition:
I am participating in this survey as

- A CRFSI owner/partner
- A consumer
- Other stakeholder (policy maker, local authority, planner, funder, expert…)

CRFSI part

We have developed a simplified self-assessment tool for CRFSI owner/partner to evaluate the sustainability of their project. The score will consist of 36 different KPIs (with a qualitative score going from 1 to 5) declined in the three pillars of economic, social and environmental impacts. Here are the Key Performance Indicators (KPI) chosen, please give your opinion on their ease of measurement, comprehensibility and usefulness.

Comprehensibility

Economic assessment

		I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Organization profitability and outlook	Annual net profit margin					
	Income diversification					
	Business future					
	Sales revenue					
	Activity revenue					
	Public funding					
	Private funding					
Local economic development	Place of origin of employees					
	Locally sourced supply					
	Suppliers' practices					
Customers and users	Customers/users acquisition					
	Customers/users return					

	Customer/user expenditure					
	Customers/users reason to come back					
	Online selling					

Social assessment

		I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Job (quantity, quality, diversity)	Waged jobs					
	Contract typology					
	Aver. gross monthly salary					
	Workplace Trainings					
	Gender balance					
Community outreach, engagement & education	Frequency of events					
	Disadvantaged people					
	Connection with local producers					
	Volunteering activities					
Food quality	Product characteristics					
Food security	Production and supply characteristics					

Environmental assessment

		I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Food production/supply	Technology used for crops					
	Animal fed provenance					
	Fishing Gear types					
	Ancient cultivar or local breed					
	Characteristics of the products					
Resource use efficiency	Water saving practices					

	Electricity sources					
	Heating sources					
Waste management and circularity	Waste recycling					
	Sustainability commitment					
	Packaging and materials recyclability and compostability					
	Packaging and materials reusability					
Transport	Distance from clients/ customers					
	Type of transport to clients/ customers					
	Type of transport of supplies					

<u>Ease of measurement/data collection</u>

Economic assessment

		Really not easy to collect data	Not easy to collect data	Not sure	Easy to collect data	Really easy to collect data
Organization profitability and outlook	Annual net profit margin					
	Income diversification					
	Business future					
	Sales revenue					
	Activity revenue					
	Public funding					
	Private funding					
Local economic development	Place of origin of employees					
	Locally sourced supply					
	Suppliers' practices					
Customer and users	Customers/users acquisition					
	Customers/users reason to come back					
	Customer/user expenditure					

	Customers/users return reason					
	Online selling					

Social assessment

		Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure
Job (quantity, quality, diversity)	Waged jobs					
	Contract typology					
	Aver. gross monthly salary					
	Workplace Trainings					
	Gender balance					
Community outreach, engagement & education	Frequency of events					
	Disadvantaged people					
	Connection with local producers					
	Volunteering activities					
Food quality	Product characteristics					
Food security	Production and supply characteristics					

Environmental assessment

		Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure
Food production/supply	Technology used for crops					
	Animal fed provenance					
	Fishing Gear types					
	Ancient cultivar or local breed					
	Characteristics of the products					
Resource use efficiency	Water saving practices					
	Electricity sources					
	Heating sources					
	Waste recycling					

Waste management and circularity	Sustainability commitment					
	Packaging and materials recyclability and compostability					
	Packaging and materials reusability					
Transport	Distance from clients/ customers					
	Type of transport to clients/ customers					
	Type of transport of supplies					

Usefulness

Economic assessment

		Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Organization profitability and outlook	Annual net profit margin					
	Income diversification					
	Business future					
	Sales revenue					
	Activity revenue					
	Public funding					
	Private funding					
Local economic development	Place of origin of employees					
	Locally sourced supply					
	Suppliers' practices					
Customer and users	Customers/users acquisition					
	Customers/users reason to come back					
	Customer/user expenditure					
	Customers/users return reason					
	Online selling					

Social assessment

		Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Job (quantity, quality, diversity)	Waged jobs					
	Contract typology					
	Aver. gross monthly salary					
	Workplace Trainings					
	Gender balance					
Community outreach, engagement & education	Frequency of events					
	Disadvantaged people					
	Connection with local producers					
	Volunteering activities					
Food quality	Product characteristics					
Food security	Production and supply characteristics					

Environmental assessment

		Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Food production/supply	Technology used for crops					
	Animal fed provenance					
	Fishing Gear types					
	Ancient cultivar or local breed					
	Characteristics of the products					
Resource use efficiency	Water saving practices					
	Electricity sources					
	Heating sources					
Waste management and circularity	Waste recycling					
	Sustainability commitment					
	Packaging and materials recyclability and compostability					
	Packaging and materials reusability					
Transport	Distance from clients/ customers					

	Type of transport to clients/ customers					
	Type of transport of supplies					

Do you have any other criteria you think are of interest and should be added?
Do you think any criteria should be labelled/explained differently to make it easier/more useful?
For which purpose would you use such assessment criteria?
Do you have any other comments on this self-assessment tool being developed?

Consumer part

We have developed an online application (for mobile phones) to measure the experience of consumers in CRFSI. The customer's feedback score will consist of 5 different themes with a total of 16 Key Performance Indicators (KPI) (with a score going from 1 to 5) all qualitative. Here are the KPI chosen, please give your opinion on their ease of measurement, Comprehensibility and usefulness.

Comprehensibility

Food and Experience

	I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Quality of food					
Quality of the overall experience with the initiative					
Satisfaction according to what was previously advertised					

Economic

	I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Affordability of the products and experiences offered by the					

initiatives compared to their overall quality					
Availability of a range of products with different prices					

Environmental

	I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Measures to reduce the environmental impact of the initiative					
Eco-building materials					
Measures and strategies for avoiding waste and packaging to contribute to a circular economy					
Animal welfare					

Social

	I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Family friendly					
Facility adapted for disabled people					
Level of engagement					

of local communities					
Connection to local culture and gastronomy					

Service quality

	I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Staff disposition/attitude towards visitants and customers					
Service speed or waiting times to be attended					
Information and transparency policy					

Ease of measurement/data collection

Food and Experience

	Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure
Quality of food					
Quality of the overall experience with the initiative					
Satisfaction according to what was previously advertised					

Economic

	Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure

Affordability of the products and experiences offered by the initiatives compared to their overall quality					
Availability of a range of products with different prices					

Environmental

	Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure
Measures to reduce the environmental impact of the initiative					
Eco-building materials					
Measures and strategies for avoiding waste and packaging to contribute to a circular economy					
Animal welfare					

Social

	Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure
Family friendly					

Facility adapted for disabled people					
Level of engagement of local communities					
Connection to local culture and gastronomy					

Service quality

	Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure
Staff disposition/attitude towards visitants and customers					
Service speed or waiting times to be attended					
Information and transparency policy					

<u>Usefulness</u>

Food and Experience

	Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Quality of food					
Quality of the overall experience with the initiative					
Satisfaction according to what was previously advertised					

Economic

	Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Affordability of the products and experiences offered by the initiatives compared to their overall quality					
Availability of a range of products with different prices					

Environmental

	Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Measures to reduce the environmental impact of the initiative					
Eco-building materials					
Measures and strategies for avoiding waste and packaging to contribute to a circular economy					
Animal welfare					

Social

	Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me

Family friendly					
Facility adapted for disabled people					
Level of engagement of local communities					
Connection to local culture and gastronomy					

Service quality

	Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Staff disposition/attitude towards visitants and customers					
Service speed or waiting times to be attended					
Information and transparency policy					

Do you have any other criteria you think are of interest and should be added?
Do you think any criteria should be labelled/explained differently to make it easier/more useful?
For which purpose would you use such assessment criteria?
Do you have any other comments on this self-assessment tool being developed?

Other stakeholder (policy maker, local authority, planner, funder, expert…)

We have developed a simplified self-assessment tool for CRFSI owner/partner to evaluate the sustainability of their project and to use it for improvement or advertisement, in part through the FoodE application which will inventory these initiatives. The score will consist of 47 different KPIs (with a qualitative score going from 1 to 5) declined in the three pillars of economic, social and environmental impacts. We have also identified some indicators which could prove interesting to sponsors (entities which helps CRFSI during installation or once opened by giving/lending land, financial help, technical expertise, material or labour resources). Please give your opinion on their ease of measurement, Comprehensibility and usefulness.

Comprehensibility

Economic assessment

		I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Organization profitability and outlook	Annual net profit margin					
	Income diversification					
	Business future					
Local economic development	Provenance of employees					
	Locally sourced supply					
	Suppliers' practices					
Customer and users	Customers/users acquisition					
	Customers/users return					
	Customer/user expenditure					
	Customers/users return reason					
	Online selling					

Social assessment

		I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Job (quantity, quality, diversity)	Waged jobs					
	Contract typology					
	Aver. gross monthly salary					
	Workplace Trainings					
	Gender balance					
Community outreach, engagement & education	Frequency of events					
	Disadvantaged people					
	Connection with local producers					
	Volunteering activities					

Food quality	Product characteristics					

Environmental assessment

		I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand
Food production/supply	Technology used for crops					
	Animal fed provenance					
	Fishing Gear types					
	Ancient cultivar or local breed					
	Characteristics of the products					
Resource use efficiency	Water saving practices					
	Electricity sources					
	Heating sources					
Waste management and circularity	Waste recycling					
	Sustainability commitment					
	Packaging and materials recyclability and compostability					
	Packaging and materials reusability					
Transport	Distance from clients/ customers					
	Type of transport to clients/ customers					
	Type of transport of supplies					

Other criteria

	I do not understand what it is	Not easy to understand	Not sure	Easy to understand	Very easy to understand

Ability to integrate into the neighbourhood					
Contribution to the inclusion of vulnerable populations					
Complementarity with the rural farms of the area					
Fostering of social ties					
Contribution to heritage preservation					
In line with the strategy of the sponsor					
Ethical staff management					
Land tenure risk management					
Management of regulatory aspects					
Innovative nature of the project/Participation in the evolution of knowledge					
Credibility of the project leader / Robustness of the project's governance					

Ease of measurement/data collection

Economic assessment

		Really not easy to measure	No easy to measure	Not sure	Easy to measure	Really easy to measure
Organization profitability and outlook	Annual net profit margin					
	Income diversification					
	Business future					
Local economic development	Provenance of employees					
	Locally sourced supply					
	Suppliers' practices					

Customer and users	Customers/users acquisition					
	Customers/users return					
	Customer/user expenditure					
	Customers/users return reason					
	Online selling					

Social assessment

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Job (quantity, quality, diversity)	Waged jobs					
	Contract typology					
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	Gender balance					
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	Disadvantaged people					
	Connection with local producers					
	Volunteering activities					
Food quality	Product characteristics					

Environmental assessment

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Food production/supply	Technology used for crops					
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Resource use efficiency	Water saving practices					
	Electricity sources					

	Heating sources					
Waste management and circularity	Waste recycling					
	Sustainability commitment					
	Packaging and materials recyclability and compostability					
	Packaging and materials reusability					
Transport	Distance from clients/ customers					
	Type of transport to clients/ customers					
	Type of transport of supplies					

Other criteria

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Contribution to the inclusion of vulnerable populations					
Complementarity with the rural farms of the area					
Fostering of social ties					
Contribution to heritage preservation					
In line with the strategy of the sponsor					
Ethical staff management					
Land tenure risk management					
Management of regulatory aspects					
Innovative nature of the project/Participation in					

the evolution of knowledge					
Credibility of the project leader / Robustness of the project's governance					

Usefulness

Economic assessment

		Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Organization profitability and outlook	Annual net profit margin					
	Income diversification					
	Business future					
Local economic development	Provenance of employees					
	Locally sourced supply					
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	Volunteering activities					

Food quality	Product characteristics					

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	Heating sources					
Waste management and circularity	Waste recycling					
	Sustainability commitment					
	Packaging and materials recyclability and compostability					
	Packaging and materials reusability					
Transport	Distance from clients/ customers					
	Type of transport to clients/ customers					
	Type of transport of supplies					

Other criteria

	Not useful for me at all	No really useful for me	Could be useful for me	Useful for me	Very useful for me
Ability to integrate into the neighbourhood					
Contribution to the inclusion of					

vulnerable populations					
Complementarity with the rural farms of the area					
Fostering of social ties					
Contribution to heritage preservation					
In line with the strategy of the sponsor					
Ethical staff management					
Land tenure risk management					
Management of regulatory aspects					
Innovative nature of the project/Participation in the evolution of knowledge					
Credibility of the project leader / Robustness of the project's governance					

Do you have any other criteria you think are of interest and should be added?
Do you think any criteria should be labelled/explained differently to make it easier/more useful?
For which purpose would you use such assessment criteria?
Do you have any other comments on this self-assessment tool being developed?