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HOLiFOOD Living Lab Guidelines

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HOLiFOOD Living Lab Guidelines

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Executive summary

The current document, titled HOLiFOOD Living Labs Guidelines, has been developed within the framework of the HOLiFOOD project which is funded by the European Union's Horizon Europe Research and Innovation Programme under Grant Agreement No 101059813.
The purpose of this document is to support the project team of HOLiFOOD in the setting up of three Living Labs (LLs) and related activities characterized by a participatory approach.
The objective of the document is to support the implementation and development of participative and open research approaches, offering solid guidelines to a successful preparation, facilitation, analysis and evaluation of participative events. The intention is to allow partners to use the "Living Lab" approach as an opportunity for co-creation of new knowledge, considering the planning of these engagement opportunities in their full potential.

The document presents the overall concept and approach of Living Labs (LLs) in chapter 2 and provides in chapter 3 a comprehensive overview of their application in HOLiFOOD, including the legal compliance to be reckoned with. Chapter 4 provides methodological guidelines and tools for their implementation within the HOLiFOOD project, the reporting, analysis and feedback afterwards. The last chapter 5 reports about the training for the LL Managers and Facilitators.

More specifically, the document describes the Living Labs setting as a fruitful environment to address complex food safety-related topics on a systemic level, as it allows to fill data gaps and develop, demonstrate and test in co-creation forms new tools, models and approaches. It explains the rationale behind the use of multi-actor approach in HOLiFOOD and its potential to improve the dialogue between science and society.
After identifying the key principles for delivering successful engagement of projects' relevant actors, the document explores how the development of products and services can be guided by, for and/or with end-users and those who will be impacted by design. It then analyses the process of stakeholders mapping and stakeholders selection and the concept of engagement plan strategy. It underlines the importance of reaching inclusive participation to maximize gender representation per stakeholder group and highlights that LL Managers and Facilitators should act as inclusive leaders, ensuring that a diversity of employees/participants feel included and that their perspectives improve an organisation/project's strategy, work, and values for success.
The document then recommends some tools that can be concretely used in the different Living Labs phases and explains how within HOLiFOOD, LL Managers and facilitators have been trained on the LL process, objectives and organizational aspects.

1. Introduction

1.1. HOLiFOOD

The overall objective of HOLiFOOD is to improve the integrated food safety risk analysis (RA) framework in Europe to i) meet future challenges arising from Green Deal policy driven transitions, in particular in relation to climate driven changes, ii) contribute to the UN's Sustainable Development Goals, and iii) support the realization of a truly safe, secure and sustainable food production. HOLiFOOD will apply a system approach, considering the whole environment in which food is being produced, including economic, environmental, and social aspects. Its focus is on three supply chains (i.e., cereals [maize], legumes [lentils] and poultry [chicken]) as case studies.

HOLiFOOD acknowledges that the complexity of the challenges requires common, shared and multi-actor actions within Research and Innovation. To unlock the potential of R&I and to deal with the complex linkages within the food systems, the overall R&I landscape should be "inclusive, transparent, intersectoral, multi-stakeholder, multi-factorial, interdisciplinary and transdisciplinary" (den Boer et al., 2022). However, at present, the R&I scenario is lacking comprehensive engagement with wide parts of the food system, while more often compartmentalized approaches have been adopted, contributing to solutions within specific food sectors. This can result in undesired and unintended consequences of the implementation of (socio-technical) innovations (Baungaard et al., 2021). HOLiFOOD is eager to use the multi-actor or stakeholder approach by working through Living Labs (LLs) to ensure the voices and ideas of end-users and who will be affected are included and to optimally prevent final products or services fail or create undesired and unintended impacts.

In HOLiFOOD, Artificial Intelligence (AI) and big data technologies will be used in the development of early warning and emerging risks prediction systems for known and unknown food safety hazards. In addition, tools, methods and approaches will be developed for hazard detection, which will be targeted and non-targeted, as well as new holistic risk assessment methods which embed food safety risk in a comprehensive cost-benefit analysis of the food system while including positive and negative health, environment and economic dimensions.

As result, an effective impact pathway will be developed to implement the HOLiFOOD outputs integratively into the legal framework associated with the food risk analysis process. The elaboration of the impact pathway will be supported by an electronic data and knowledge sharing platform aiming at the full digitalization of food (safety) systems and supporting an inclusive approach on transparency and impact for all stakeholders. To align with stakeholder priorities, preferences and user requirements, the HOLiFOOD innovations will be designed and tested following an inclusive multi-actor approach (i.e., Living Labs) which involves all relevant stakeholders (e.g. authorities, food producers and citizens) with specific attention for inclusion of historically not well represented groups, e.g. of women, esp. women farmers and consumers, and of relevant minorities.

1.2. Introduction to this document

The presented Deliverable 4.1 "Living Labs Guidelines" relates to WP4: "Stakeholder engagement and codesign in living labs.", led by APRE and running from M1-M48. This deliverable 4.1 is the specific outcome of Task 4.1.: "Setting up the HOLiFOOD Living Labs" which involves the following partners: WR, UNEW, AGROKNOW, DIA, UVMB and is running from M1 to M8.

The Work Package 4 has the goal to bridge the gap between research and practice by facilitating discussions among the stakeholders, including researchers, while systemically integrating the Multi Actor Approach (MAA) into all HOLiFOOD activities. The HOLiFOOD innovations will be designed and tested by using a multi actor approach with all stakeholders and their representatives (e.g., authorities, food producers and citizens). Appropriate co-creation methodologies have been systematically integrated into all HOLiFOOD activities, for example through application of Living Labs (LL), citizen science and crowd sourcing. The involvement of stakeholders has great relevance to the overall project development: the project recognizes the multiple stakeholder and food system perspectives as the best approach to providing well-supported and feasible, thus well thought-through and effective solutions to the complexity of challenges connected with risks within the food sector. Integration of interdisciplinary expert knowledge into system design and impact pathways will ensure that activities align with societal needs, and will be rapidly adopted within end-user communities.

Work Package 4 will establish three virtual HOLiFOOD Living Labs (LLs), with a focus on the following priorities within the HOLiFOOD project and corresponding with tasks under other Work Packages:

1) **Identification and monitoring of food safety risks:** to support the identification, development, testing and optimizing tools, models and approaches (WP1).
2) **Holistic risk assessment and acceptance:** eliciting priorities concerning identified and detected gaps in available data, and filling data gaps for risk assessment and acceptance (WP3-WP5).
3) **Platform co-design:** to support the interaction on WP6 platform in order to understand what the stakeholders need and the improvement of tools in real scenarios (WP6).

The series of Workshops will follow the innovation development phases approach (see also 3.1) which are all led by the co-creation principle:

- **The first round of Workshops**, **the "Exploration" phase** (organized on site) focuses on the priority-setting of each lab as a basis to the set-up of an action plan.
- **The second round of Workshops, the** "**Experimentation" phase** (organized online) comprises two workshops; one to discuss and verify the action plan, and one to evaluate mid-term results.
- **The third round of Workshops, the "Evaluation" phase** (organized on site) evaluates the output of the lab process and develop recommendations for further exploitation.

For each of the three established LLs, the project partners appointed one Manager and one Facilitator. Each LL will run a series of 4 workshops (12 in total) involving 5/6 participants from the HOLiFOOD consortium + 9/10 external stakeholders. To ensure the successful implementation of the 12 workshops,

the Managers and Facilitators will be supported by specific methodological guidance, described in the present document.

1.3. Purpose and set-up of the document

The primary purpose of this document is to support the HOLiFOOD project team in setting up the three Living Labs (LLs) and related activities. Especially, the Managers and Facilitators who will run the 12 LL workshops are considered benefiting from the presented guidelines to understand why LLs are beneficial for Research and Innovation settings, why these are selected for the present project, and how these can contribute to the overall project strategic objectives. Moreover, this guideline document serves also as a support document for the online training by APRE conducted at M7, and described in this document, in which the main conceptual characteristics, techniques and tools to be used in LLs have been explained to the selected Managers and Facilitators.

The document presents the overall concept and approach of Living Labs in chapter 2 and in chapter 3 provides a comprehensive overview of their application in HOLiFOOD, including the legal compliance to be reckoned with. Chapter 4 provides methodological guidelines and tools for their implementation within the HOLiFOOD project, the reporting, analysis and feedback afterwards. The last chapter 5 reports about the training for the LL Managers and Facilitators.

2. Multi-actor approach through Living Labs

2.1. Multi-actor approach with all stakeholders

HOLiFOOD uses a multi-actor approach (MAA) to design and test innovations by involving all stakeholders and their representatives (e.g., authorities, food producers and citizens). This means the inclusion of *"any group or individual who can affect or is affected by the achievement of the organization's objectives."* (Bezzi et al., 2019). It also means that partners with complementary types of knowledge – scientific, practical and other – must join forces in the project activities from beginning to end (EIP-AGRI, 2017).

The so-called multi-actor approach with stakeholder engagement is the systematic engagement and participation in the identification, analysis, planning and implementation of actions that will influence stakeholders' interests or aspects of their lives. Such involvement can be ensured by identifying the key groups affected, ask for their input according to their worries, ideas, priorities, and preferences and how to ensure that those are discussed and weighted. A multi-actor approach or stakeholders' engagement strategy is developed to support and improve the dialogue between science and society, supporting the need of science for trust, input and consensus of and from societal actors.
The following key principles for delivering successful engagement of all the project relevant actors are identified (Freeman & Mcvea, 2001):

1. **Communicate**: share information from and to the stakeholders
2. **Create safe and brave spaces to enable all involved can engage and be heard:** build good relationships and trust
3. **Consult**: agree on requirements and deliver negotiated solutions
4. **Understand**: understanding the root causes of the stakeholders' perspectives and behaviours will help to assess how to maintain a productive relationship
5. **Plan**: carefully plan before engaging is recommended

2.2. Living Labs: Overview and changing principles

The origin of the Living Lab (LL) concept goes back to 2000 when Prof. William Mitchell at Massachusetts Institute of Technology first introduced it to describe a user-centric research methodology to approach complex solutions in a multiple-faceted context. In Europe, the concept of Living Lab took off in 2006 with the setting up of the pan-European Network of Living Labs (ENoLL) which now includes more than 400 members. During the same year, two EU funded projects elaborated on the general idea (Eriksson et al., 2006; Van Geenhuizen, 2019; Compagnucci et al., 2020; Veeckman et al., 2013). From 2006, LLs were gradually adjusted for co-creation purposes. In 2009, the European Commission defined a LL as "a user-driven open innovation ecosystem based on a business-citizens-government partnership which enables users to take active part in the research, development and innovation process".

LLs currently are acknowledged for their co-creation application; these are seen as dynamic multi-stakeholder networks tackling the challenge to co-develop user-driver innovative processes within real-

world setting (Pino et al., 2014). This aligns with the explanation at the ENoLL website that states that "Living Labs (LLs) are open innovation ecosystems in real-life environments using iterative feedback processes throughout a lifecycle approach of an innovation to create sustainable impact. They focus on co-creation, rapid prototyping & testing, and scaling-up innovations & businesses, providing (diverse types of) joint-value to the involved stakeholders. In this context, LLs operate as intermediaries/orchestrators among citizens, research organisations, companies, and government agencies/levels. Within a wide variety of living labs, they all have common characteristics, but multiple different implementations." In 2020, Sabat & Sabat considered the LLs' main goal to create value by developing useful and usable products and/or services (Sabat & Sabat, 2020).

Various types of LLs can be defined by the environment on which these focus (Ståhlbröst et al., 2012). According to their typology, HOLiFOOD purposes will work in **Intermediary LLs** in which various partners or stakeholders are invited to collaboratively work in a neutral arena and **Time limited LLs** for the support of a project.

Currently, there is no consistent or commonly accepted definition of LLs. LLs have been defined as a methodology, an organization, a system, an arena, an environment, and/or a systemic innovation approach. Within HOLiFOOD, the Living Labs definition applies best is as both an environment (milieu, arena) and an approach (methodology, innovation approach).
Mostly, the key components for LLs as listed by Bergvall-Kåreborn et al.(2016) and Boncio et al. (2017) are generally accepted. These components include:

1) **User-centric**: users who will be using the product/service that is to be designed/ tested/validated (individual citizens, associations, companies, institutions, etc.) must be involved.
2) **Co-creation**: user engagement should happen at all stages of the development and operation process of the LL. From a methodological point of view, LLs promote the development of new "formats" that underline the role of the end users and those who will be impacted rather than inventors or developers of products, services and social infrastructures.
3) **Real-life context/situations**: user involvement must take place in reality related conditions that is, living or working environments that are not artificial environments as labs or experimental fields. End users should have the opportunity to test prototypes for a sufficiently long period of time and in the same "real life" conditions in which they would be used if released. This allows to increase both the quantity and the quality of feedbacks, in a phase of development during which modifications for improvement are still feasible and relatively cheap, and which allows to avoid unexpected and unwanted failure or negative impacts.
4) **The generation of social services, products and infrastructure**: Living Labs also witness the shift from technological innovation to social innovation, which involves allowing citizens or consumers to find new applications for innovative products and services that perhaps would have never occurred if designers worked on their own in their laboratories.
5) **Open innovation**: the active and constant involvement of end users brings innovation out of the boundaries of R&D laboratories and opens up to all possible sources of innovation, internal and external to a lab or company (customers, suppliers, employees, etc.), favouring their involvement in transparent and often non-codified processes.

Vicini et al. (2012) reiterate combining the key components within four main concurrent phases to ensure an iterative and reflective approach, in which a starting point is not defined and the LL process can be commenced at any stage of the design in an open–innovative context (*Figure 1*):

- **Co-Creation** includes the analysis of the context of interest, the ideation of services/products, and the co-design of those services/products with users. The most commonly used tools in the co-creation phase are focus groups, interviews, brainstorming sessions and questionnaires.
- **Exploration as a "testing" phase** involves the exploration of analysis, results and primary conclusions with possibly quick prototyping and fake mock-ups, or, for instance, reflexive trials with simulation or logic frames pathways.
- **Experimentation as a "testing" phase** involves the Test Phase and the Data collection. Examples of methodologies in the area are testbeds and trials, and ethnographic methods.
- **Evaluation as "assessment" phase** is the phase when validation, data analysis, professionals' evaluations and/or focus group can be used to reach the final conclusions.

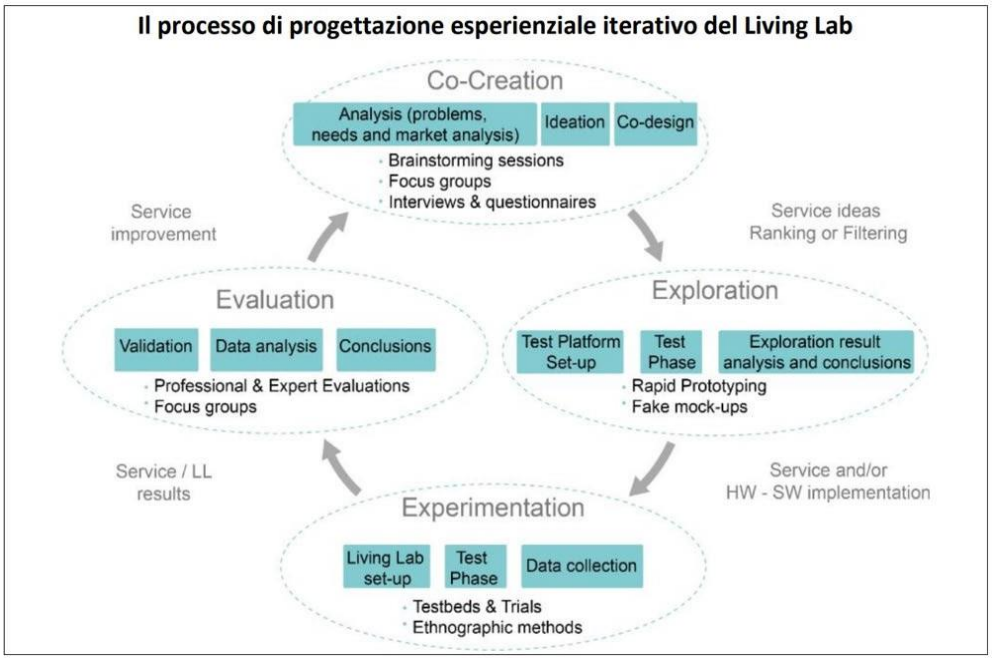

Figure 1 - A visual representation of the Living Lab process. Source: Vicini et al., 2012

While there is a lot to learn from LLs in the information and technology sectors because these are quite well established in these sectors, it must be analysed how these must be adjusted for the agri-food sector. In this context, Beaudoin et al. (2022) point at the diversification of stakeholders, the identification of key dimensions of evaluation and of ways to assure their effectiveness.

2.3. Levels of participation in Living Labs

Projects that involve Living Labs as HOLiFOOD does, recognize that users should not be seen only as passive sources of information, as the European Network of Living Labs (EnoLL) states: **"One thing is common for all of us; the human-centric involvement and its potential for development of new ICT-based services and products"** *(Open Living Labs).*
The challenge is therefore understanding how the development of products can be guided by end-users and those who will be impacted by design. Three different design approaches have been developed to address this:

- **Design <u>for</u> users**

As the term indicates, products and services are produced for users. Users play a relatively passive role and are designated as consumers of technical expertise (Beath and Orlikowski 1994), providing feedback on items such as requirements specifications and working prototypes.
In this approach, users do not interfere in any way with the design process itself and their input is limited to consultations through which they can participate by sharing insights, suggestions, but not through direct influence of the design nor of the design process. The intention of the developers is to gather as much insight as possible into the actual context of use of the products and services. Developers have the role to control: they initiate the process, manage it and shape the 'solution space' (von Hippel 2001).

- **Design <u>with</u> users**

This second approach involves continuous participation and knowledge exchange between users and developers in order to produce and optimize the final products and services.
It is an iterative process in which users and developers interact continuously: the fundamental principle underlying this approach is that users have the right to influence the development of a product/service as in the end they will be impacted by it. In this sense, even though developers still manage the process in terms of feasibility of technical aspects, users are not mere informants but are integrated into the design through active involvement, acting as collaborative "agents of change".

- **Design <u>by</u> users**

This third approach is almost the reverse of design for users. In fact, the entire design process is initiated, controlled and managed by users themselves while the developers are involved to play a consultative, supportive role. While this approach enables the gathering of instances and needs of a large group of users through the openness of the design process, it requires specific capabilities and may run the risk of suboptimal profiting from experts and influential companies.

The three approaches can be used within the same design process without one excluding the other. In fact, by integrating different techniques and methodologies, it is possible to converge the three different levels of participation depending on the design step.

Design and development of the production of products and services in HOLIFOOD is geared towards using different approaches at different stages of the project lifecycle. In the beginning of the project, users will not interfere with the design process itself; afterwards, through participation in Living Labs,

they will start to support the fine-tuning of the products/services, acting as collaborative "agents of change".

2.4. Examples of LLs in the Food domain

2.4.1. The FRACTALS project

The EU-funded FRACTALS project (Future Internet Enabled Agricultural Applications) funded the co-production with 46 small and medium-sized enterprises (SMEs) of a portfolio of revolutionary FIWARE-based applications targeting the agricultural sector.

The primary goal of the project was to support start-ups and SMEs in the agrifood sector across Europe, aiding them in achieving a better market position by innovative ICT solutions. To this end, the project established a Living Lab, PA4ALL, through which 20 sub-projects conducted real-life testing and validation. The PA4ALL Living Lab also included users from outside Serbia (the project's target country) to expand its reach. Additionally, it involved users who were not highly tech-expert to ensure the results were not biased (Malmberg, 2017).

The project employed two primary categories of methodologies:

- Brainstorming and workshops to generate solution ideas.
- Service design workshops and similar sessions to collaboratively develop the solution.

The objective was to adapt and refine various methodologies for optimal results. Consequently, during speed-dating sessions, farmers and technology experts were encouraged to brainstorm on agricultural needs. After identifying the needs and challenges, they collaborated to develop technical solutions beneficial to both parties.

2.4.2. The FoodSafety4EU project

FoodSafety4EU is an EU funded collaborative action to support the European Commission (EC) in shaping the Food Safety System of the future. The project will deliver solutions to support the EC in its endeavour to align research, policy and innovation with the societal needs and perspectives and improving food safety across Europe.

The project aims at designing, developing, and releasing a multi-stakeholder platform and innovative digital tools to support citizens, scientists, companies, EC, EFSA, and Food Safety Authorities to co-design and shape together the future Food Safety System in Europe. The project is running 4 Food Safety Operational Labs (FSOLabs) implementing the Social Lab approach defined as "platforms for addressing complex social challenges" (Hassan, 2014). In particular, the first FSOLabs dealing with Risk Assessment, the second, and the third relate to Risk Management; the fourth is focusing on Risk Communication. The integration within the different WPs was assessed as crucial for the good development of the Labs (*Figure 2*).

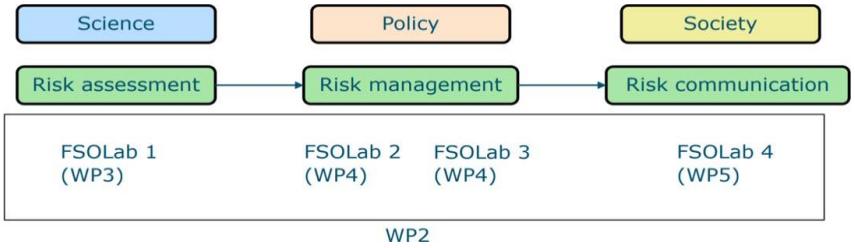

Figure 2 - Connection between stakeholders' groups- risks and FSOLab

The methodological approach entailed three Learning cycles:

- Learning cycle 1: Identifying, selecting pilot ideas and actions. Pilots have been identified.
- Learning cycle 2: Discussing, improving, and adapting pilot actions and addressing global challenges. In between Cycle 2 and 3, the pilots have been performed.
- Learning cycle 3: Evaluating pilot actions, options for development, exploitation, and recommendations.

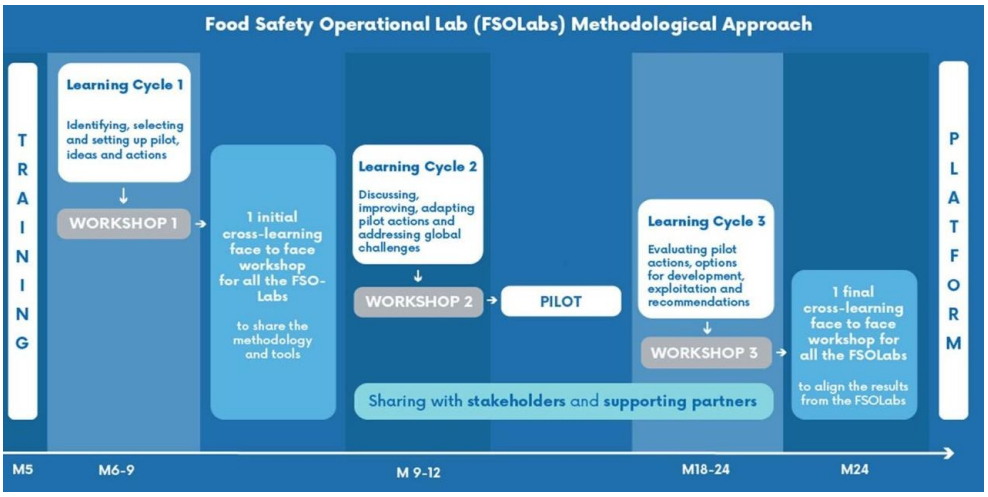

Figure 3 - Food Safety Operational Lab-Methodological Approach

Cycle one was characterized by stakeholders co-creation (*Figure 3*): participants with different backgrounds were involved (1/3 science, 1/3 Ngo-Industries). This is a group that is expected to be extended along the time due to connections between personal networks and turnovers. Lots of different emerging risks were collaboratively collected, and participants were scoring the emerging risks depending on their personal experience.

The FoodSafety4EU experience´s feedback suggested to start the training with a start-up workshop to introduce the methodology and the topics upfront plus support participants to get to know each other. This "workshop 0" lasted 4 hours, pre-defined data were collected to start the discussion and saving time. Questions and answers were also collected among the participants. Data were aggregated in a table while taking into consideration the feedback in data that were gathered and displayed in the MIRO boards through co-creation activities. The resulting table appeared useful as a checking point for

participants and as a starting point for the following workshop. The multi-stakeholders approach gave different answers for solving issue dependent on the stakeholder group: scientist, policy makers, citizens.

The participants were asked about their experience and the majority agreed that the Living Lab was a good experience for exchanging ideas among different actors. The Living Lab was considered as a "feasibility" check for scientists through which they got the opportunity to interact with politicians, and have quick access to networks. Very important feedback came from the final round table, which underlined the existence of already defined answers from the scientist community, which are not always translated into concrete applied policies and often known by citizens.

3. Living Labs in HOLiFOOD

The emerging food safety issues require a wide diversity of food system actors working together, avoiding the traditional top-down approach (from the researcher to the users) (EIP-AGRI, 2017). To achieve this, a structured co-design model, defined as a "transparent process of value creation in ongoing, productive collaboration with, and supported by all relevant parties, with end-users playing a central role and covering all stages of a development process", is needed (Jansen &Pieters, 2017).

Starting from these specific needs and challenges, the Living Labs setting offers a fruitful environment to address complex food safety-related topics on a systemic level: innovative solutions, new technologies and experiences. The establishment of LLs where data gaps can be filled and new tools, models and approaches can be developed, demonstrated and tested in co-creation forms the starting point and foundation of the HOLiFOOD partnership.

The multi-actor approach allows in fact to focus on real problems or opportunities and to engage end-users, in this case within the food sector, whose active participation can be a strong contribution for researchers. It follows the definition of Living Labs (LLs) as user-centered, open innovation ecosystems based on systematic user co-creation approach, integrating research and innovation processes in arenas where both open innovation and user innovation processes can be studied. In line with the European Network for Living Labs, HOLiFOOD takes LLs as intermediaries among the so-called quadruple Helix (Civil society, Public Administration, Business and Research & Education) for joint value co-creation and validation. LLs are seen as acting as 'brokers' between citizens and organizations (academia, local government, private companies etc.), ensuring that each participant is able to contribute its knowledge and experience.

3.1. Roles and responsibilities in HOLiFOOD LLs

The HOLiFOOD project, within WP4, will set up 3 virtual Living Labs, for addressing the following priorities addressed within HOLiFOOD project and corresponding Work Packages:

- **HOLiFOOD LL1:** Identification and monitoring of food safety risks: to test and optimize tools, models and approaches developed (WP1);
- **HOLiFOOD LL2:** Holistic risk assessment and acceptance: eliciting priorities and filling data gaps for risk assessment (WP3);
- **HOLiFOOD LL3:** Platform co-design: to support the interaction on WP6 platform in order to understand what the stakeholders need and the improvement of tools in real scenarios (WP6).

In Task 4.1 (M1-M8), the project consortium will set up the Living Labs. Each Lab will appoint at least one Lab Manager and one Lab Facilitator, sharing the responsibilities related to the coordination of the activities and ensuring the effective exchange of knowledge among LLs participants.

Living Lab Managers

Each LL is managed by at least one LL Manager who will be responsible for putting together the LL team and stakeholder group under the guidance of the APRE and the LLs guidelines, and for running the workshops. The LL Managers will be responsible for the alignment of workshops outcomes to the project (and Work Packages) objectives and will provide information for dissemination of results. The LL Managers will also connect with the other LLs to align the activities in the overall context of the HOLiFOOD project.
The LL managers organize the workshops (online and in presence), set up the dates, and inform and invite the participants. In close collaboration with the LL Facilitator, each LL Manager prepares the (virtual) rooms and all materials or additional tools as required.
LL Managers are responsible for documenting the workshops and lab activities, including ensuring that reporting templates are filled in and sent in due time.

Living Lab Facilitator

The Lab Facilitators are responsible for facilitating the exchange within the Lab and the workshops.
During the workshops they communicate the rules and foster team building, they are neutral to the discussion, and they do not contribute to the technical/scientific content of the discussion. Their responsibility is to steer the discussion among participants and make sure that all voices are heard, and no one is left behind.
They support the Lab Managers in the preparation of the workshops and they contribute to the documentation and reporting of workshop results, according to the current guidelines.
The facilitator should act as an active listener, checking the message is conveyed to the whole group by summarizing the discussion or clarifying details. At the same time, in the group management, the facilitator should support the group to not lose track of the topic discussed, to steer the process as planned (keeping the schedule is important) and to make sure that all participants are actively involved.
Table 1 summarizes roles in the three virtual HOLiFOOD Living Labs.

Living Lab	Lab Manager	Lab Facilitator
HOLiFOOD LL1: Identification and monitoring of food safety risks: to test and optimize tools, models and approaches developed (WP1)	WR	UNEW
HOLiFOOD LL2: Holistic risk assessment and acceptance: eliciting priorities and filling data gaps for risk assessment (WP3)	INRAE	UNEW
HOLiFOOD LL3: Platform co-design: to support the interaction on WP6 platform to understand what the stakeholders need and the improvement of tools in real scenarios (WP6).	AGROKNOW	EUFIC

Table 1 - HOLiFOOD virtual Living Labs roles

Living Lab members

The LL participants will represent in a balanced way the actors operating in the food safety risk sector (research, laboratories, food safety services, consumers, industry and farmers associations, communicators, etc), including at least one representative from risk assessors and/or risk managers and at least one representative of HOLiFOOD value chains (i.e., cereals, legumes and poultry). Representatives of other EU-funded food safety risk assessment projects and initiatives (e.g., FoodSafety4EU, EIP-AGRI, EEN, etc) will be invited. Each LL will be composed of 5/6 HOLiFOOD consortium members and 9/10 external stakeholders. EU policymakers and experts from EFSA will be invited to support the process, when needed and relevant. Depending on the timing of the different activities in the context of the LL, specific members can be invited to participate to the process or to specific workshops. The LL members will be selected according to the stakeholder mapping exercise (see section 4.1 on stakeholders' selection).

The Lab members are supposed to be (and feel) part of a team. Therefore, beyond the team composition, team building activities to support this process are extremely important. In the team development, the following stages should be considered (Tuckman,1965):

1) **Forming,** the team starts to work together and establish the ground rules. Formality is still in place and group members still feel as strangers.
2) **Storming,** members start to communicate and exchange views, but they still consider themselves as individual and not part of a team. There may be resistance to group control and/or leadership.
3) **Norming,** members start feeling part of the group and accept other points of view.
4) **Performing,** the team works in a trusting atmosphere.
5) **Adjourning,** the team assess the work done to fine-tune the work performed. Roles and members contribute are considered.

The LL management team (including the facilitator) should facilitate this process through team building activities (e.g., planning ice-breakers exercise to get the participants more comfortable with each other or planning informal encounters among the lab participants). Clear communication and transparency on goals, requests and limitations of the labs will foster the building of trust towards the process as well as its living lab team.

3.2. Timing and activities

Each LL will run 4 workshops, as per T4.2, following the "innovation development" phases approach:

a. **Exploration,** consisting of 1 workshop for each LL, preferably as F2F event, planned by M12. The focus is on the priority-setting within each LL as basis for the set-up of an action plan for the LL activity.
b. **Experimentation,** consisting of 2 online workshops for each LL, planned by M24 and M34. In these workshops, the action plan will be discussed and verified, and the mid-term results will be monitored and evaluated.

c. **Evaluation,** consisting of 1 workshop for each LL, preferably as F2F event, planned by M44. The focus will be on one side the evaluation of the outputs of the LL and, on the other side, the discussion on further exploitation of the activities.

While the three Living Labs will follow the same structure of the workshops as detailed above, the detailed program of each workshop will be adapted according to the topic and the needs of the labs, taking emerging information and unexpected events into account.

3.3. Legal Compliance

The following section outlines fundamental legal and ethical issues for the execution of Living Labs.

3.3.1. Personal data requirements

Whenever personal data or information relating to an identified or identifiable natural person is processed[1], special care must be taken and compliance with the GDPR is mandatory. In order to execute the LL, it is foreseen that the following personal data of stakeholders will be processed:

- Names
- Contact details.
- Organization's
- Roles and Job titles
- Geolocation data
- Demographic information (such as gender, age)

At this stage, the collection and processing of special categories of personal data is not intended. According to Article 9 of the GDPR, special categories of personal data include racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric data, data concerning health and data concerning sex life of sexual orientation. The processing of these categories of data is strictly prohibited unless one of the grounds listed in Article 9(2) is applicable. However, the requirements outline in Article 9 are not currently applicable, as special categories of personal data will not be processed in the context of the LL.

[1] 'Processing of personal data' means any operation (or set of operations) performed on personal data, either manually or by automatic means such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure, or destruction (Art 4(2) GDPR).

3.3.2. Legal basis through informed consent

In the LLs external parties, stakeholders, will participate in the research of HOLiFOOD. Consent according to Article 6(1)(a) GDPR is the legal basis. The processing of personal data is lawful when it is based on a legal basis outlined in Article 6 of the GDPR[2]. Processing in the context of the LLs will be based on the informed consent of the data subjects[3]. Informed consent is an essential building block of research ethics and data protection law.

The HOLiFOOD consortium acknowledges these requirements. As outlined in the DMP (D8.1), all external stakeholders will be asked for their consent to participate in the research project and for the processing of their personal data. Before involving participants in the research project, we will provide them with an explanation of the research purpose, the extent of their involvement, any potential risks involved, and all information required by the GDPR. Once participants have received and understood all these information, we will ask for their explicit consent to include them in the research project, as outlined in Articles 4(11) and 7 of the GDPR[4].

HOLiFOOD will provide information sheets to partners with clear information about the project as well as the involvement of the stakeholders in the project and the processing of any personal data. In accordance with the GDPR, participants will be informed in clear language of the purpose and means of processing of their data, and of their rights, including their right to withdraw their consent at any time. This consent will cover the lifetime of the project and will allow for stakeholders to participate in multiple calls and workshop organised by the HOLiFOOD Consortium. A single consent request will ensure that all legal requirements are met without overburdening stakeholders. However, a high level of protection of stakeholder's personal data will be secured. Once the consent is given, only joint controllers (see below) will have access to the personal data of stakeholders.

The informed consent will be sought via electronic means through the HOLiFOOD website. This is in line with recital 32 of the GDPR, which clearly states that a consent can be given also by electronic means. This will also be reflected in the privacy policy available on the HOLiFOOD website. The correct execution of the consent collection will be monitored by the legal partner UNIVIE. The informed consent will be attached to D8.2 'Initial Legal and Ethical Framework' (due in M12).

[2] Article 6(1), GDPR.
[3] Article 6(1)(a), GDPR.
[4] European Commission, Horizon Europe, Ethics, and data protection

3.3.3. Data protection roles

When processing personal data, it is of utmost importance to evaluate the roles of the partners involved. Article 13(1) (a) GDPR requires that the identity and contact details of the data controller, data processor and their representatives should be provided to the data subjects whenever personal data is processed. According to Article 4(7) GDPR, a controller is a natural or legal person, public authority, agency or other body which, alone or jointly with others, who determines the purpose and means of the processing of personal data. Whereas a data processor is a natural or legal person who processes personal data on behalf of the data controller.

Generally, each HOLiFOOD partner is considered as controller of their own data. This means that each consortium partner determines the purpose and means of their processing activities. However, for the involvement of external stakeholders, several partners of the HOLiFOOD consortium will work closely together. All partners involving extern stakeholders will be considered as joint controllers (including LL managers and LL facilitators) for processing the personal data of stakeholders. Before any processing of personal data occurs, relevant partners will agree on a joint controllership arrangement in accordance with Article 26 GDPR. This arrangement will include information on exercising the rights of the data subject and the respective duties to provide information in accordance with Article 13. The arrangement will also designate a main contact point for data subjects. UNIVIE will assist partners in drafting this arrangement. The contents will be provided in D8.2 'Initial Legal and Ethical Framework' (due in M12)[5].

[5] Article 4(8) GDPR

4. Tools and methodologies in Living Labs

4.1. Stakeholder selection

- **Stakeholder mapping**

Stakeholder mapping is the first step to identify which stakeholders to engage in the Living Labs. It consists of a visual process to list all potential stakeholders of a product/ project/ organisation/ field on a sheet as map. The visualisation of potential stakeholders helps to concretely see all the relevant people who can be affected or impacted.
In a second step, the map can be used to mark how they are interlinked. For this, the single stakeholders are grouped to identify diverse relationships and identify key types of groups and relationships. Additionally, to secure inclusivity, people who might have high interest, but historically low influence are identified in the map.

- **Stakeholder selection and engagement plan strategy**

The selection of stakeholders then will be based on specific rules, that ensure that all groups of interest and influence are invited and have a voice in the LL process. For instance, in HOLiFOOD each LL should be composed of: actors operating in the food safety risk sector (research, laboratories, FS services, consumers' associations, industry and farmers associations, communicators), representatives from risk assessors and/or risk managers, representatives of each HOLiFOOD value chain, as well as representatives of funded projects and existing initiatives in the field of food safety.

To reach inclusive participation it is important to maximize gender representation per stakeholder group, and especially for citizen groups as research has shown that men and women are likely to have diverse opinions, perspectives and think of other ranges of solutions as they come with gendered experiences and positions in society. The same needs to be checked for other social dimensions that can be important to make a difference for key stakeholder groups, such as age/generation, wealth/class, religion, locality (country, urban/rural) or civic and health status. We call this a gender^{+} or intersectional gender approach.

The rules to be used can be explored before and again adjusted after a first round of selection by using a stakeholder engagement plan strategy. This help list how various stakeholders can be included in the various stages by explicating their spheres of interest and influence, the frequency of contact, purpose of communication, communication strategy and tools. Examples of templates for drafting a stakeholder engagement plan strategy can be easily found on the internet.

4.2. Interactive learning and inclusive leadership styles

Once the main stakeholders to be involved have been selected, it is necessary to identify the tools and methodologies that best fit the Living Lab objective and hence, those ones that can ensure an effective involvement of users.

- **Interactive learning**

Learning is essential in Living Labs. The selection of methodologies and tools take good example of practices of interactive learning and the Reflexive Monitoring in Action approach developed by Van Mierlo with colleagues as reported about in a WUR news item. This approach serves to monitor the learning process within a Living Lab. They formulated 5 requirements what all participants should share to run a successful LL:

1. All participants are willing to invest energy in achieving a collective goal with others;
2. They believe that reflecting on issues and options together is useful;
3. They seek solutions for the obstacles they encounter within themselves or the dominant system through a step-by-step approach;
4. They develop a form of systems thinking. What influences and systemic rules are there, how are they connected, and how much room is there for innovation?
5. They are adaptive, have adaptive capacities and seize opportunities as they present themselves;
6. They are able to handle uncertainty. The outcome is not fixed. The participants must explore and test without a structured plan; the group is their footing, and the process is a future possibility;
7. They reflect on technical, social and institutional innovations. Not a narrow focus on technology but also other wider rules, values and processes.

- **Inclusive leadership styles**

For LL Managers and Facilitators practicing such interactive learning attitude it is required and implies they perform their tasks as inclusive leaders and select / elaborate tools and methodologies in line with this. Inclusive leadership refers to capabilities (i.e. mindsets, knowledge, skills and behaviours) that ensure a diversity of employees/participants feel included and that their perspectives improve an organisation/project's strategy, work, and values for success.

Inclusive leadership styles are largely presented and generally present as representing 6 core competencies:

1. COMMITMENT: it all starts with commitment, because staying the course is hard.
2. COURAGE: is about courage to be humble and vulnerable, and to admit not being as inclusive as could be.
3. COGNISANCE OF BIAS: is about leaders who are deeply aware of their blind spots.
4. CURIOSITY: deeply curious about other people's points of views.
5. CULTURAL INTELLIGENCE: deeply motivated to understand other cultures you interact with.
6. COLLABORATION: how do you get a team of different people to be better than they are, because a diverse-thinking team is greater than the sum of its parts.

The New Zealand Diversity Institute drafted which intelligences interact to achieve such a style (Figure 4):

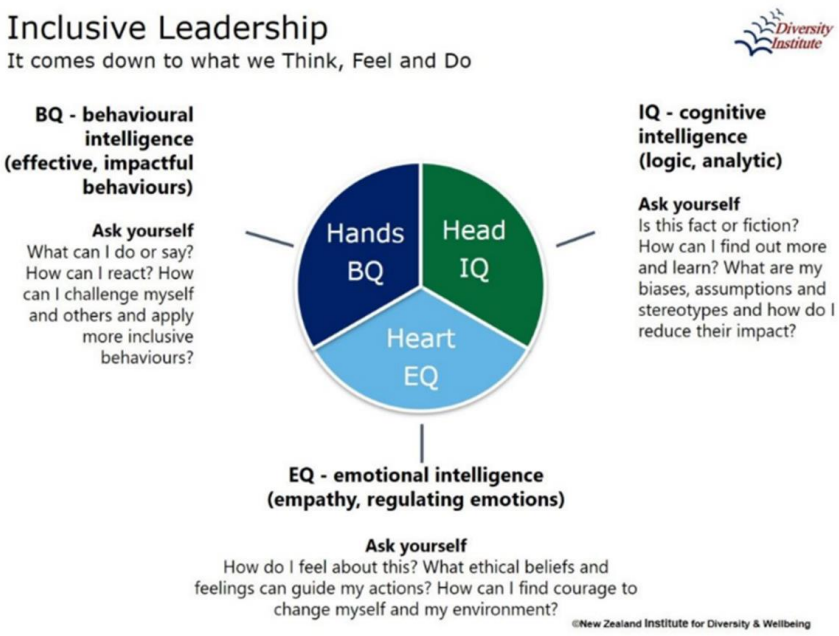

Figure 4 - Source: New Zealand Diversity Institute

Related qualities for inclusive leaders in Living Labs are (Figure 5):

YES	NO
Encouraging everyone to participate – invite a diversity of thought	Letting the loudest and most confident steal all space
Rewarding counterintuitive ideas and conflicting opinions – increase tolerance of discomfort and disagreement	Building "consensus" based on the managers' or majority's opinion
Being open to questions and doubts on the best path forward from others	Setting the course without input and getting others on board
Encouraging risks and brave bets	Penalizing people for thinking outside the box or acting in a different way compared to "how things are normally done"

Figure 5 - Source: New Zealand Instutite for Diversity and Well-Being

4.3. Recommended tools

4.3.1. Tools for the exploration phase

- **Brainstorming**

There are different types and techniques of brainstorming, most of which involve three stages:

a. acquisition of ideas
b. discussion and analysis of ideas
c. selection or ranking of ideas to sort which to be elaborated

All brainstorming techniques are based on common elements: a person or a group of people, a problem to be solved or an opportunity to be addressed, and time. Some of the most used techniques are:

- **Round Robin exercise,** which allows all to give input and build on each other's ideas.
- **Lotus blossom exercise**, which centres one issue or problem and according to 8 leaves distinguishes related issues or aspects, which each can be further elaborated in new lotus flowers with 8 surrounding leaves
- **Starbursting**, which consists of starting with a six-pointed star, each dot representing a question. The participants come up with a series of questions on a topic of discussion, rather than providing solutions or answers. The main goal is to create a list of questions related to the central topic or idea.
- **Mind mapping** where the initial idea is used as inspiration from which new ones are generated and much more. It is a way to capture, organize, and visualize thoughts and solutions.
- **How-now-wow matrix,** which facilitates to rank ideas on two parameters, for instance, originality and ease of realisation

▪ **World Cafè**

A world café is a structured conversational process for knowledge sharing in which groups of people discuss a topic at several small tables like those in a café. Some degree of formality may be retained to make sure that everyone gets a chance to speak. The assumption is that collective discussion can shift people's conceptions and encourage collective action. World Café can be modified to meet a wide variety of needs, but the following five components comprise the basic model:

- *Setting*: Create a "special" environment, most often modeled after a café, i.e. small round tables covered with a checkered or white linen tablecloth, butcher block paper, colored pens, a vase of flowers, and optional "talking stick" item. There should be four chairs at each table (optimally) – and no more than five.
- *Welcome and Introduction*: The host begins with a warm welcome and an introduction to the World Café process, setting the context, sharing the Cafe Etiquette, and putting participants at ease.
- *Small-Group Rounds*: The process begins with the first of three or more twenty-minute rounds of conversation for small groups of four (five maximum) people seated around a table. At the end of the twenty minutes, each member of the group moves to a different new table. They may or may not choose to leave one person as the "table host" for the next round, who welcomes the next group and briefly fills them in on what happened in the previous round.
- *Questions*: each round is prefaced with a question specially crafted for the specific context and desired purpose. The same questions can be used for more than one round, or they may build upon each other to focus the conversation or guide its direction.
- *Harvest*: After the small groups, individuals are invited to share insights or other results from their conversations with the rest of the large group. These results are reflected visually in a variety of ways, most often using graphic recording in the front of the room.

- **Data dashboards**

Data dashboards display contributed data in a way that is accessible and transparent for everyone involved. A well-designed data dashboard can significantly enhance a community's knowledge and understanding, potentially serving as a catalyst for further action.
Since dashboards provides data knowledge and understanding in a unique, user-friendly interface, they can be extremely useful in Living Labs to facilitate interaction and discussion among stakeholders.

4.3.2. Tools for the experimentation phase

- **Usability Testing**

Usability testing (see https://unalab.enoll.org/) assesses how user-friendly a new product, service or procedure is by having real users try it out and interact with it in real-life situations or in an observation situation. During the tests, users are asked to complete specific tasks and identify any problems or confusion they encounter. This method helps to reduce the risk of developing ineffective solutions, saving money, time, and resources. It allows issues to be discovered when they are still easy and inexpensive to fix. Usability testing is an iterative process, not a one-time event; it needs to be repeated until the design is clear and users can successfully complete the tasks presented.

- **Prototype Testing Map**

The Prototype Testing Map (see https://unalab.enoll.org/) provides a basic yet valuable overview of different methods for testing and the appropriate times to do so. Prototypes to be tested can be created in various ways, or you can illustrate or enact a draft idea. The Map helps organize the testing process, making it more effective by following a structured series of steps. This approach allows for continuous improvement without becoming overwhelmed by accumulating input and feedback. The worksheet suggests two optimal periods for testing: early in the development stage and later, just before full implementation.

4.3.3. Tools for the evaluation phase/collect feedback

- **Pattern finding**

Pattern finding (see https://unalab.enoll.org/) is a qualitative method to analyse input and feedback collected during the design research phase. It involves the identification of commonalities or patterns among findings. These similarities could be found, for instance, in behaviour patterns, habits, actions, and decisions and might be related to specific social or stakeholders among the user of affected groups and need to be addressed accordingly. By combining the findings into usable and diversified insights, these can fuel into 'rules' for new future solutions. These insights then need to be translated into actionable diversified recommendations.

4.3.4. Tools for supportive data collection

- **Surveys**

A survey is a method that uses a questionnaire to gather information from various stakeholders. Surveys have as main goal the collection of data (that is representative of the group being surveyed) and provide researchers with reliable, usable, primary data that can inform business decisions. They are useful because the data comes directly from the individuals identified for the goal. In HOLiFOOD Living Labs, they can be used to get specific insights from stakeholders, but also to get feedback on the activity conducted in terms of content, timing and/or satisfaction level.

- **Interviews**

Conducting interview is another flexible methodology to engage stakeholders through a bilateral and specific conversation with them. Stakeholder interviews allow to:

1. Acquire insights into attitudes and requirements of stakeholders related to the project context
2. Identify potential obstacles and enablers
3. Get support for the project
4. When you conduct stakeholder interviews at the project's outset, you are establishing the groundwork for all subsequent efforts.
5. Stakeholder interviews provide considerable adaptability. The interviews themselves can adhere to a formal structure and agenda or adopt a more informal, conversational approach. They can be run both physically and online.

Some of the most widely used interview types are:

1. One-to-one interviews: one interviewer, one stakeholder, and one note-taker
2. Group interviews: one interviewer, two to three stakeholders, and one note-taker.

When conducting an interview, it is essential to carefully select participants, evaluating whether to work with samples or include the whole reference population in the study. In case the first option is chosen, a detailed sampling process should be identified, and the potential effects nonrespondents might have on study results should be taken into account.

- **Focus groups**

A focus group is a qualitative research method that involves facilitating a small group discussion with participants who share common characteristics or experiences that are relevant to the research topic. Focus groups elicit multiple perspectives in a social environment as participants are influenced by and influence others through open discussion. The interactive responses allow researchers to quickly gather more contextual, nuanced qualitative data compared to surveys or one-on-one interviews.
Choosing focus group participants requires balancing homogeneity and diversity, as too much variation across gender, class, profession, etc., can inhibit sharing, while over-similarity might limit perspectives.

4.3.5. Online tools for virtual interactive activities

In HOLiFOOD, some of the planned workshops will take place in virtual mode. Therefore, a summary of the most frequently used tools for an efficient interactive session is also provided:

- **Digital Whiteboard**

Several digital whiteboards are available such as Miro Board, Google Jamboard and Mural. These tools provide a virtual space to brainstorm, organize ideas, and communicate concepts, all while collaborating simultaneously to a digital canvas.

- **Survey Marker**

A survey maker is a digital tool that automates the creation, design, distribution, and analysis of surveys. It allows users to create surveys using a variety of built-in features and options. Some of the most used tools as survey maker are: Mentimeter, Slido and Monkey survey. These tools allow also to display results in real-time, so it is possible to fertilize the discussions starting from that. The disadvantage is that these do not differentiate and therefore do not allow analysis per stakeholder group or social dimension if not used in specific groups.

- **Engagement tools**

Mentimeter and Slido also allow different kinds of engagement such as polling large groups and visualizing outputs in a word cloud. They represent an engagement feature that can help elevate the engagement in interactive sessions. Also here is the disadvantage that these do not differentiate and therefore do not allow analysis per stakeholder group or social dimension if not used in specific groups.

- **Setting the interactive session flow - Go Broad, Go Narrow approach**

The Go Broad, Go Narrow approach consists of stimulating as many ideas and potential solutions from users as possible (Go Broad) and then choosing just a few to take forward (Go Narrow).
This approach is fundamental for every interactive session, especially for the exploration phase. It allows the designers to avoid bias and to effectively explore all the ideas, to receive a variety of potential solutions, and to evaluate all the feedback raised from the users before focusing on just one. This approach can only be implemented if a comfortable sharing environment is created, where users can interact with each other and with designers.

A good point to keep in mind when setting up the flow of the interactive session is to facilitate the participants in using best their own or provided devices to participate, as this directly affects the quality of the information shared by the users.

To test the session designed it is always a good practice implementing a dry run, when potential gaps, and implementation points, can be identified and solved. Indeed, during a dry run, it could be noticed that some activities are more difficult to explain than they seem on paper or that the session does not flow as planned.

4.4. Reporting, analysis and feedback

The Living Lab approach requires a qualitative reporting process to be able to synthesize the results of each lab and to use them as feedback tool to adapt processes to secure an inclusive, smooth and successful process of development, experimentation and implementation. As Work Package Leader, APRE will provide to the Living Lab Management team a reporting template to be compiled after each workshop to summarize workshop results and to reflect on the workshop outcomes and process. A first version of the reporting template is provided in Annex A.

5. Learning Labs training for LL Managers and Facilitators

5.1. Set-up of training

In the frame of the project, an online Learning Lab training for Living Lab Managers and Facilitators was organized, which took place 28 April 2023, at the presence of 17 participants (project team members). The agenda of the training includes the following themes:

- Provide an overview of the Living Lab HOLiFOOD Guidelines (D4.1, first version).
- Introduction to the concept of Living Labs.
- How Living Labs can contribute to scientific research.
- The role of Living Labs within HOLiFOOD.
- HOLiFOOD consortium and GDPR issues in relation with stakeholders' engagement.
- Stakeholders map co-creation activities

For the LL training, questions were prepared, as well as exercises on the MIRO board. Three working boards were made, each of them related to the three LLs, and the participants were asked to cooperate with ideas and inputs using the MIRO boards. These three Living Labs in HOLiFOOD are related to main research fields and Work Packages:

- LL1: Identification and monitoring of food safety risk: to develop, test and optimize tools, models and approaches.
- LL2: Holistic risk assessment and acceptance: eliciting priorities and filling data gaps for risk assessment
- LL3: Platform co-design

5.2. Identification of LL topics and connections

Two main questions were asked in each working board:

- Which topics could be address within the LL?
- How can the LL contribute to the other LLs?

Participants were asked to use 20 minutes for interactions. All the following results must be considered exemplificative of the overall preliminary discussions and not as project results. Figures 6-7-8 show the inception of the co-creative ongoing process.

The manager of the LL1 presented to the audience the following identified topics to be addressed:

- Feedback to/suggestions for risks, drivers, and indicators to be gathered within WP1 & 5.
- Incorporation of citizen science.
- Gather information on data sources that stakeholders manage or are aware of.
- Discuss practicality and feasibility of proposed models and approaches.

- Define networks that could be accessed for future participatory risk assessments.
- Primary drivers of perceived risks.
- Interaction with authorities and other projects.
- Crowdsourcing as an identifier.
- Do we include perceived risks and trends?

The participants identified as common possible threats a low participation of citizens, industries, NGOs, due to their involvement in many similar co-creation initiatives; in addition to this, stakeholder fatigue was identified as a possible threat. A lack of involvement would be problematic; if a proper strategy cannot be put in place, measures need to be taken.

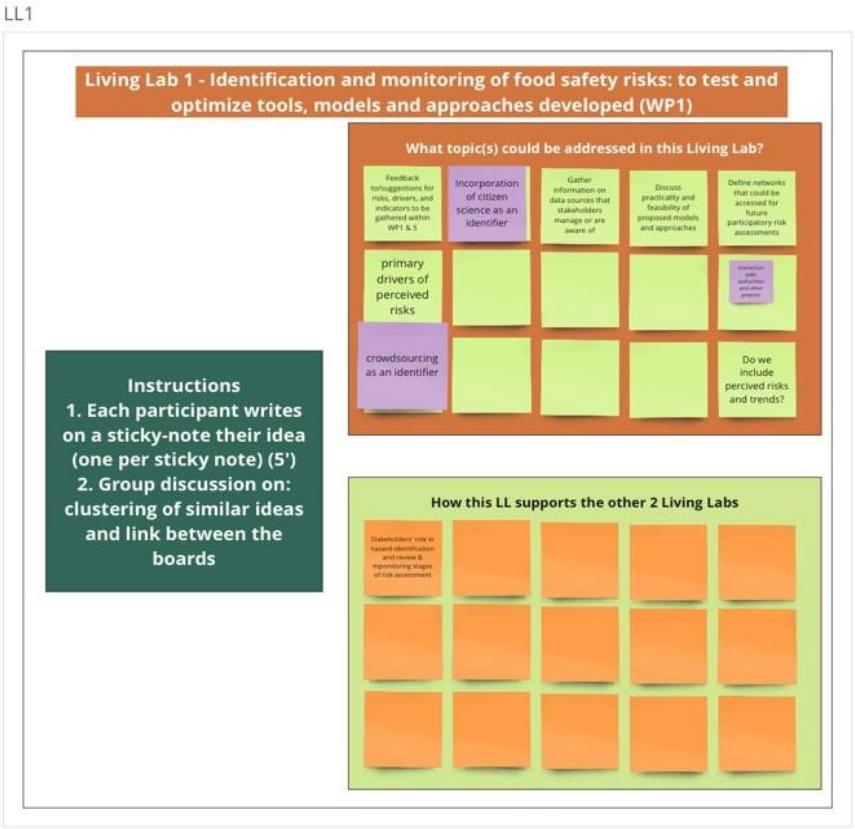

Figure 6 - LL1 - MIRO Board interaction

At the moment of the training, the setting up for LL2 had just started. The identified topics to be addressed were the following:

- Weights given to all dimensions assessed.
- How to deal with uncertainty.
- Scope of each case-study, e.g., current scenario and alternatives ones.
- How to report results from holistic assessment.
- Questions around scaling and timing of various dimensions (midpoints) assessed.
- How to avoid risks related to misinformation in context of scientific uncertainty.
- What are societal priorities?

The LL1 collected preliminary feedbacks will provide inputs to support the LL2 in shaping the assessment phase (Hazard identification, risk prioritization, etc), while the report from LL2 will support the development of LL3.

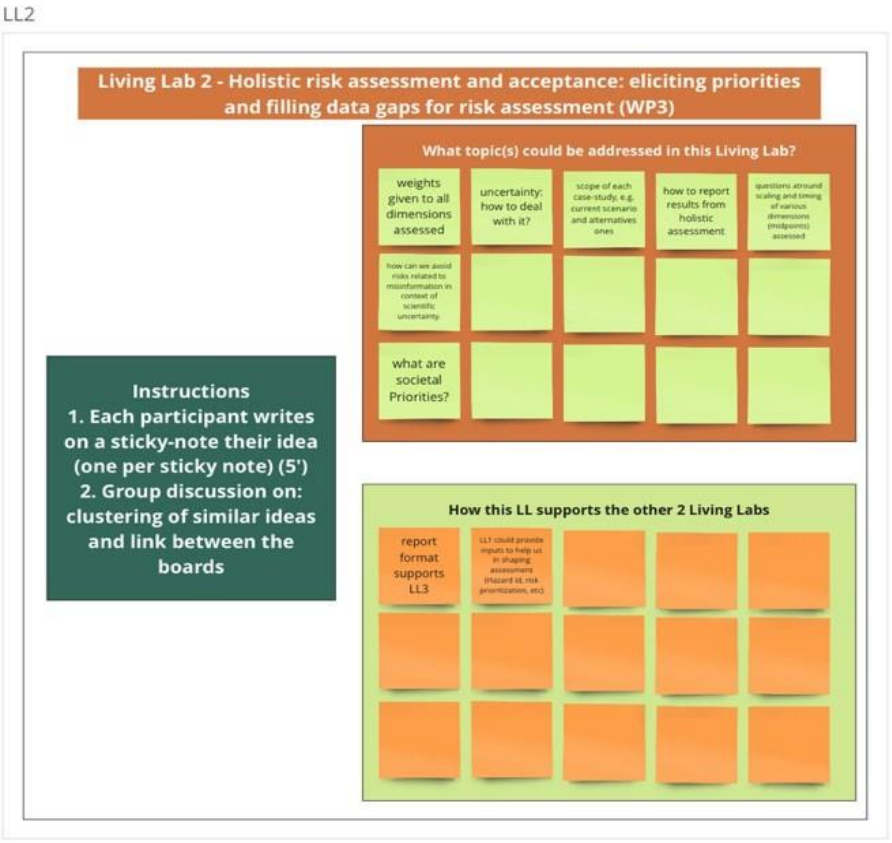

Figure 7 - LL2 - MIRO Board interaction

The LL3 group is assigned to the design of a specific dashboard for support of food companies. The first step regarding the setting up of the platform will be organizing interviews to actors applying AI models for risk identification. Then, quantitative data will be collected, and focused on the detection of contaminants through biosensors. Based on the collected results the dashboard will be set up. The platform will be used by food companies for collecting feedbacks and evaluation, with involvement of regulatory stakeholders. This feedback will support the development of both LL1 and LL2.

During the training the following topics have been detected:

- AI models for risk identification.
- Detection of contaminants by devices (biosensors etc).
- Food companies which will use decision support dashboard.
- Regulatory stakeholders interested in decision support dashboard.
- Alignment with previous platform designed (e.g. for EFSA).
- Platform design and user experience.

The support from LL3 focuses on providing inputs and data for LL1 and LL2.

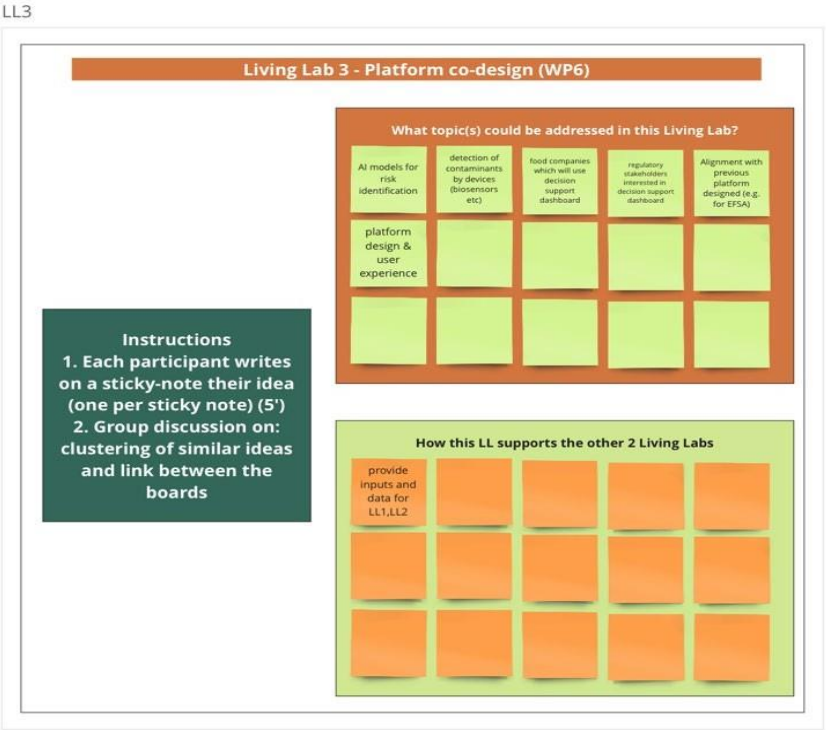

Figure 8 - LL3 - MIRO board interaction

5.3. Stakeholder identification

As the second part of the exercise, the participants were asked to contribute to the second exercise regarding stakeholders' identification and identified possible "change agents" par each LL.

Stakeholders were divided into internal and external groups depending on their belonging to project consortium. The participants were asked to include the stakeholder's category. Then, they would need to be classified by the level of knowledge in connection to the project themes. Their influence level was also asked. The identification of stakeholder and their classification by levels of influence is indeed preliminary and iterative, which is aimed to be modified along the project development in relation with the specific topics addressed.

- **LL1 results (Figure 9)**

As external stakeholders were listed

- National food safety authorities
- European Food Safety Authority (EFSA)
- National authorities (policy makers)
- Consumer organizations, considered to have good knowledge and high influence.
- Retailers/Food Industry
- Media

- European Commission, very knowledgeable and influential.

As internal stakeholders were listed

- Food safety scientists (academic/research institutes)
- Technical analytical experts

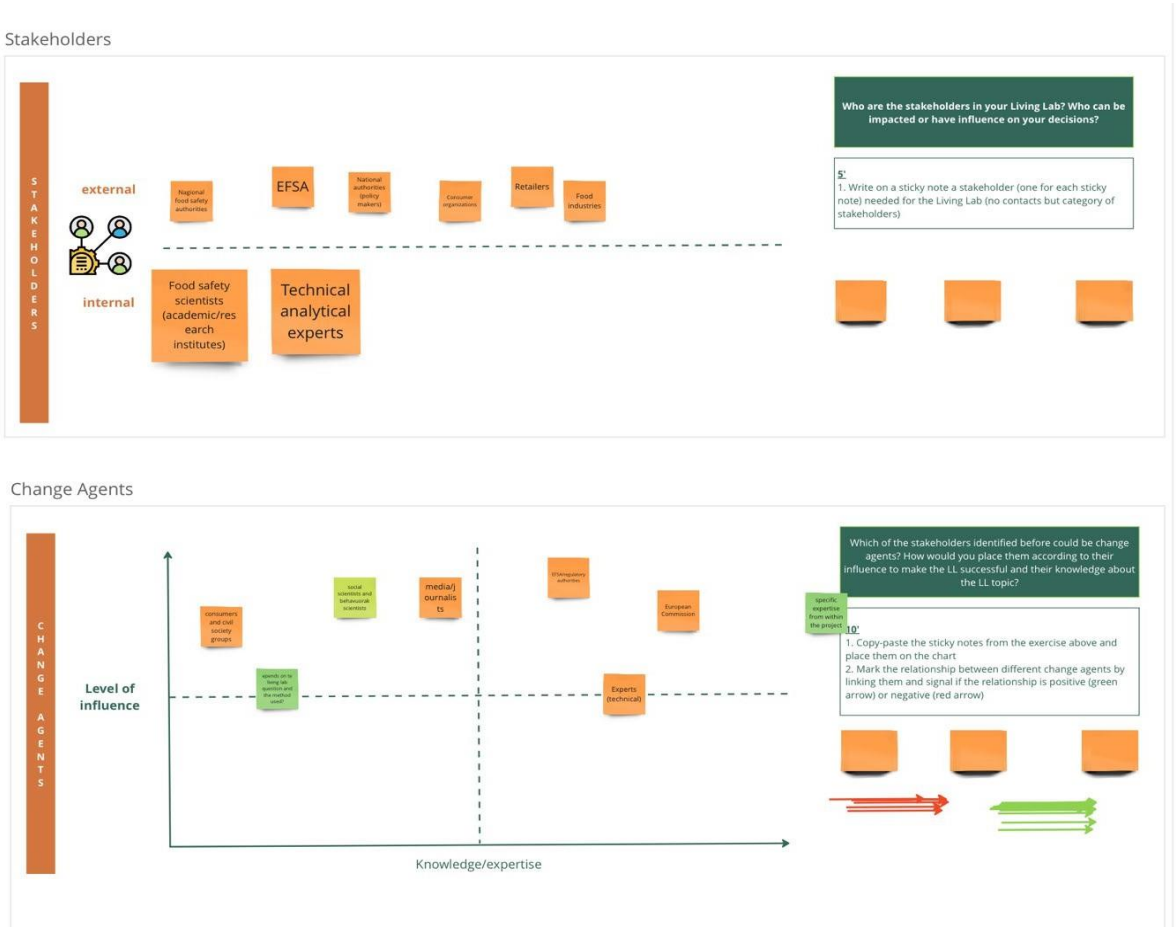

Figure 9 - LL1 - Result of the stakeholders mapping

- **LL2 Results (Figure 10)**

As external stakeholders were listed

- National food safety authorities
- EFSA
- FAO as they have experience of holistic assessment and management.
- Industrial association? Not sure (to be decided)
- Partners from Food safety agencies not involved in WP3.

As internal stakeholders were listed

- Food safety scientists (academic/research institutes)
- Technical analytical experts
- Regulators

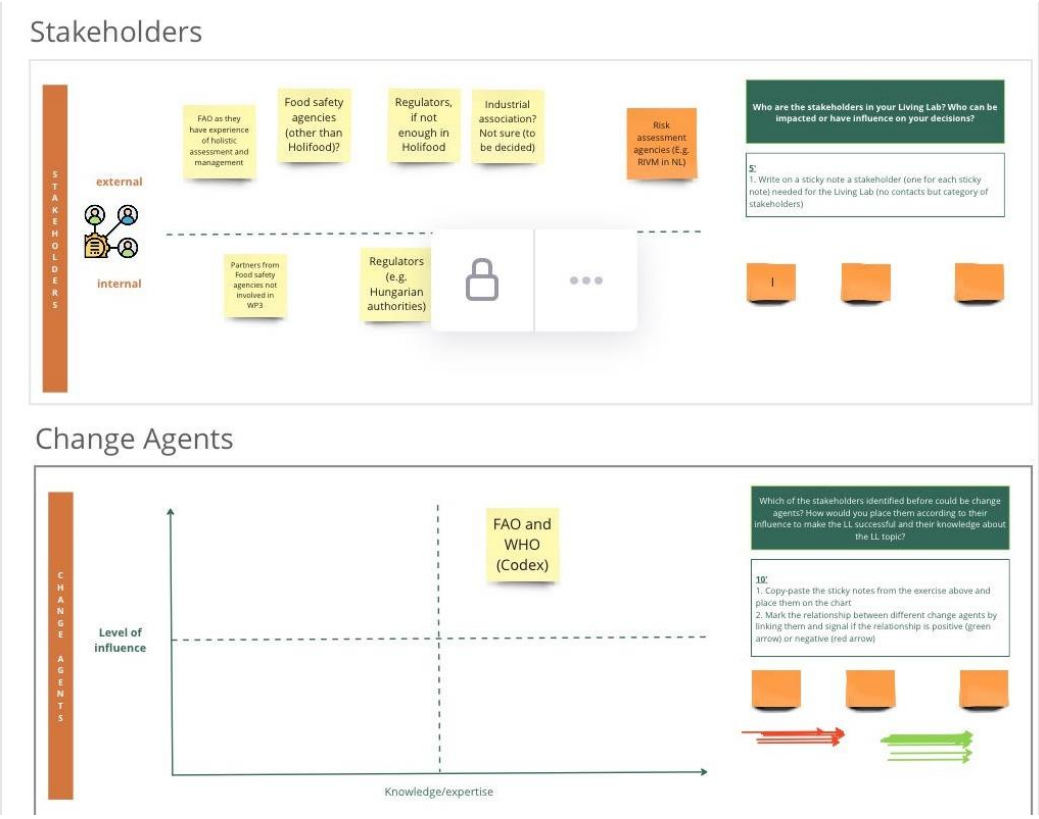

Figure 10 - LL2 - Result of the stakeholders mapping

- **LL3 Results (Figure 11)**

As external stakeholders were listed

- AI researchers
- Food scientists
- Food companies
- Regulators

As internal stakeholders were listed

- Platform developers
- Food safety scientists

Figure 11 - LL3 - Result of the stakeholders mapping

The participants of the LL training were very positive, and several advantages have been identified:

- Common dialogue on the topic to be addressed by each LL
- Common discussion around the identification of stakeholders
- Dialogue about their level of influence and their role in the project
- Discussion on possible interactions within different Labs

The Miro boards used for the exercise have been let open for interactions and further ideas and contributions by the LLs participants.

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Annex A. Reporting Template

Reporting Template

Living Lab #	
Workshop #	
Date	
Location	
Lab Manager(s)	
Lab Facilitator(s)	

Workshop Agenda

List of participants

Participant name	Country	Stakeholder group
Name	Text	Text
Name	Text	Text
Name	Text	Text
Name	Text	Text

Report about the group characteristics, e.g. % per stakeholder, per gender, per age category and per country representation of total, plus when group reasonable big enough (> 12 persons), also percentage men/women per stakeholder, representation of countries per stakeholder

Reflection

Reflect on the group composition per stakeholder, gender, age, representation of countries. Report about the evaluation of the participants.

Overall how would you rate the success of this specific event?

- very successful
- fairly successful
- not too successful
- not successful at all

Please, briefly justify your answer.

Describe and reflect the workshop process (methods, timing, agenda, settinga, etc) - what worked, what did not work?
Refer explicitly on how you manage to stimulate a safe and brave environment for all in which all could bring in their input, and whether that was respected by all.

Describe the group dynamics (composition, interaction) - were there critical moments? How could they be addressed?
Refer explicitly on whether a safe and brave environment for all in which all could bring in their input could be respected, whether it was at risk, how you then intervened and what was the result.

Outcomes and results

List the main outputs/results of the workshop.

Also refer explicitly on viewpoints with a minority of support, c.q. deviant viewpoints, how these were discussed and reacted upon, and whether adherent or deviant participants were able to reconsider their viewpoints based on the discussion.

Describe the main outcomes of the discussion.

Outline the next steps.


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