Innovation Services: launch toolkit

Shemakes.eu 101006203 Deliverable 3.1

Delivery Date: 29 April 2021

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101006203.

Deliverable

Project acronym:	shemakes.eu
Grant agreement n.	101006203
Project title:	Opportunity ecosystems bridging the gender gap
Deliverable number	3.1
Deliverable title	Innovation service: launch toolkit
Version	1.0
Date	29 April 2021
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Dissemination level	PU: Public

Executive Summary

The shemakes.eu project defines its main objective as to empower future female innovators of the sustainable fashion industry through inspiration, skills and networks. Partners use a three-pronged approach to reach this goal, providing innovative learning paths for girls and women of various ages, concrete business support and connections, and inspiring stories of female role models.

To support achieving this goal, WP3 will focus on creating innovation services guidelines for the participants labs in the network. TCBL model, Fabricademy network and the background expertise of the initial 6 core labs combined, provide enough basis to draft initial criteria and pointers on how to become better environments to engage in three different types of projects, community engagement, lab-to-lab engagement and business engagement.

This document is directed by WAAG as coordinator of WP3 and co-created with the direct partners, especially the other 5 core labs (IAAC, FAB LAB LEON, ONL'FAIT, REDU, MAKESENSE) and Matrix. In this document we aim to provide the partners a common understanding of the models and tools that support innovation in shemakes.eu as well as the activities that will be conducted in the project's phase 1.

The first chapter describes the WP context and main objectives, explaining the steps taken so far. We highlight the enabling concept as a starting point and as one of the most relevant aspects of this deliverable, to understand why the labs are a positive environment for women to thrive. Aspects that are the core pursuit, are described here as well.

Chapter 2 describes the existing models and tools that serve as reference to shemakes.eu. The TCBL model is presented in a structured framework, with its definitions, principles, lab portfolio and activities, to be later adapted into the Shemakes model. Moreover, in this chapter, we discuss the concept of what a toolkit represents to WP3 and how it can be incorporated into the project.

Chapters 3, 4 and 5 focus on the different types of engagement in relation to the labs: community engagement (co-author REDU), lab-to-lab engagement (co-author IAAC) and business engagement (co-author MAKE). Each chapter brings the background and expertise of the involved labs, defines the role of each specific engagement type in the project, and proposes a series of guidelines and tools to support the labs. From there, we draw the initial idea of activities to follow.

In chapter 6, we discuss the next steps that follow from this deliverable. It is furthermore described, how to continue to gather information and evolve the work done until now.

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1. Introduction

1.1. Context and Objectives from DoA[1]

The WP3 Innovation Services main objectives are described in the Shemakes DoA as follows:

> *WP3 builds on the TCBL Lab Model[2] as a fruitful environment within which to bridge the gender gap, providing* ***innovation services and activities that raise the role of women as innovators within their local communities, within open research networks, and with the T&C business community****.*
>
> Specific tasks follow the service model developed in TCBL, mixing the age groups addressed in WP2 in more open explorations, with the following objectives:
>
> - Further develop the **common models and shareable tools** for Lab activities and services.
> - **Engage local communities** with a leading role model for girls/women of all age groups in innovation workshops and seminars.
> - **Carry out networked Lab Projects** involving girls/women of the different constituencies.
> - **Engage local and EU sector businesses to validate innovation concepts** and promote market uptake, through start-up incubation or the collaborative launch of new business lines

In line with this description, this work package bases itself on the existing current TCBL network and intends to critically analyse its model with its characteristics and activities in order to propose a new model that will serve as the Shemakes innovation service model.

1.2. Defining enabling environments - a start

WP3 departs from the hypothesis that all the 6 core labs are, each one in their own way, a fruitful thriving environment for the people surrounding them. We assume that they are therefore potential catalizers for societal change, and that these 6 labs have what it takes to be a safe space that enables change, by promoting and empowering the members of their community.

[1] Description of Action on the shemakes.eu project
[2] https://tcbl.eu/

While that might seem very clear and intuitive, when trying to describe what makes these places such enabling environments and to fit those characteristics into a model, many questions arise. Firstly, there is the need to dive deeper in **the meaning of the enabling concept** itself.

Most generally, **an enabling environment can be considered as a place with the resources, culture, and accessibility that enable a certain type of activity to take place.** The specific activities to be enabled vary from pilot to pilot, but share the goal of enabling gender equality within textile labs and makerspaces. The mutual goal is to overcome inequalities that may arise in terms of access, payment, inclusion, and more (particularly but not exclusively for women). The specific inequalities faced, and the ways in which they can be addressed via an enabling environment, will be identified and developed through the co-creative process in Shemakes.

WP3 will use three main sources as inputs to craft its own idea of enabling environment: the vision elaborated by WP1, the network through which the TCBL model set ground for enabling practices, and the activities of the different labs that were executed in the individual labs thus far.

1.3. Defining the three types of engagement

Having the enabling concept defined for Shemakes, the next step is to understand what allows this enablement to happen by looking more closely at **three specific types of engagement: community engagement, lab-to-lab projects and business engagement**. Since the forms of engagement may differ or overlap amongst the three types, a unified or fixed definition of "the" enabling environment can't be established yet. The three aspects will have to be explored in their own right first, within the context of gender equality, before we converge into a unified model.

Based on the profiles of each lab that describes their values, the tools with which they work and their created outputs, we will develop initial guidelines on how labs are currently contributing to the Shemakes network. The goal is to learn from each lab by gaining a deeper understanding on how each one of them implements enabling activities. In doing so, we will gain more insight in the role of women in the T&C sector and the ways in which their practices lead to innovation within the industry.

The three types of engagement (community engagement, lab-to-lab engagement and business models) represent the main interaction points from which labs reach out to the external world. This is where they engage, how they set up activities and work

towards enabling a larger (public) community next to the lab workers. In what follows, we will briefly elaborate on each type of engagement:

- **Community engagement**
  - Each lab is rooted within a certain set of values from their local community. This allows them to activate the diversity of T&C sector stakeholders surrounding the lab, and to explore new perspectives, concepts, and approaches that aim to generate positive change and improvement of the role of women.
- **Lab-to-Lab engagement**
  - Seen as the lab's playground for research alongside a distributed and world wide network of other labs, this is where the lab's function of being a knowledge hub takes place. Common research topics amongst the different labs ignite in-depth co-research actions, where learning from scientific discoveries and practical experimentations take place. If, for example, Lab X shares their know-how and knowledge on a subject that they are specialized in, with additional labs and their networks, this will enable the other labs to transform their staff into instructors of local educational activities and potential new spreaders of the network.
- **Business engagement**
  - The "Business engagement" task focuses on testing business concepts of future women entrepreneurs: it aims to engage women with an entrepreneurial potential to discover and use new business tools. This type of engagement can therefore be seen as the lab's entry point to the business world, explored through different dimensions: accompanying female innovators through each lab to make new entry points for business opportunities; bringing support to the Shemakes entrepreneurs-to-be through different programs and activities.

1.4. Structure and phases

The work executed in WP3 follows the main structure of the DoA. The first months, we used to get to know each partner in the consortium, to determine and align common concepts. The objective was to have a clear starting point for the activities that will follow in the Phase 1, from May to September 2021. At this initial stage, there are still a lot of questions to be answered and adaptations to be made, following the line of the

project's *learning by doing* mindset which means fine tuning on the go via an iterative process.

Given the reality of an extended pandemic situation, all meetings and co-design sessions were held strictly in the online environment. While undoubtedly resulting in some efficiency in terms of travel costs and time, we also see a big loss when brainstorming and especially making use of co-design methodologies that rely on intensive, unfiltered and close contact among participants. To overcome this challenge, frequent meetings were organised involving the other WP's leads, as well as the other core labs, by making use of the online tools Miro and Mural, to facilitate sharing ideas and multi-user live editing.

The following chart is a visual representation of the WP3 framework, exploring the main inputs required to achieve the intended outcomes and objectives. This graphic representation visualizes the interconnection between the 3 tasks on the different levels of engagement.

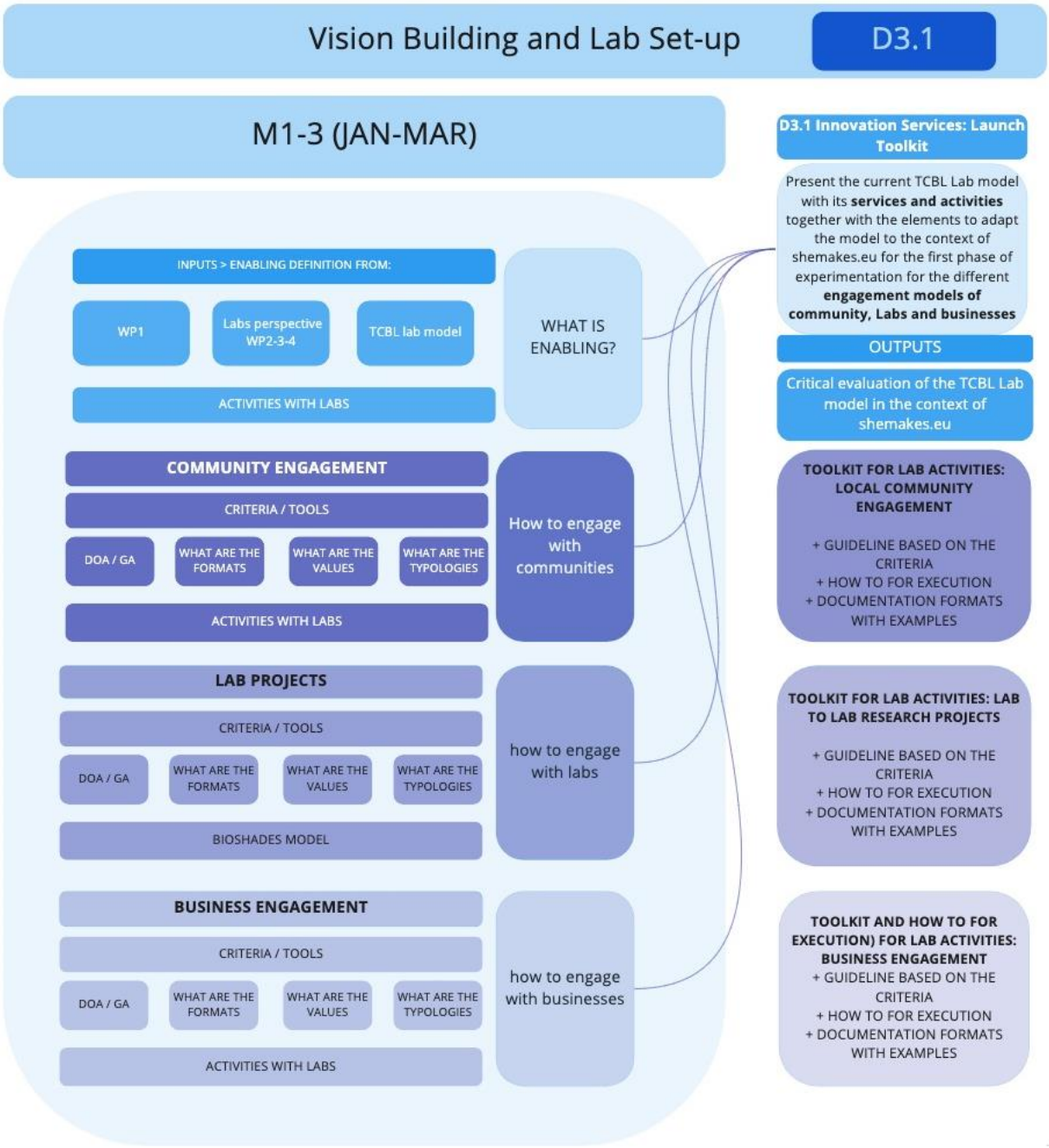

Figure 1 WP3 chart

1.4.1. Synthesis of activities carried out

The path followed to reach this Innovation Services Toolkit Launch is briefly presented in table 1.1. The outcome of the activities are described in detail in the upcoming chapters.

Date	Meetings	Who	Link documentation

11-01.2021	WP2-WP3-WP4 vision meeting preparation	IAAC, WAAG, MATRIX	MIRO
15.01.2021	SU kick-off WP2 Brainstorming I and II	All SU partners	MURAL MIRO
02.02.2021	SC meeting	TCBL, IAAC, FLOD, MATRIX, WAAG	MIRO
12.02.2021	WP2/3/4 meeting	WAAG, MAKESENSE, IAAC, MATRIX, LEON	NOTES
19.02.2021	SU Labs meeting 3	All Labs, MATRIX	MIRO NOTES
24.02.2021	WP3 meeting	MAKESENSE, WAAG	
26.02.2021	SU Labs meeting 4	All Labs, MATRIX, Frédérique Thureau	MIRO NOTES
02.03.2021	SMG meeting	MAKESENSE, WAAG, ONLF, MATRIX, LEON, IAAC, TIG, REDU, FLOD, Jesse Marsh, Marco Cusenza, Frédérique Thureau	
03.03.2021	SU Labs meeting 5	All Labs, MATRIX	MIRO NOTES
10.03.2021	WP3 meeting	WAAG, REDU, MAKESENSE	NOTES
10.03.2021	SU Labs meeting 6	All Labs	MIRO
17.03.2021	WP3 meeting	WAAG, REDU	NOTES
23.03.2021	WP3 meeting	WAAG, IAAC	NOTES
24.03.2021	WP3 meeting	WAAG, MAKESENSE	NOTES
31.03.2021	WP3 meeting	MAKESENSE, WAAG, REDU, IAAC	NOTES
31.03.2021	SU Labs meeting 7	All labs	NOTES
31.03.2021	WP2/3/5	FLOD, IAAC, Waag	NOTES
06.04.2021	WP3 meeting	WAAG, Marco Cusenza, Frederique Thureau	NOTES
07.04.2021	WP3 meeting	WAAG, REDU, IAAC, MAKESENSE	NOTES

Table 1 Synthesis of Activities Carried out

1.4.2. Phase 1 - Objectives and Activities

From our understanding of the enabling environment that Shemakes aims at bringing forth, we expect during the first phase of this project to gain more insight on the following objectives:

- How to create an evolving self-sustainable network that retro-feeds itself through time and learns from the iterative innovation process while building the network?
- What were the guidelines and tools that have been used? Were they helpful, what needs to be changed?
- If we transfer the Shemakes concept to new labs, will they be able to manage it by themselves?
- If I'm a lab that wants to engage with other people in my community, increasing value to women, what do I need to do? What kind of atmosphere do I need? What content needs to be addressed?
- If I'm in a lab that wants to develop a new research topic, how to do it with other labs?
- If I have entrepreneurs and innovators in the ecosystem of my lab, what do I need to provide to boost their business knowledge and take further steps?

On the following page, Table 1.2 shows a timeline with all the activities in phase 1 that aim at reaching the objectives above.

Type	Tasks	Date (Timing)
Community	Co-designing community engagement plan, identifying stakeholders to involve. Framework for the questionnaires - to be adapted to each lab community	April - May 2021
Community	Launch questionnaire Analysis of responses, develop the content for the first talks/panels.	June 2021
Community	Executing of two events / talks	July - August 2021
Community	Improvement + documentation on community engagement toolkit in d3.2	September 2021
Lab-to-lab	Build a shared map for interactive research agenda and selection of 3 projects	May - June 2021
Lab-to-lab	First exploration with collective workshops and documentation	June - August 2021
Lab-to-lab	Improvement and documentation on lab-to lab engagement toolkit in d3.2	September 2021
Business	Targeting of women entrepreneurs Mapping of potential partner companies	May 2021
Business	Diagnosis of the 3 selected women entrepreneurs. Targeting of partner companies and experts who will participate in the workshop. Logistical considerations *(e.g. booking a venue, mobilizing additional facilitators if needed…)*	June 2021
Business	Elaboration of the methodology, the detailed schedule. Briefing of the different stakeholders. Activity	July 2021
Business	Improvement + documentation on business engagement toolkit in d3.2	September 2021

Table 2 Timeline for all activities happening in phase 1

2. Models and Tools

2.1. DoA description

As for the DoA description on T3.1 Model and Tools:

> *The TCBL Lab Model has proven its capacity to bring about innovation in the T&C industry. This task shifts the focus of operations from working mainly with adults* ***towards a greater openness towards different age groups and genders*** *and adapts the Lab model to these new targets by drawing on the lessons learned in the course of the two phases of experimentation. The ultimate goal is to lay the ground for all* ***TCBL Labs to become enabling environments and physical entry points for women to develop their abilities and role in society and the economy***.
>
> The concrete outcomes of this task include:
>
> - **A critical evaluation of the TCBL Lab model** in the context of shemakes.eu.
> - **More inclusive and gender-aware tools and activity formats,** based on previous models of TCBL Labs knowledge exchange such as the BioShades Distributed Event.
> - **Final version of the 'Shemakes TCBL' model, tools and activities** published as a new section on the TCBL platform.

We use models and tools coming from TCBL and Fabricademy as initial building blocks, to further explore and evaluate in the next phases which of these guidelines assist the project in understanding how a lab can become an enabling environment and what are the most important concrete pointers to identify that.

2.2. TCBL model background

The TCBL Lab model serves as a foundation for the design of a new common model, that is shaped throughout the timeline of WP3 in the sheMakes.eu project, in iterative steps. With the aim of promoting and supporting more female-oriented actions, the new model needs to lay the ground for exploring how we can empower and enable women in the Lab communities and networks.

Conceptualized as a collaborative bottom-up network of laboratories and businesses, we start framing this model from one of it's main definitions. What is a lab?

> *Labs are the active, physical context in which TCBL's explorations of new sustainable models for the T&C industry take place. Labs provide innovation and research spaces to*

help companies, non-profits, designers, students and citizens develop projects through training, services and tools, as well as the publication of research materials. Together with other TCBL Associates they are part of a ***business ecosystem based on shared values****, working together to innovate and create relevant business models*[3].

The TCBL Lab model is built upon a common framework, developed by the TCBL Labs, in which laboratories in the textile and clothing industry all over Europe (about 60 labs at the moment) are brought together as a varied and complementary network. In an attempt to summarize the TCBL lab model and fit it on a graphic visual representation, we define it as a three fold stacked model as follows.

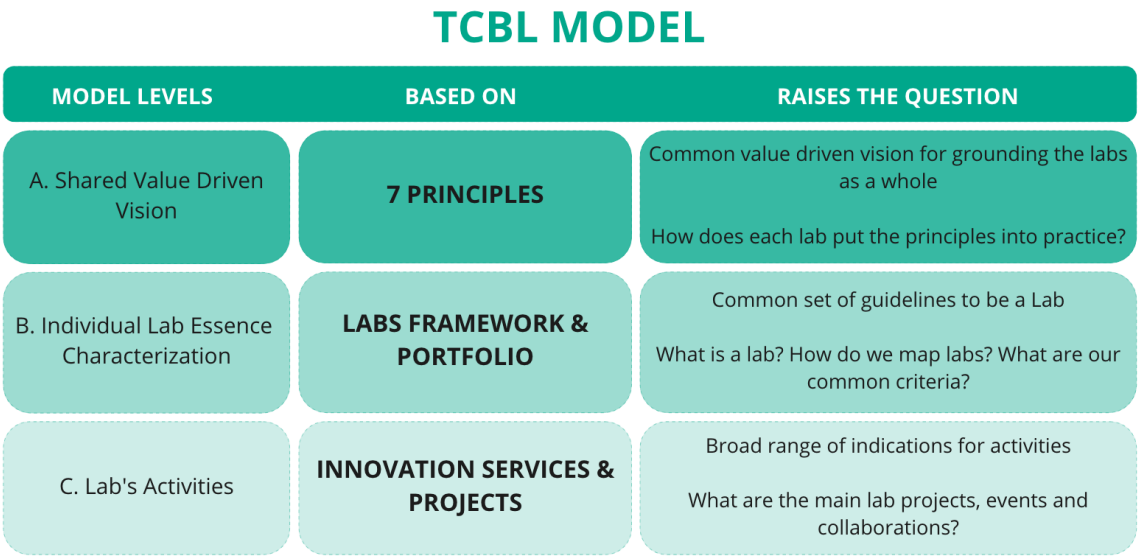

Figure 2 TCBL Model

Each of these 3 levels is further explained below:

A. Shared Value Driven Vision

The first level works on grounding the labs as a network to a common vision, it embeds and anchors all of their work to a set of 7 common principles, that shape their modus operandi, but do not limit their individual character. When thinking of a network of individuals collaborating towards a goal, sharing the same values also aids in making decisions in terms of what topics to be approached and how to do so.

The 7 TCBL principles are:

- **Curiosity** Creative exploration of new paths, roles, social constructs and business models. Learning-driven action research as a way of life, including learning by errors and mistakes. Learning as both an individual and collective endeavour.

[3] https://tcbl.eu/labs and https://tcbl.eu/labs-about

- **Viability** Things should stand on their own feet, but can do so by equally increasing the prosperity of businesses and the well being of communities; this is our ultimate goal. Importance of both monetary and non-monetary transactions.
- **Durability** Commitment to the environment, towards circular economy and zero km. Above all, reduce consumption and a consumption-driven culture, work towards sustainable fashion. Reduce waste, design for durable relationships.
- **Multiplicity** Value of different cultures, traditions, opinions. Roles for both professionals and amateurs, different labor specializations. Designing for diversity of needs and tastes. Allowing for multiple business models to co-exist.
- **Openness** Trusting others by sharing resources and information. Search for common processes, platforms and standards: interoperability. Participatory decision-making, using social media, connecting with others. Transparency in business practice (such as in sourcing, pricing, etc.).
- **Respect** Protection of privacy, authorship, and IP. Dignity of the individual, power of social knowledge. Value of place and territories. Caring for things, establishing emotional links with the clothes we wear.
- **Responsibility** Commitment to reliable, trustworthy, professional behavior. Accountability for the consequences of our actions. Responsible design, responsible production, responsible selling, responsible consumption.

B. Individual Lab Essence Characterization

The second level highlights the character and nuances of each Lab, by understanding and analysing the basic activities that each Lab performs, its audience and its composition in terms of value generation and people, promoting their local variety of knowledge and complementary skills that convey their essence.

As an output of this process, during TCBL as a project, a booklet was published on the Issuu platform in August 2018, under the name of T&C Business Labs Portfolio 2018,[4] where we can understand the different types of institutions that initially composed the network. Today the updated and ongoing list of participants' labs can be found on the foundation webpage via the link https://tcbl.eu/labs.

C. Lab activities

On a third level, it looks at concepts of developing its innovative services and engaging with its surrounding, through activities. These activities happen locally with and for their community, or in a networked manner, or exploring its connection to industry. Specific types of activities executed by TCBL labs can be found at https://tcbl.eu/projects.

[4] https://issuu.com/tcbl/docs/t_cbusinesslabsportfolio2018

2.3. Fabricademy innovation model

As presented in D2.1, shemakes.eu also relies on the background of the innovative training program Fabricademy that was selected for its originality and its disruptive vision for future Textile and Clothing applications combining the following key values and outcomes:

- **HYBRID LEARNING**: Combining online learning & hands-on training by international experts.
- **NOVEL CAREERS PATHS**: Working at the intersection of Digital Fabrication, Bio-design and Textiles.
- **LEARNING BY DOING**: Expanding the practices of Fab Labs with Textile Labs and Bio Labs
- **INTERNATIONAL NETWORK**: Exchanging Knowledge with a community of like-minded individuals.
- **OPEN SOURCE**: Promoting Open-Source Culture, sharing and collaborating.

Through its experimental, practice-based, and creative approach, Fabricademy has opened new forms of education, collaboration and innovation to a wide-range of participants, coming from various ages, disciplines, and professions.

Beyond the learning activities that will act as an important fuel for enabling the Shemakes ecosystems (WP2), Fabricademy is also bringing an innovative model: it is a distributed community of learners and practitioners that are composed mainly by women and experiment new forms of collaboration.

2.3.1. Distributed approach of Fabricademy

Fabricademy is a global program that runs in parallel in different nodes. There are more than 24 nodes in different parts of the world (Figure 2.2) in different types of institutions, consisting of not only Fab Labs but also creative spaces, fashion and design schools, artist studios.

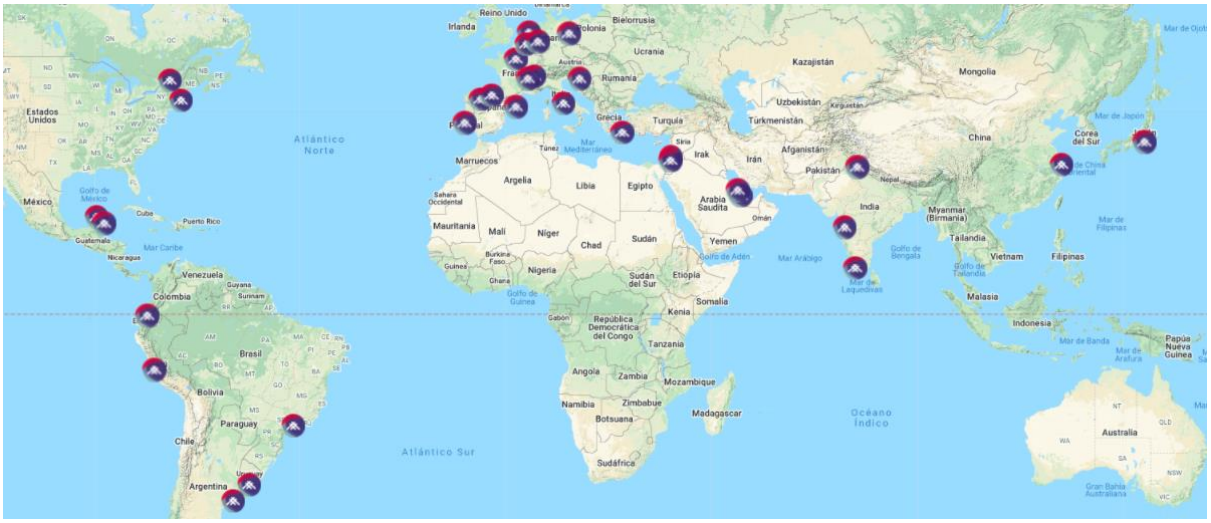

Figure 3 Node of Fabricademy (2021)

In each node, there is at least one instructor that acts as a mentor for the local students and contributes to the overall program by contents and feedback. A global team is interacting constantly with the node instructors and guarantees the recruitment of alumni, the continuous development of the program, the respect of minimal requirements in the nodes, the communication between nodes and beyond, as well as the program assessment and sustainability. In preparation for last year's edition, local instructors also run training sessions, enabling them to be more engaged and recognized in the program and to propose new elements of contents.

2.3.2. Empowering females

Fabricademy is an innovative entry point for encouraging gender equality and upskilling females in the tech domain, especially within the Fab Lab ecosystem. Since the beginning of Fabricademy, the program has mobilised many women. Most of the alumni and instructors are women. Between 2018 and 2021, the Fabricademy network has enabled more than 100 alumni with more than 75% of women exploring original and tech-oriented textile practices with the lense of digital fabrication.

2.4. Shemakes adapted model

The starting point of a critical analysis of the TCBL model is a series of questions that should be answered throughout the full duration of this project. At this moment, we lay down the questions and during the next phase we will answer those.

- **What characterizes a Shemakes lab?** What are the main additions to be made from the TCBL model into shemakes.eu?
- **What makes the labs an enabling environment for women?**

- Are there activities formats that are more enabling than others? **How to enhance and improve certain aspects?**
- **How to benefit from the different profiles and activities** executed today by the Fabricademy and TCBL networks?
- **If a lab is new** and wants to join the network, **where is the information** they need to access? What are the criteria to qualify?
- If a lab is already part of TCBL or Fabricademy network, **what are the steps they need to take in order to become Shemakes?**

In order to address these questions, we propose an adaptation of the TCBL model as described in session 2.2 as follows:

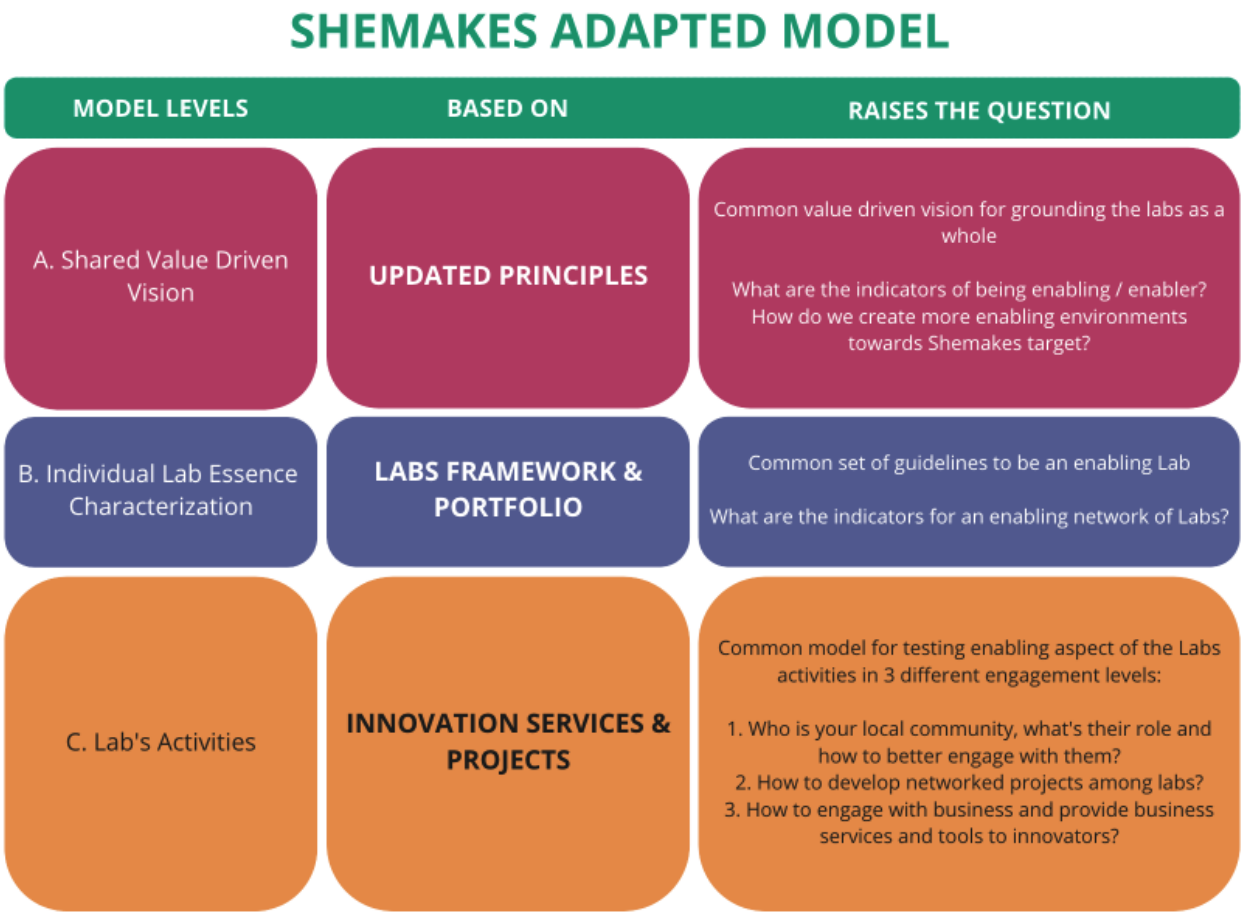

Figure 4 Shemakes adapted model

A. Shared Value Driven Vision

In order to evaluate and align the TCBL principles to Shemakes, we sourced ideas from the first output of WP1 on the **Gender and Innovation Vision.** A brainstorming exercise on the Shemakes "Open Gender System" was conducted on a Mural tool on January 15,

2021 in a zoom call with all the consortium partners. Based on the output of this session, Frederique Thureau (TCBL) created the first propositions of the co-created **Vision, Value Approach on Shemakes & Base for Enabling Environment** (on 31st january, 2021), as follows:

Gender and Innovation Vision

Since we all come from varied backgrounds, we have varied approaches to Gender Vision. However, in this project, we have to align on a **synthetic** vision (= the opposite of the lowest common denominator) that can be useful to make the project attractive to **mainstream women**, who need to **increase their Value in the Textile and Clothing** value chain and whom we will help achieve this objective. Focussing on **Novation** (innovation, exnovation, renovation) is also a handy way to **change the perspective** on Gender, as much as a sense of **purpose**, a feeling of **sisterhood** and **collective hands-on experiences.**

The Approach of Values in Shemakes

Feel absolutely useful in the T&C economy: they are the biggest numbers of workers in the T&C (and they should not just disappear as anonymous numbers in the payroll). They should be made aware of their role in the T&C sector, and learn how to think with facts[2] and figures. Naturally, what we aim at is for them to be the most subversive force and to turn the T&C sector to a leading sector for sustainability, durability, circularity, matching innovation with positive impacts and social entrepreneurship.

Become equally treated: they have the same opportunities, the same jobs and earn the same wages ; it is all the more important as they most often contribute significantly to the households revenues (on one hand) and need it when they are single parents.

Be proud of their mix of talents: beyond gender, all individuals have varied talents that can be further developed. So women are good in a whole range of disciplines, from the most creative to the most technical, from the most analytic to the most synthetic, and from the most traditional to the most futuristic.

Empower their strategies: give them the enabling conditions to grow their value, to learn, to act, to benefit from mentoring and support, and to communicate accordingly.

Basis for Enabling Environment

Change of mindset: be proud to be a woman (in the T&C sector), be oneself and confident in one's own talents and resources, dare do

Alternative curricula: collective, horizontal, learning by doing

Critical thinking and systematic knowledge about the changes (in the T&C value chain) and the holistic impact of any job

Hands-on tech skills: tools (3D, VR, Coding etc .) and sectors (bio)

Digital made easy, accessible and fun"

While this document was mainly brought in the discussion for achieveing an agreement on the Shemakes slogan, it's information also served defining Shemakes model in two ways:

- As a criteria for the labs to list activities executed in the past that would fit into our initial view of an enabling environment. The findings from this exercise will be deepened on section 2.2 C ahead.
- **Basis for evaluating the current 7 principles of TCBL**

When confronted with the 7 principles of TCBL model, most of the 6 core labs are aligned with the overall principles, however they miss more specific guidelines towards the gender balance and diversity itself. Therefore during the next development of the activities and structuration of the community surrounding the labs, there will be co-creation exercises to extract an additional principle that embraces Shemakes vision & values.

B - Individual Shemakes Lab essence characterization

Labs do not operate as individual entities but they operate as a network. Their variety of characteristics function as one unity, balancing each other off into creating a whole. We asked the labs to fill in their profiles using, as a basis, the TCBL framework. From the characterization of the core Shemakes labs we are able to understand potential differences and/or adaptations to be made to this "profile mapping". As mentioned in chapter 2.2 the questions (Annex 9.2.1) derive from the T&C Business Labs Portfolio 2018 and are expanded towards a first proposal of Shemakes lab essence characterization.

The initial adaptations made to the TCBL survey were twofold: 1. Staff gender question, added a possible non-binary alternative of answer, 2. Covid times, trying to understand the changes that Covid brought to the dynamics of the lab and its activities, not knowing until when lockdown/pandemic measures will still be in place and in order to keep adapting to the possible scenarios. The exact data can be found in Annex 9.2.2 and a description of the respondents (6 core labs + Matrix as WP4 lead) can be found in Annex 9.2.3.

Shemakes.eu core labs general analysis

Labs were ask to define themselves under the TCBL typology of Design, Make and Place lab, where:

Design: creative essence, focussing on research, design, encouraging creativity and experimentation, strong connection to education.

Make: technical essence, focussing on material production for the T&C industry, building/offering equipment or testing.

Place: social essence, connected to their territory, designed as a place for people with the focus on human interaction and labour.

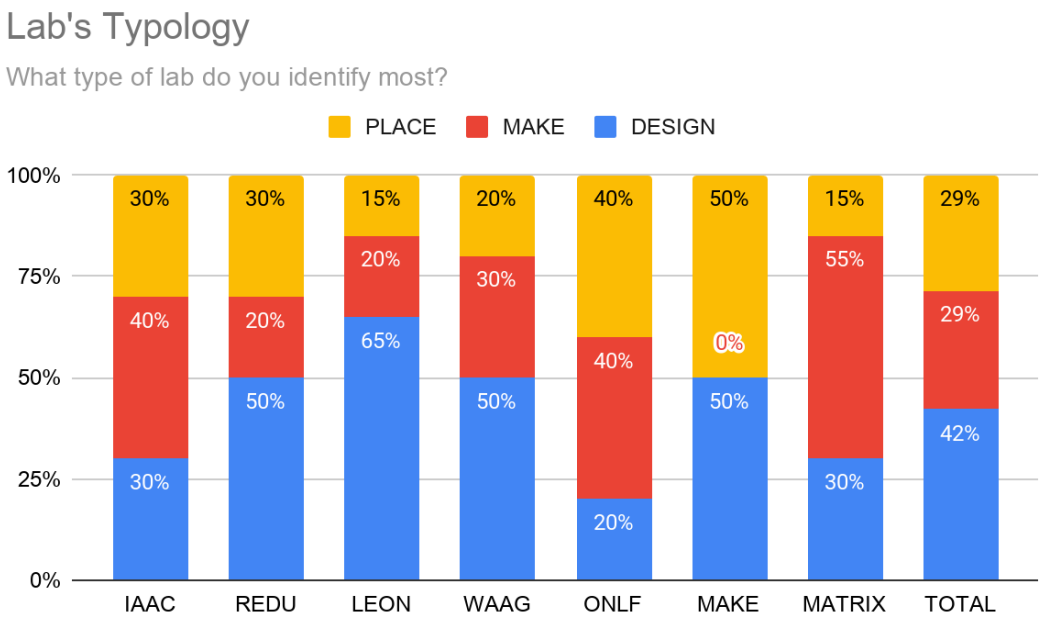

Figure 5 Lab typology

While on average we see a balanced reality among the three types of labs, with a slight advantage of Design labs. When looking at individual level, three labs characterise better from their maker aspect (IAAC, ONLF and MATRIX), while Makesense is the only lab out of the initial group that doesn't relate to this technical essence, focusing its activities on more creative and social areas.

In order to understand the involvement with the base networks, Labs were asked which network they are part of. We can see that 5 out of the 7 labs belong to TCBL network (IAAC, REDU, LEON, WAAG and MAKE), the exact same ratio is also true for Fabricademy network (IAAC, LEON, WAAG, ONLF and MATRIX) and some labs also belong to other networks bringing into the project a diverse point of view, yet sharing understanding of the initial concepts that serve as foundation to this project.

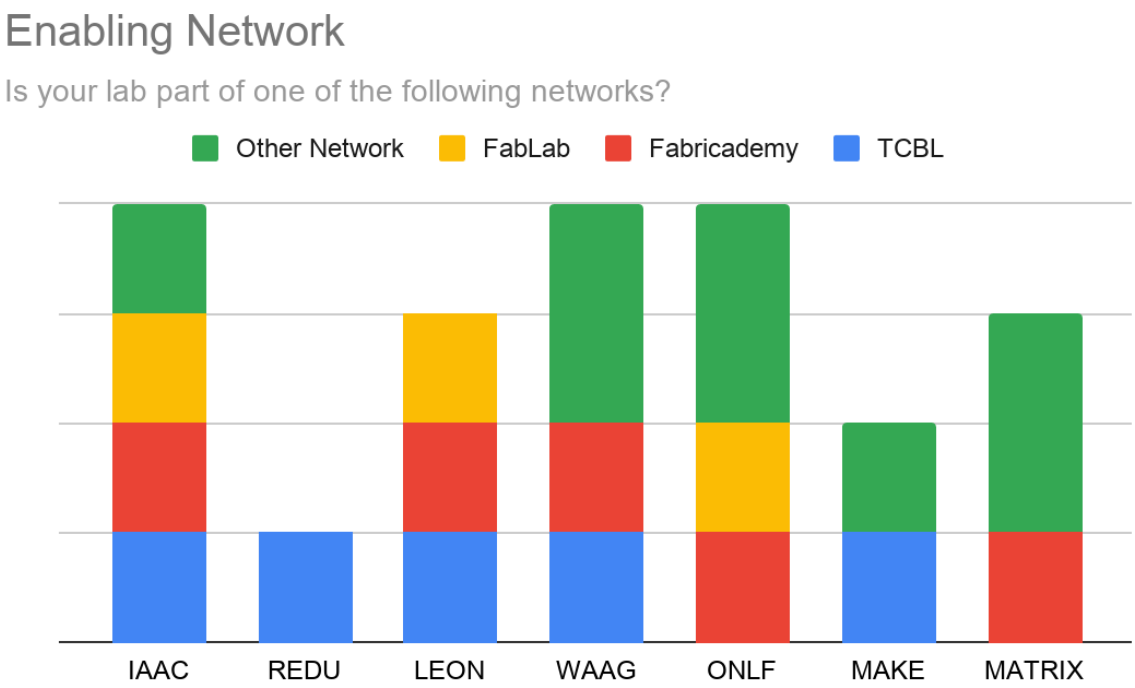

Figure 6 Lab network

Staff amount, employment format and gender

We asked the labs to identify their staff composition in terms of employment format (full time, part time, freelancer or volunteer), while also making the gender cut.

In terms of total staff size, 5 labs (REDU, LEON, WAAG, ONLF and MATRIX) share similar structure having a small structure with total staff around 5-10 people. IAAC has a medium size team of 34 members, and Makesense is the biggest lab of all core labs. For the purpose of analysis the volunteers staff of Makesense was removed from the chart data, however it is valid to point out that those counts for about 2000 individuals, split evenly in women and men.

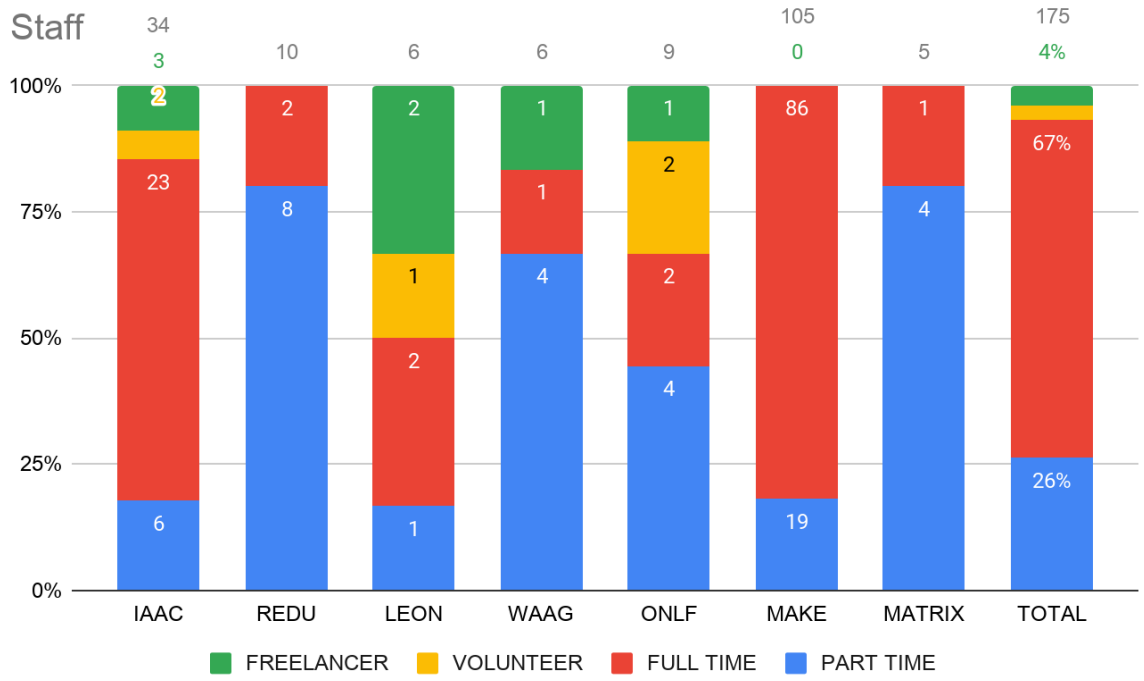

Figure 7 Lab staff

When looking at the gender split amongst labs, we can perceive an advantage in the proportion of women vs men, in total representing 67% vs 32%. The only lab where more men are present in terms of staff than women is IAAC and is also valid to bring to light a positive result from the gender neutral identification as They/Them of 5 staff members from Makesense.

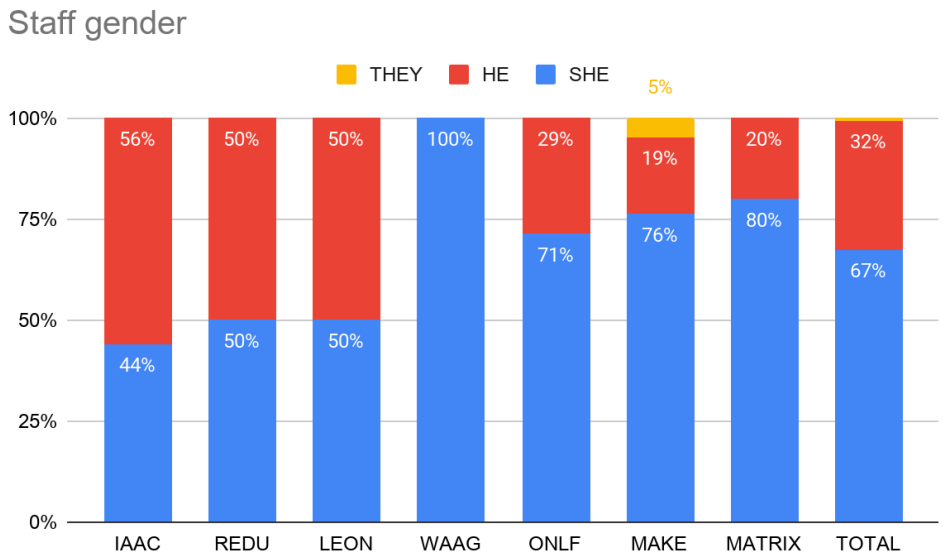

Figure 8 Lab Lab staff gender

A common hypothesis when understanding the gender gap on employment terms is that often women have more part time contracts than men, since they are expected to perform a second job as the family and household maintainer. Looking at consolidated data from our core labs, this hypothesis cannot be confirmed, in fact women have more full time contracts than men in this case.

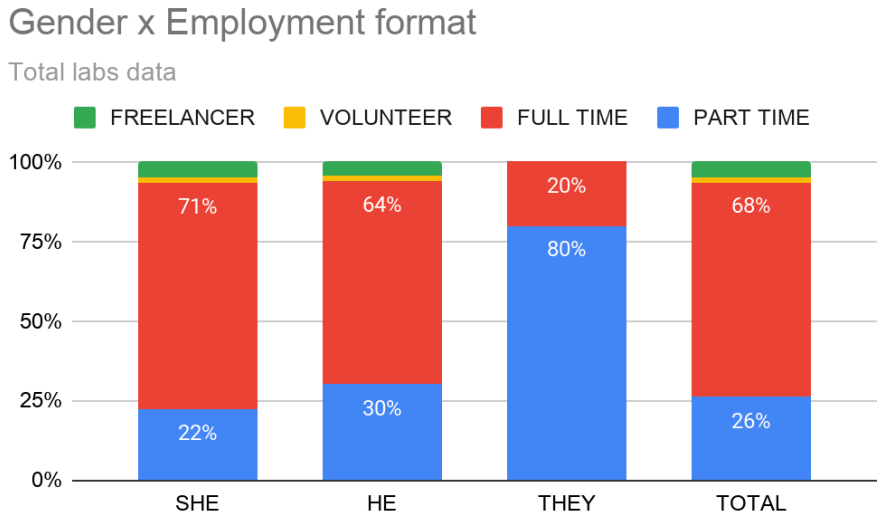

Figure 9 Lab gender x employment format

Nevertheless, the analysis changes significantly when excluding data from Makesense lab. Since the staff number from this lab is much higher than the rest, it tends to mask results towards its own reality. From the new chart we can see that women are more concentrated in freelancer, volunteer and part time employment formats, than in full time format. While it is very hard to draw any conclusions from this small base sample,

we can leave an open question on whether this characteristic should be incorporated as an analysis of the full TCBL and Fabricademy network for further insights on how women are positioned in the innovation field of the business labs.

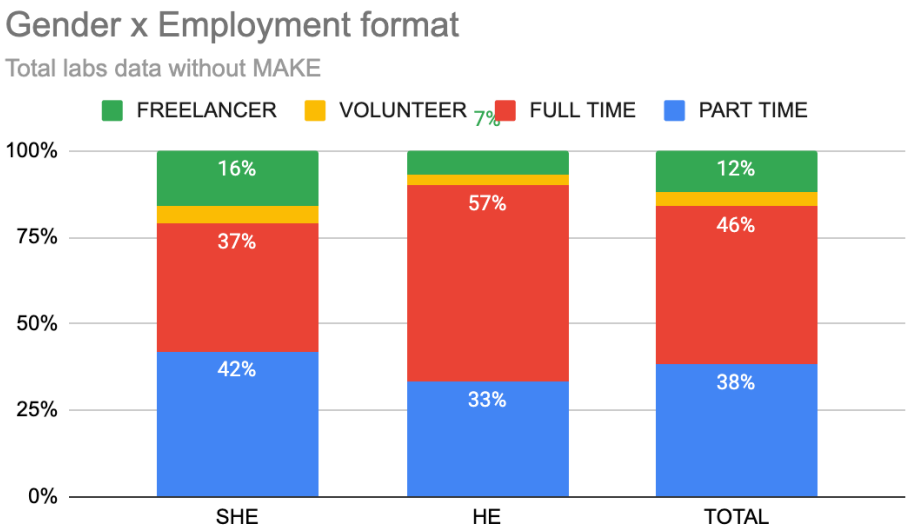

Figure 10 Lab gender x employment format excluding Make

Population and lab surrounding

In an attempt to verify the different groups of people that populate the core labs, we asked them to classify the lab's regulars. The outcome is a very heterogeneous group of profiles, where in average it weights out and gives us a very balanced composition of Staff, Students, Teachers and Citizens. Some categories overlap with each other, therefore the percentages should reflect the perception of each lab towards its population, more than an ecstatic number of individuals.

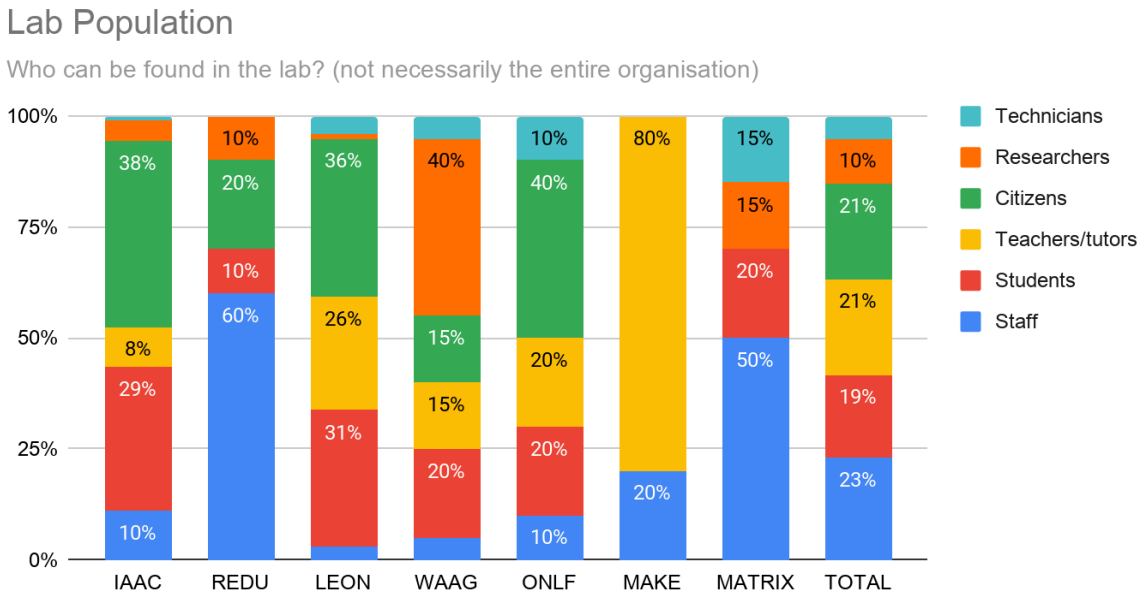

Figure 11 Lab population pre-Covid

Labs were also asked to reflect on the changes the Covid pandemic caused in the population dynamics. In certain labs like REDU, WAAG, ONLF and MATRIX, the representation of staff vs the rest of the population increased significantly, while for IAAC and LEON the major shift was an increase of the number of students at the expense of other categories.

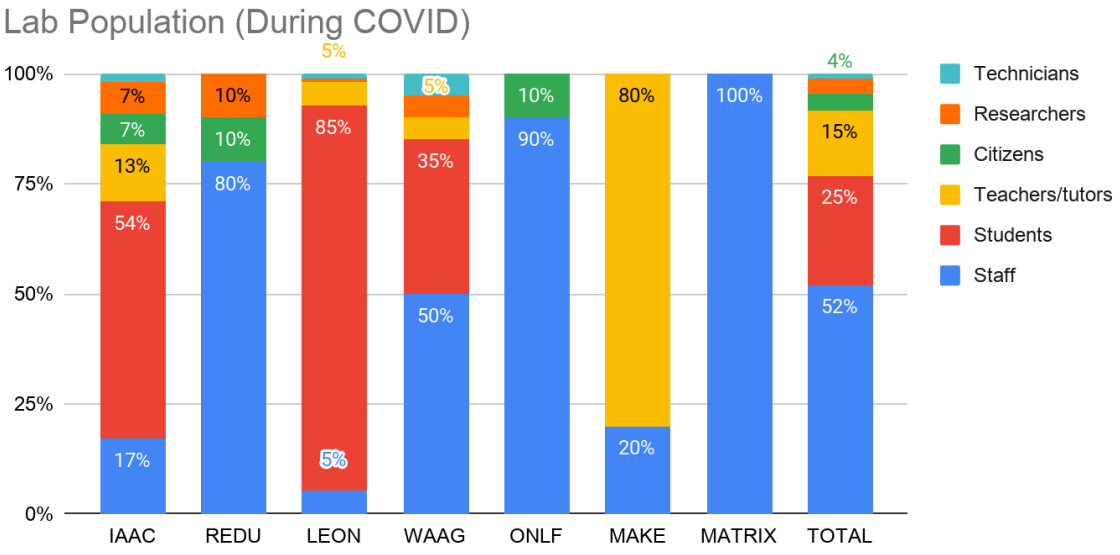

Figure 12 Lab population during Covid

The most effective analysis of the Covid impact, however, is via the total consolidated data. It becomes clear that the presence of citizens, researchers and technicians significantly decreased during the past year. The impacts of this behavioural change

are still to be explored by the labs and the society in general. Altogether, we have to take into consideration that we still live in a world with restrictions and that we must be prepared to adapt in order to keep engaging with the different population types that are much valuable for shemakes.eu.

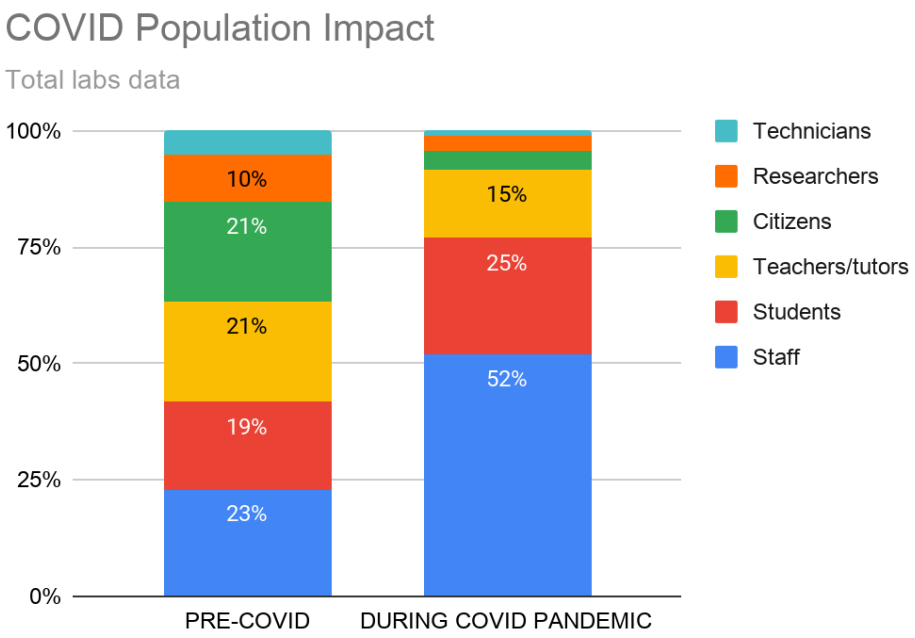

Figure 13 Covid population impact

C - Lab's Activities

Labs were also asked to provide information on the main activities being performed. *Education / training* related activities are the main activities of LEON and ONLF, being also relevant activities for almost all labs. *Project based research*, like shemakes.eu, has an important share for all the lab's activities portfolio. It is valid to highlight that *Production* happens exclusively at REDU and LEON, while *Incubation / Startup development* related activities are conducted by MAKE and MATRIX.

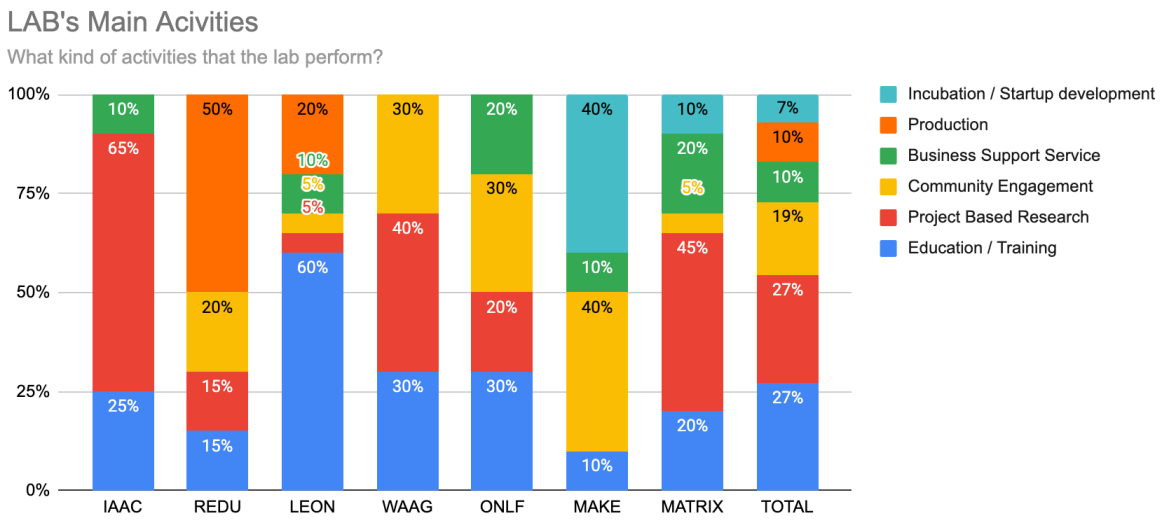

Figure 14 Lab main activities

Related to these activities are the values that are generated among each lab. It can be concluded that the four values are almost equally generated among the 6 core labs + Matrix. Besides LEON, each lab includes the four values and while some labs put a greater emphasis on one specific value, they do balance each other off when looking at the average.

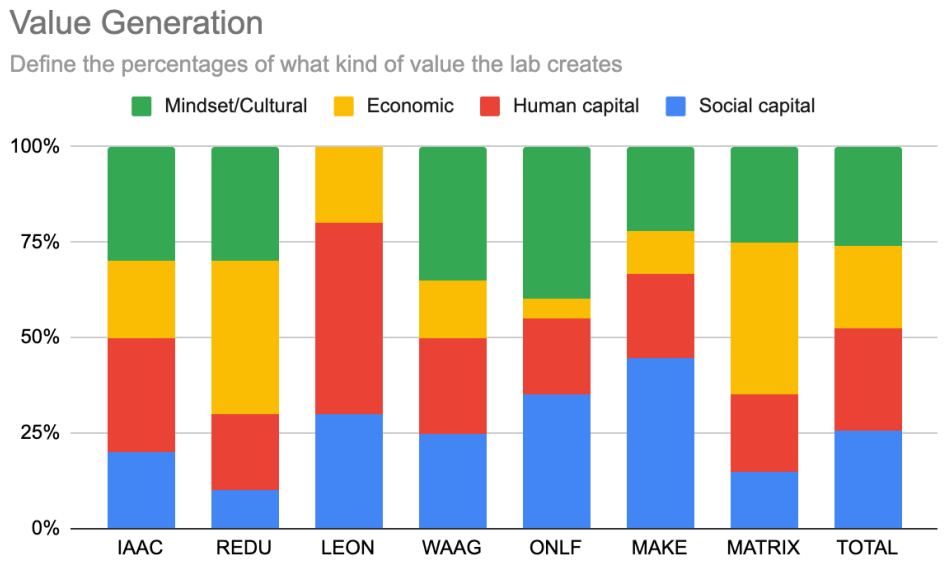

Figure 15 Lab's value generation

Additionally to this quantitative data, each lab was asked to bring examples of relevant projects that enabled participants in the 3 different levels of engagement: community,

lab to lab and business. The documentation of the activities can be found in Annex 9.2.3.

As an outcome of this process we can highlight the following common enabling aspects.

- **Interactive and co-creative:** activities that engage with the community all have an interactive, co-creative character and allow the community to actively participate. This can be for example hands-on workshops or real-life events to create awareness or to involve the local community more actively in topics more context specifically related.
- **Knowledge sharing and open source:** lab-to-lab engagement activities are focused on knowledge exchange in a collaborative manner. Lab-to-lab activities are hybrid (online and offline) and have a co-creative and informative aspect. The activities involved in lab-to-lab projects are workshops, talks and training and learning programs.
- **Interdisciplinary:** Business engaging activities are interdisciplinary and co-creative that allow for critical-thinking. They are informative and often have a facilitating aspect in the form of consulting, mentoring or teaching.
- **Human-centered:** In general from the lab's activity mapping it is understood that all activities are human-centered ones, where the instructor/facilitator plays a fundamental role. To define the characteristics of these role models WP4 will provide a more in depth understanding. An enabling environment is in its essence a combination of enabling people.

2.5. The toolkit concept

The Co-Creative Approach

In Shemakes, we can draw from the co-creative approach developed in the co-creation navigator from Waag[5]. The co-creation navigator can also serve as inspiration as to what final form our own toolkit may take.

The co-creative approach begins with identifying the core team and its values, as we have done in a co-creation session with Shemakes partners (described in section 2.2 A). In the next phase, specific communities will be identified with whom to work (a process which varies from pilot to pilot) and how to connect with them. Following from these foundational steps, co-creation starting from a community of interest can begin.

[5] https://ccn.waag.org/navigator/

First, we will work to identify the needs of a community. What is the main problem that the community is facing? It may be equal gender representation, fair pay for work, cultural conditions that discourage certain people from participating, or something altogether different than what we, the project team, may expect.

Once these needs are identified, co-creation can move into ideation: **what does the community need to address the identified problem?** What can we build, develop, or do as a multi-stakeholder group in this regard? Once options are agreed upon, the consortium along with these communities of interest can collaborate **to develop the enabling environment that suits them.** The final form of an enabling environment is in this way shaped by the needs of the community. It may be a physical place like a textile lab, or (of particular relevance during Covid) online environments and resources that provide certain tools or enable certain activities.

Because these environments will be based upon a community's needs and co-developed with them, it is not possible to say with certainty what their final form or content may be. Nonetheless, as described in the following sections 2.2 A, B, and C, we can look to the shared consortium values that have already emerged, learn from past experiences in projects like TCBL, and begin to imagine the types of activities or behaviours which may be developed through each of the pilot labs and supported by the innovation services final toolkit.

Defining the enabling characteristics will be our fundamental base to these answers. As mentioned in section 1.2, an enabling environment ought to have the space, culture, resources, and accessibility that enable a certain practice or activity to emerge.

The criteria for any given enabling environment depend on the specific needs of a community in a given context. Understanding these needs and ultimately developing an environment which enables them requires a co-creative approach.

We list here main characteristics that we expect from a toolkit and understand that this is a living concept that will grow and be tested and adapted during the next months, in order to shape it into what will be its final version.

2.5.1. Main guidelines

In addition to the main values and principles that drive the labs, we depart from base criteria and alignment of guidelines that "set the mood" of the activities to be followed. These generalist concepts are valid for all activities happening on WP2's learning paths

as well as the different types of WP3's engagements further described in the following chapters.

Absolute Dos	• Show commitment to gender equality, to equality of opportunity for participants (both women and men), and to diversity, in all its forms, throughout their lab/workshop participation, but also throughout all your Labs activities and communication. • Be receptive to the multitude of opinions and points of view and communicate openly and gently with those around you. Embrace the facilitator role. • Be respectful and mindful in your surroundings and to your fellow colleagues and participants also in the way you receive and give critique to ideas. • Walk the talk, practice in your actions the values you preach. Mind the use of resources, care for recycling, zero waste approach, etc. • Data privacy, make sure to have shared agreement on confidentiality / privacy • Safety first
Absolute Don'ts	• Don't partner with entities known for infringement with human rights and/or polluting companies. • Don't accept any form of aggression, harassment, intimidation regardless of the mode of manifestation: verbal, physical or written. • Don't accept any form of discrimination on the basis of gender, nationality, sexual orientation, race, age, disability, stereotyping.

Table 3 Dos and don'ts

2.5.2. Tools and Format

Regarding to how to display relevant enabling information, the toolkit will follow a list of basic qualities it should have:

- Open-source access
- Easy to follow, intuitive navigation through content
- Right amount of information, not too complex but not over simplified
- Iterative per nature - allows feedback and shared editing
- Is able to adapt to different realities - online & offline, with or without technological resources

Adapts to the target audience - For who, with who?

The toolkit will communicate primarily with the instructors/facilitators of lab's activities, however the set of guidelines should be adaptable based on the participants of a given activity e.g. working with children is extremely different than with adults, the skillset of the trainers and instructors needs to be adapted. A toolkit needs to allow this customization for different activities and stakeholders involved.

A toolkit reference: Waag's Co-creation navigator

As mentioned in section 2.3, we use Waag's co-creation navigator as an example of a possible practical format to be followed at shemakes.eu toolkit and moreover to illustrate, share, deploy and disseminate shemakes.eu activities. Its high interactivity allows a great number of content to be displayed under an organized visual graphic interface. The toolkit can be fully experienced on its online version, however we attempt to bring the most important aspects here and how to relate them to this project.

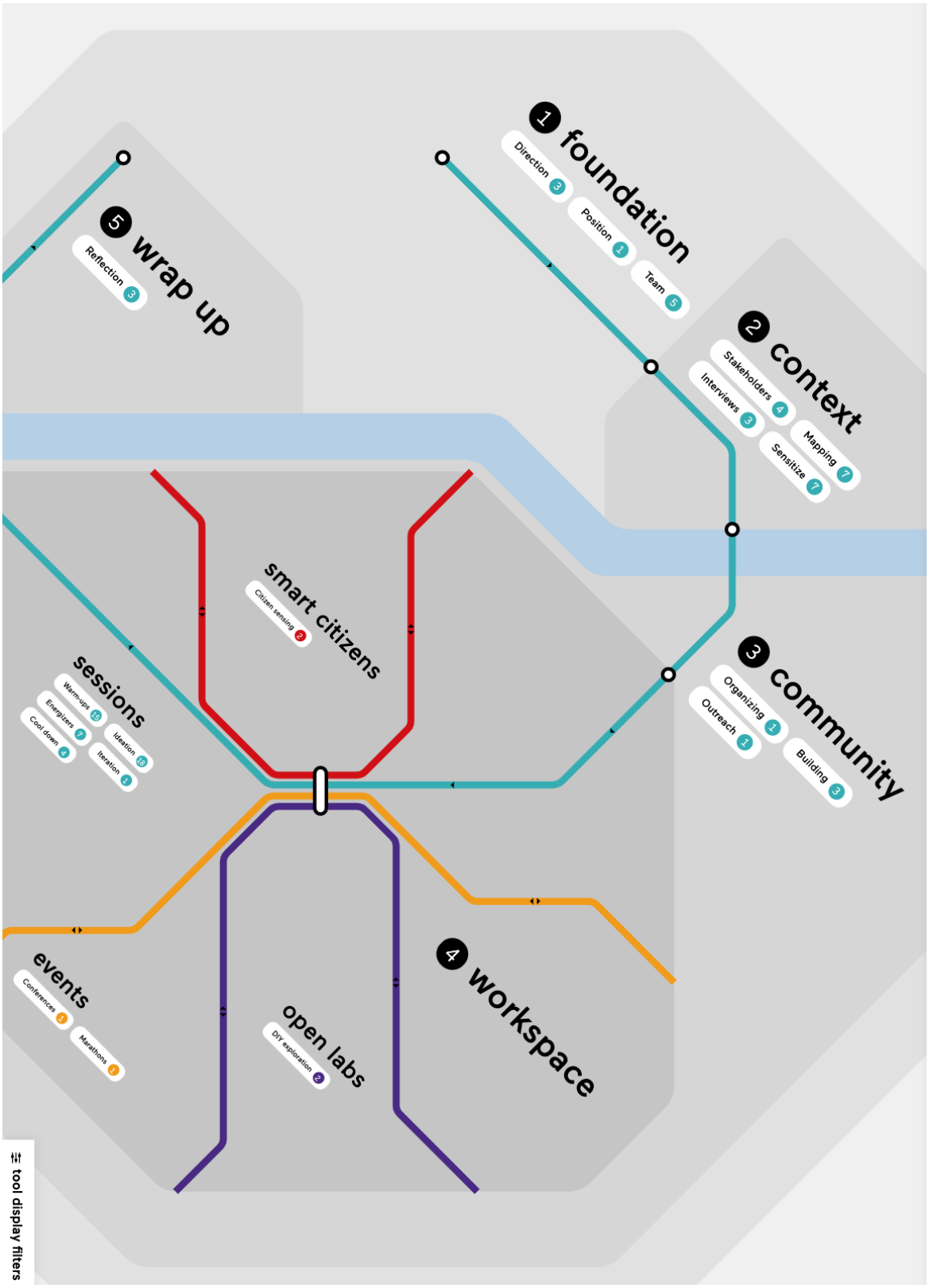

Figure 16 (screenshot from navigator)

As described in the about session (https://ccn.waag.org/about), the co-creation navigator "guides you through the different stages of co-creation, from preparation to execution, and directs you to tools and methods that help you in each stage. You will learn how to build your project's foundation, how to get in the right frame of mind and how to remain innovative throughout the co-creation process."

Co-creation is turning out to be an important criteria for shemakes activities but is not the only one. In order to make sense of the reality of this toolkit, some adaptations would be needed and more methodologies/exercises would have to be incorporated. One could imagine the "stations" to be the different types of engagement and/or learning paths.

While interacting with the tool we are also presented with certain filters, that determine which type of activity will be suggested for each zone. We can also make a parallel here with different age groups from the learning paths, the content complexity and format adaptation (online/offline).

Figure 17 screenshot from navigator

After defining the basic filter, the user is then confronted with different activities proposals, and for each one of them a toolkit with step by step is available.

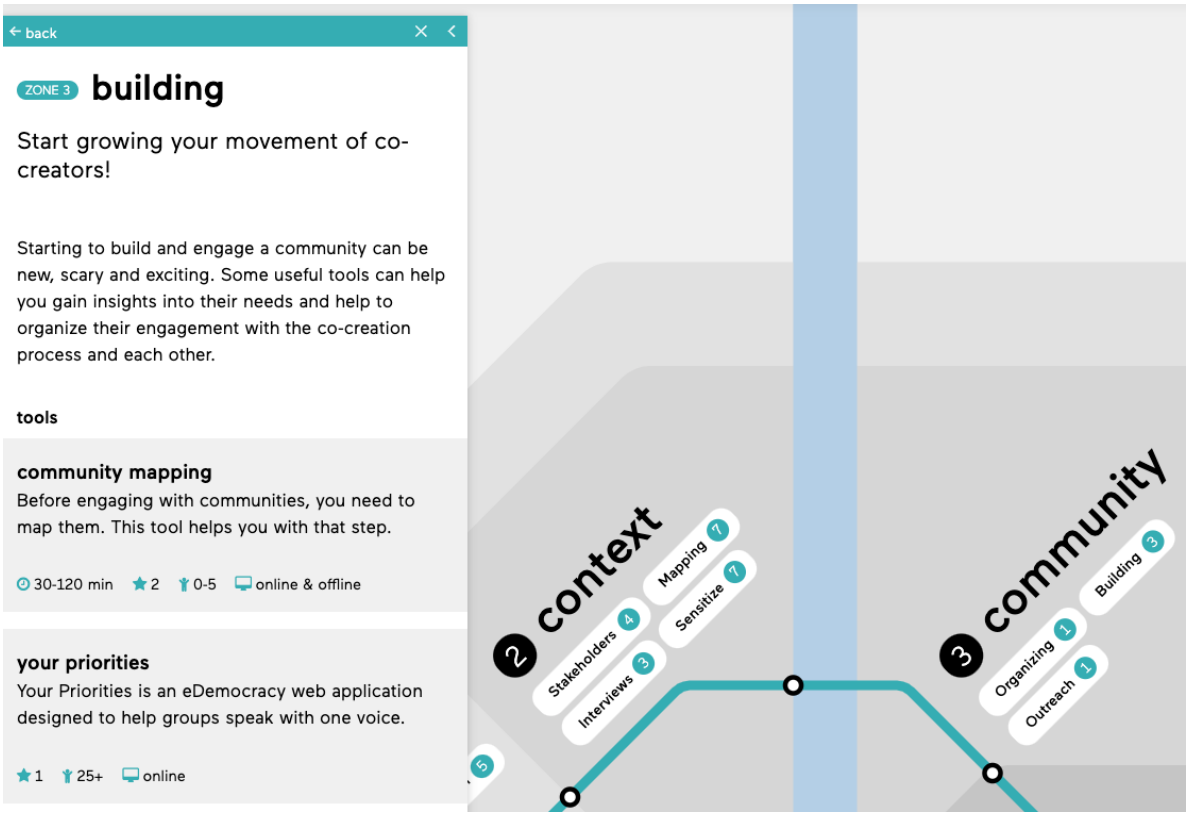

Figure 18 (screenshot - tools suggestions on community building exercises)

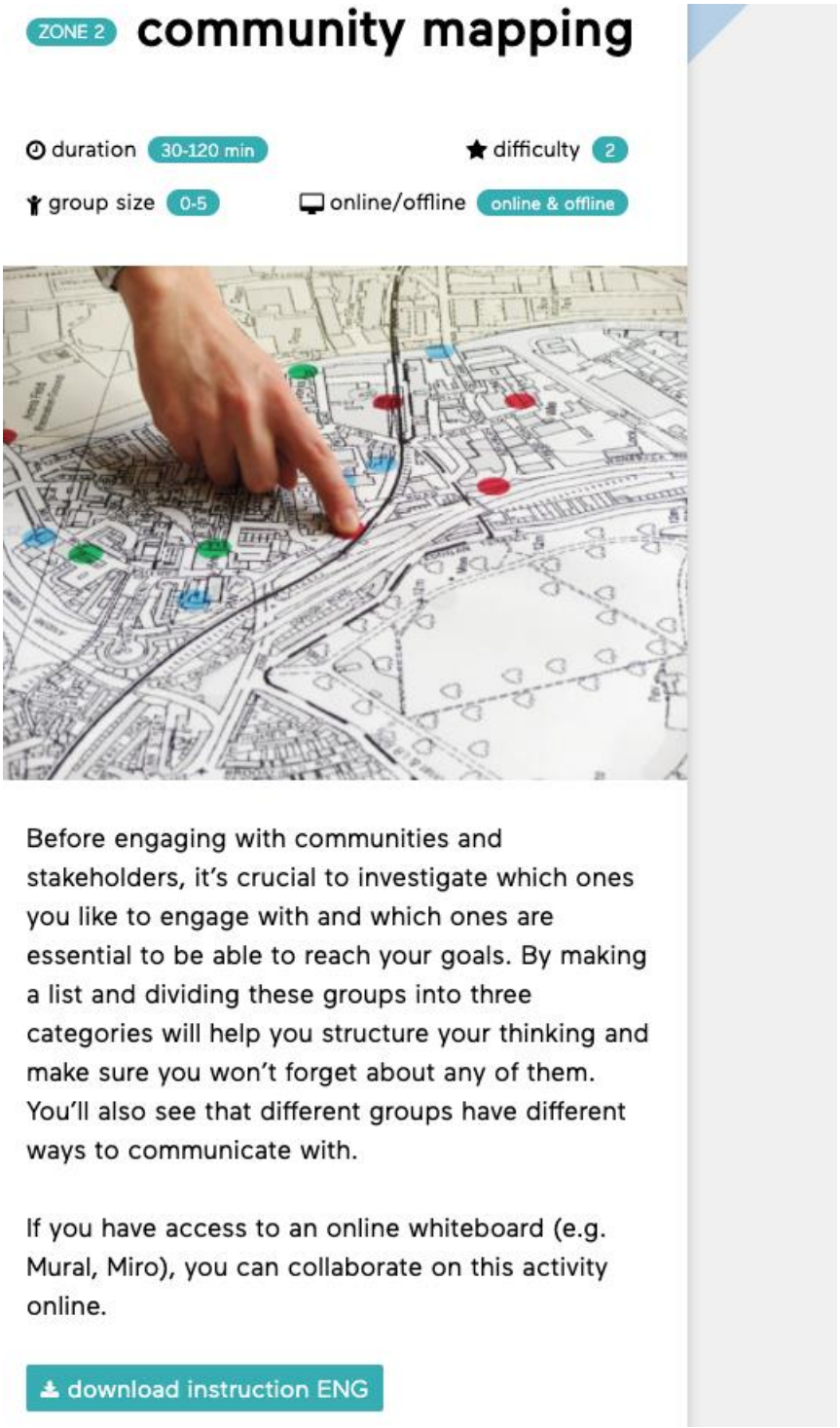

Figure 19 (screenshot - tool suggestions on community mapping activity)

An example of this "downloadable toolkit" is found in the Annex 9.3, figure 9.2. In generic terms they are a one-pager, pdf format document, with the following content:

Activity purpose: Situate the departure point and the final goal to be achieved, also framing the relevance

Timeframe: x - y minutes
Number of facilitators: X facilitators per Y number of participants or self-sustained exercise
Group-size: X people per group
Materials: Bill of materials
Instruction: Step by step on how to guide the session/event/talk/workshop

2.6. Evaluation and documentation guidelines

2.6.1. Evaluation guidelines

For Shemakes we would like to propose guidelines on how to be aware of our own gender biases and understand how gender thinking in general has a great influence on social structures in a specific context.

Gender thinking works on three levels; **a personal level** to which a society is organised by attributing characteristics to women and men. This influences the **symbolic level** because these so-called characteristics are valued differently. At a **social or institutional level** different sectors emerge that are predominantly female or male. Besides the different valuations for the different types of activities that are referred to as being typically 'male' or 'female', the institutional translation also plays a role[6]. In this project we can identify the gender pay gap in the T&C sector as being a great example of this translation.

Unconscious or implicit gender bias

"The concept of **implicit bias**, also termed unconscious bias, and the related Implicit Association Test (IAT) rests on the belief that people act on the basis of internalized schemas of which they are unaware and thus can, and often do, engage in discriminatory behaviors without conscious intent " (Pritlove et al. 2019, 393, 502–504).

The theory about unconscious bias is that it causes us to make the wrong choices even when we want to do the right thing. We must also take into account the fact that, perhaps, some of us have prejudices grounded in our culture, education, family environment, relationships, etc. of which we might not be aware and that we are basically unable to do what is considered socially desirable. Like some men, sometimes, women are just as likely to discriminate against other women[7].

[6] Intersectioneel denken, Ella, 2017
[7] The good, the bad and the ugly of implicit bias, Pritlove et al., 2019

The first draft of guidelines highlight the importance of intersectionality. Striving for women rights includes intersectional thinking because the various forms of oppression and exclusion overlap and reinforce each other. Racism for example affects women differently than it affects men. Being aware of this intersectionality allows for a more nuanced view of the other. It also requires reflection on one's own view and privileges[8].

Guidelines for **intersectional thinking[9]**

- **Recognize the multiple struggles,** Acknowledge systemic discrimination due to multiple aspects of ones identity, like race, gender, economic status etc. Be aware of these multiple, systemic barriers to opportunity and multiple forms of prejudice.
- **Hear the voice of those most affected**, stepping aside and allowing them to be their own spokesperson.
- **Be inclusive and incorporate different perspectives.** By actively seeking for diverse groups, rather than being accommodated with the ones that approach us.
- **Be aware of disaggregated data**, make sure data does not overlook the experiences of individuals with intersectional identities.
- **Connect the dots**, Assess how issues connect with seemingly unrelated topics and consider how they may have unintended consequences for other areas.
- **Strive for collaboration** with/and for people
- Highlight the importance of **coming together as a community** to achieve equal opportunity.

2.6.2. Documentation guidelines

The words we use often reflect our thinking and vice versa. Being aware of the meaning of language and communication style encourages us to understand the social structures and how to act upon them and improve.

Guidelines for inclusive language[10]:

Gender neutral, non-sexist, non gender specific

[8] Intersectioneel denken, Ella, 2017
[9] Ten tips for putting intersectionality into practise, The opportunity agenda, 2017
[10] De incomplete stijlgids, Women Inc, 2020

- Be consistent in the use of titles and forms to address women and men. But also the use of (only) first names and surnames, do not say Mr. Jansen and Anita but instead Edward and Anita.
- Only use gender specific references when specifically referring to a gender. For example, do only use she, her, herself when specifically referred to women.
- Use the words ladies/men, girls/boys in a parallel way, so women AND men.
- Alternate more often in this sequence, we tend to put men first like dear Sir/Madam.
- Use similar words to describe the same characteristics/traits of women and men, for example do not write: only ambitious men and aggressive women are successful.
- Avoid gender-specific professional names.
- Avoid irrelevant and unnecessary gender descriptions.
- In general, use the terms the person in question would like to use.
- Where possible try to use verbs instead of nouns, don't: Tom is a documentary maker but instead Tom makes documentaries.
- If you don't know which personal pronoun someone prefers, use she/he/they.
- Avoid unnecessary references to the relational or parental status, for example don't say Maria and her husband.
- Be careful talking to groups, do not use the word 'guys' for example but instead use a non-gender specific word like colleagues, or friends.

Ethnicity or religion

- Use the national definition for anyone who is a citizen.
- If it is important to make a distinction, do so with a dash like Turkish-Dutch person.
- Do not use the word immigrant but rather say a Dutch person with a migration background.
- Avoid unnecessary references to ethnicity or a person or a group.
- Do not use stereotyping concepts that may be offensive to different groups.

Physical and/or mental ability

- Avoid unnecessary references to the physical and/ or mental ability of a person or group.
- Avoid using terms that identify the person with his/her/their disability.
- Do not use the terms victim and patient to refer to a person or group with a certain disability.

Guidelines for inclusive imagery

- Be diverse in gender, ethnicity, body type, gender-expression, sexual orientation, physical ability, etc.
- Avoid imagery featuring exclusively “normative” beauty standards
- Avoid stereotypes when picturing activities, male-female relationships, etc.
- Prioritize natural, non-photoshopped photos over highly edited images.
- When possible, use illustrations that follow these same guidelines. Remember that information may also be communicated by non-anthropomorphic figures in illustration.

3. Guidelines and tools for exploring community engagement

3.1. Main description (DoA)

As per the DoA, the task 3.2 Community projects will:

> *The Community engagement task led by REDU together with WAAG and MAKE (and four of the 12 'transfer' Labs in phase two), will firstly **collect the methods of each Lab specifically supporting equal opportunities, inclusiveness and bridging the gender gap with the local community**. It will map them in order to identify any important gaps still to be filled and how to find innovative methods for those gaps e.g. adapting an existing solution, crafting a new one. These will generally consist of **replicable formats for open laboratories, hands-on workshops, seminars, etc. as well as co-creation sessions with local creatives, innovators, makers and SMEs**. The Labs will provide a platform to share and exchange participants' inputs, building community and the role of women within that, thus gaining new insights on the Labs' challenges, approaches and opportunities. The shemakes community engagement actions will follow **a set of criteria**, to understand which models and formats are most valuable to put into practice the enabling principles of shemakes. Each lab will be organising a **number of events, 1-2 for each, trying to attract between 10-15 participants each**. The events have the aim of a total attendance of 200 people.*

3.2. The role of Community engagement in Shemakes

Community builds change. The central problem approached by the project is a systemic one, therefore needs a systemic approach for its resolution, not only from a spectre of the society, but from different categories of stakeholders. The more diverse the categories of community members involved, the more potential to contribute to a positive alteration of the gender inequality.

With over a decade long of experience in a multidimensional approach in pursuance of capacity building for sustainable development, at REDU - a social enterprise born within an NGO (*Mai bine*) - we know now that enabling positive change requires both top down and bottom up actions and a *quadruple helix* approach.

Starting from these two premises, from the expertise and background of the Shemakes core labs and understanding the realities of the other transfer labs, an *a priori* step for community engagement is the mapping and understanding the different and common roles, the shared values, as well as the potential involvement of different stakeholders. The next steps will consist in adapting and proposing different enabling methods, common criteria and guidelines followed by a series of activities to be implemented.

3.3. Community engagement in Shemakes Labs & Redu experience

Community engagement as seen by the Shemakes Labs has a **local perspective**, grounds the lab in its territory and population needs, **serving as a platform for people to meet, learn, enable themselves and others, by using labs as launching platforms to discover more and explore alternatives for positive change**. It acts as a membrane, providing knowledge and expertise from all over the world and packaging it into local and personal ways, to engage with the community.

Mapping the roles

If we analyze the past activities made by each lab we can sketch some common points of interest and needs of the communities:

- The **need for belonging** is always the common denominator of the formation of any community. Belonging/membership often involves closeness and human connection, so we can see the importance of local communities created by each lab and we can highlight common elements:
    - co-creation, learning together and business synergies as in the case of the *Leon Mini Maker Faire events* by Fab Lab Leon, where the convergence between local artisans and digital was pursued

- The **need for change** towards a more conscious and sustainable approach to the field of textiles using technology and innovation:
    - Consumers education and awareness raising on the impact of the fashion industry as in the case of *Charity Bazaars,* flash mobs and dissemination events organized by REDU or the *Fairwear Tribe* organized by Makesense*,*
    - Advocacy activities realised by REDU within the Clean Clothes Campaign network for improving the life of workers in the garments industry;

- The **need for direct actions** that show tangible results of our efforts, to exploit the traditional and to improve it with new technologies, the need to get out of the routine and to learn / develop, the defining characteristic of our human evolution:
    - Hands-on workshops, whether online or offline, on upcycling and revaluing garments like WAAG, REDU or Leon did by passing basic knowledge through healing activities for both the garments and the participants.

3.4. SheMakes community engagement criteria, tools and guidelines

3.4.1. How will the labs engage with the community

It would be fair to say that any process of community involvement should start with a diverse set of opinions and views involving a diverse section of the community. Even if this is good in theory as a starting point, in fact it is only a principle that at the time of application can bring different results than expected: for example, how do we get this diversity of stakeholders in reality?

In order to arrive at a formula that is as representative or as diverse as possible, with a potential impact on the implementation and dissemination of the Shemakes values, we must ensure that the stakeholders will be involved for an extended period of time.

In the next phase of the project we aim to identify the shared vision in relation to Shemakes comunity and a set of questions are already begging to rise:

- How to approach differences and extract what is good for all?
- What connects/should connect the stakeholders?
- What structure should define them: coalitions, partnerships, collaborations?
- How will we reach that part of the community that usually does not have the chance to give its own contribution, or is poorly represented?

Through Shemakes, the issue of gender inequality is addressed with a focus on girls and women, we cannot call ourselves inclusive, while excluding a category. With the role of advocates for diversity and inclusion, men and boys can play a unique role in reducing the gender gap and increasing the presence of women in the STEM or T&C sector.

The Shemakes community engagement actions of the 6 initial labs start from a shared hypothesis of what we believe could assist us in discovering the most enabling actions for women in and towards the T&C sector.

Following a joint research, the three laboratories aim to co-define an agenda for the event / talk / panel that will be tested and adapted later in another 12 transfer labs from the second phase of the project. Special methods and tools will be developed to give women a voice, visibility, access to technology resources and innovation in the field of Textile and Clothing (T&C).

The innovation consists in discovering and determining the current state regarding women and gender equality in the T&C industry, how do those in management approach this subject, how aware are they of these inequalities or how much effort do they put towards solving this problem? Do they have a different approach than the ones in production? Through these encounters with the stakeholders the aim is to try to reduce gender gap, a global problem, by addressing it locally.

From our own experience, both REDU and *Mai bine* NGO, the involvement of various societal actors, in addition to meeting a set standard or purpose, also highlights the duties of each actor that is part of an innovation system - cooperation and collaboration.

The Quadruple Helix Model[11] of innovation recognizes four major actors in the innovation system: science, policy, industry, and society.

The concept - highlights the importance of actively integrating the public into innovation projects as well as the role of society as a major actor in national innovation systems.

3.4.2. Enabling formats

Consult, Involve, Collaborate, Empower

Co-design practices involve the community in developing and providing a service. We can say that the development of the Shemakes community starts with / from this

[11] The Quadruple Helix Model adapted by Fraunhofer (2016), originally developed by Carayannis and Campbell (2009). Copyright © 2015 Fraunhofer.

phase, with a micro community of 6 Laboratories and with a solid base represented by the TCBL community.

By mapping and analyzing the type of activities carried out by all 6 laboratories (Miro - Initial evaluation of partial TCBL model), **hands-on workshops** and **public events** appear to be the most common activities used for community engagement, followed closely by co-creation workshops, seminars and talks.

From this perspective, based on the general experience and on the strengths of each of the 6 labs, both *hands on* and *hands off* events have equal weight. However, specifically on community engagement we believe that the most enabling formats for shemakes community engagement activities are the ones that allow participative and interactive experiences. Therefore, we propose a series of formats that follow each other and that will enable all labs to engage their surrounding community.

The first phase is **consulting** your identified stakeholders by addressing **questionnaires** or **targeted interviews**, in order to gather all thoughts and opinions on the topic.
Following next, after already having established a connection with the beneficiaries and all partners involved, is the step where you **involve** them in **talks or panels** that give a more detailed and elaborate description of the topic. At these meetings it is also important to show them the opportunities community engagement has to offer, through specific examples of positive transformation processes.

Upcoming, is the part where we start doing something about it. How? By **collaborating**: one idea is to run a **design thinking workshop,** an iterative process through which stakeholders are understood, the assumptions are challenged, the issues are redefined and innovative solutions are created as prototypes that will be further tested.
Lastly, not necessarily as an outcome of the activities carried out till now but as a follow-up of all the solutions that uncovered along the process, a **working group** will start to outline. An "open" space for dialogues, debates, constant interplay and actions, where the members will feel **empowered**.

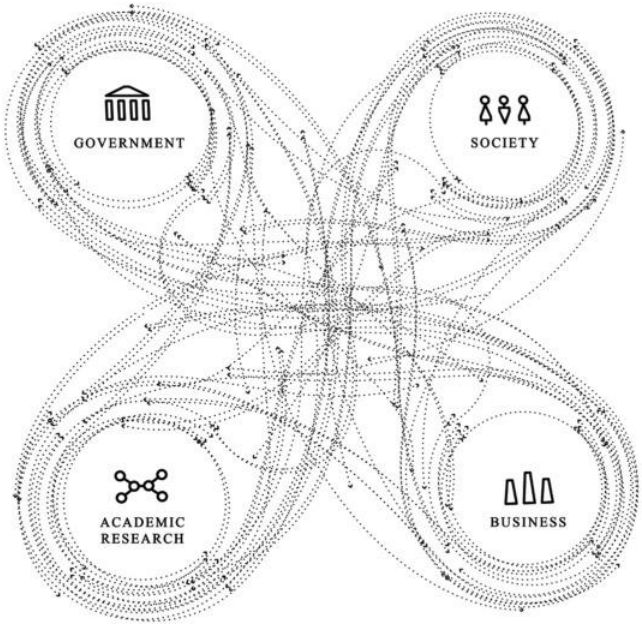

Figure 20 Visualisation of the quadruple helix model

3.4.3. Main stakeholders

Understanding our stakeholders, their needs and interests.

*The infodiversity or the **cultural diversity** is as critical for the social systems as the biodiversity is for the natural systems.* Starting from this shared belief and considering as well that in an ideal community **all members play the role of citizens**, we see the community engagement activities of Shemakes striving for bringing together people from different arenas.

Acting as a neutral space, **free from gender biases** and with constant concerns regarding inclusiveness, labs will make sure they will offer equal opportunities, if not prioritising women and non-binary individuals, in all their community activities.

The collective community composition of the labs lean towards citizens, students, teachers, creative researchers and the labs staff, bringing them in front as our main stakeholders for our local engagement activities.

However, the shemakes community must expand beyond what surrounds the labs and include a certain diversity of stakeholders that are able to change and empower the innovation that we are proposing. Thus, by approaching the **Quadruple Helix** framework in Shemakes community engagement, we aim to involve key actors and stakeholders from the 4 fields, emphasizing their role and importance:

Public sector

We should involve representatives of local administrations or the Minister of Labor, in order to inform and involve them, a significant and lasting change cannot take place without taking into account its debate at the level of law or policy formulation, providing regulations and support. Also we have to take into account their input on advisory services, innovation support and financing.

Academia

Academia first of all provides practical knowledge, education and training, having a major role in bringing out a positive change and advancing towards mitigating gender inequality, not only in the T&C sector, but in various other fields. The stakeholders targeted here are professors from universities related to the T&C sector, technical, arts and design faculties.

Business

T&C business is the sector in which through Shemakes we can implement and test the steps towards changing gender stereotypes. It may be an opportune time to start defining potential future benefits for the private sector, developing women-led business networks, in addition to improving working conditions and producing a shift in their perception in a field formerly governed by men - entrepreneurship.

Civil Society

Represented by the actors of the local and regional NGO's and associations that are organized in a legal and permanent manner, activating in fields such as women rights, feminists, gender and pay gap etc. Also any person interested / aligned with shemakes values and eager to get involved should be taken into account . In the long term, Shemakes community should become a collaborative platform for developing processes to reduce the gender gap and increase women's skills in the T&C sector.

3.4.4. Guidelines and Tools

The Shemakes engagement activities should ensure that they are not limited to organisers (ourselves, the labs) but also includes beneficiaries. No matter the format of activity we choose to implement, there is always the potential for partnering with another entity. Be it a catering services provider for food and beverages for the participants, a sponsor providing part of the logistics needed, a local administration entity providing the space for the activity and its staff etc.

The community engagement activities should be open to every person, regardless of gender, age, education, race, origin, and not limited to the *Learning paths* participants and trainers, as they are just a part of the shemakes community. However, given the central problem addressed by Shemakes, priority will be given to women. The solution proposed to ensure gender inclusiveness and reach our targets is to allocate a specific number of places in our activities for men as well. For instance, if REDU has to organise at least a community workshop for at least 20 stakeholders/ representatives, it will announce in the call that the minimum 14 places shall be allocated for women and the other 6 for men and non binary gender people.

Given the restrictions caused by covid-19, currently local communities can be engaged in two ways:

- in the classic form of hands-on workshop, where the activity takes place in a atelier / lab / public space or even in a natural setting if the format of the event allows it, the emphasis being on spaces that have the necessary resources for the activity we set out to undertake
- online in the form of a workshop / seminar where the participants receive beforehand the tools and materials via mail or can collect them personally necessary for its development.

Flexibility and accepted compromises At the moment we are in the development phase of this guide, so drawing some points of flexibility and accepted compromises would be hasty. As these DOs and DONTs become clearer in the next stage, we will certainly explore these permissive limits as well. The issue of gender equality is a problem so prevalent in our education and behavior, that even the starting point for action can show errors on the way we approach it. The solution for now is in small steps - check - draw conclusions - change what does not work - improve and test again.

3.5. SheMakes Phase 1 proposed activities

Context

Redu Activities (or as Romania case study)

The World Economic Forum has published its annual research on gender equality in the world, where Romania recorded the GREATEST DECLINE GLOBALLY in terms of gender equality in the last year). We are 88th in the world and 21st in the region (Central Asia and Eastern Europe), behind Bulgaria, Belarus, Moldova and Kazakhstan.
Romania is ranked 141st out of 156 on the number of women in government positions and ranked 129th on women's political power.[12]

Redu's goal, rooted in the community of Iasi, Romania, is to have a T&C and STEM sector where women rights are respected and have equal chances for employability in executive position/management.

In order to pursue this goal, Redu wants to engage relevant stakeholders that could address this issue and afterwards implement or disseminate the results and solutions. Allies are required to develop a long-term relationship and a common front in generating positive change for women. Following the Quadruple helix innovation framework 4 types of stakeholders are identified:

- Public administration - County Employment agency, Ministry of Labour, Romanian Policy Makers from the European Parliament
- Academia - Professors from the Technical University of Iasi and Arts University of Iasi
- Business - Social Entrepreneurs, Small Businesses (ADV Foundations[13], Levisez Atelier[14])
- Civil society through Feminist NGO's, FES[15], CCC[16]

The next step after identifying the stakeholders is to understand what is their position in regard to the issue addressed. In order to do so, a research phase of **interviews and questionnaires** will be executed.

[12] Global Gender Gap Report 2021 - https://www.weforum.org

[13] *Close To You* Foundation - https://alaturidevoi.ro/en/

[14] Levisez Atelier - https://www.levisez.ro/

[15] Friedrich Ebert Stiftung Romania - https://romania.fes.de/

[16] Clean Clothes Campaign Romania - https://www.facebook.com/CCCinRomania

Based on their answers Redu will organise **talks or panels** accordingly, consisting of 15 participants from at least all the four stakeholders types. In order to grasp their attention and motivate them they will present their vision of the change and show them the opportunities through concrete examples of positive transformation processes.

For the second event Redu proposes a **design thinking workshop** that can help better engage the participants and have active results.
The most realistic result, considering this topic is marginally approached in Romania, let alone in Iasi, is the formed roundtable in a manner of a cluster/working group, that overtime can address certain issues of this matter and the dissemination that will follow through the participants.

Activities Interaction (Make Sense and Waag)

Makesense and Waag's activities will follow the same format and timeline as proposed by Redu adjusted to their own lab specific context.

Tasks	Date (Timing)
Co-designing alongside Waag and Makesense the Community Engagement Plan (research/defining/ developing), Identifying the stakeholders that could be involved from all 4 levels (academia, business, civil society, public administration)	19 April - 14 May
Agreeing to a common basic framework for the questionnaire which can be further adapted to each labs community	17 May- 1 June
Launching of questionnaire	1-7 June
Analysing responses + conclusions and developing, according to them, the content for the first talk/panel	2-23 June
Two events / talks	23 June - 5 August
Improvement + documentation on community engagement toolkit in d3.2	September 2021

Table 4 Timeline for community engagement activities phase 1

4. Guidelines and tools for exploring Lab to Lab projects

4.1. Main description (DoA)

As per the DoA, the task 3.3 Lab projects will:

> *Identify the subjects for **three lab to lab projects** to be carried out through networked collaboration between **IAAC, WAAG and REDU in phase one**, **extending to four of the 12 'transfer' Labs in phase two**. The topics will be informed by the discoveries of WP2 and the research agendas of the individual Labs, generally following the TCBL based model for Design, Make & Place approaches, with each project culminating in a networked multi-Lab event. Work will further develop the potential of the TCBL Lab model to promote a more female oriented approach, bringing together technical role models and experienced women experts in the field of innovation in the T&C industries.*

4.2. The role of lab-to-lab engagement in Shemakes

Creating better connections between labs and sharing a sense of global community has been a strength in the TCBL and Fabricademy network. These interactions allow labs to share ongoing research and practices, identify common gaps to explore and new opportunities for emergent development. It helps to share and reflect on local needs and to scale out core ideas, concepts and projects to other places and realities. The core base of lab to lab projects is to endeavour the crosspollination of knowledge in the lab's ecosystem, transferring core practical knowledge to then permit free local exploration for new practices.

The involvement of labs in such projects participate in enabling them by offering places for creativity, knowledge exchange and making. Those projects act as inspiration for building practices, engage researchers and practitioners, and create new contents for the existing courses and common grounds to build future collaborative projects.

In Shemakes, the typology of lab to lab projects will be better formalized. They will reinforce cooperations between the core partner labs and be a playground to better engage with the transfer labs. By identifying common research agenda between labs

at the international level, those projects will also foster collaborations with other stakeholders and projects that are engaged in the key research area that will be co-defined.

4.3. The BioShades project

The Bioshade project was created as collaboration amongst many labs in various facets of creative research. BioShade is a project in which we explore the potential of dyeing textiles with bacteria as a less environmentally harmful alternative. Through the practice-based research attitude and hands-on process, partners have explored how growing pigmented bacteria can produce organic designs on textiles or dyes to be applied to textiles.

It was based on the observation that the textile industry is one of the most polluting in the world, in which one of the most environmentally disastrous processes is the dyeing of fibres and textiles of the clothes we wear. Partners realised that very few options were being explored in this fast changing fashion, clothing and textile industry, in which the list of chemical treatments is only expanding and then decide to address the following questions:

Could Bacterial Pigments be a relevant alternative to the current textile dyes?
To explore this question, they run an original open process guided by the wish to learn, experiment, co-design and share key findings with the global community.

Figure 21 Screenshot from Bioshades website

4.3.1. Distributed events for knowledge transfer

After the initial phases of creative and scientific research, and the high demand for knowledge transfer sessions, workshops and events, it was decided to create a first test for a new framework of distributed knowledge transfer.

On March 15th 2018, TextileLab Amsterdam organised a series of events, streamed worldwide, to instruct and share knowledge on bacterial dyes: from working with bacterias, to harvesting their pigment, to connect and empower the communities of each participating laboratory.

16 laboratories across Europe were connected to dye textile with bacteria together! The BioShades event consisted of a presentation, a hands-on workshop and an evening programme with experts from the field. The event brought together artists, designers, scientists, chemists and researchers from different fields. This first distributed event, allowed each lab to connect online and learn how to dye textiles with bacteria. But also, demonstrated that sharing knowledge between laboratories with such events, can lead to better connection between and a fast growing network of knowledge exchange, beneficiary to the growth of the labs, their staff and their communities.

While preparing the workshop, documentations have been produced. Many resources such as tools for alignment agendas in combo with Design Make Place, for identifying complementary skills or documentation tests, documentation exchange through calls and Git-hub, template documentation kit for workshop, kit, bom, steps, online call for labs to join - including new labs, Briefing of labs - calls and documentation sharing, graphics package for event.

More information about the project: https://bioshades.bio/

4.3.2. Research model illustrated

The BioShades research model has been synthesized in a 9 stage process, across two cycles, on 2 interconnected levels, as per the figure below:

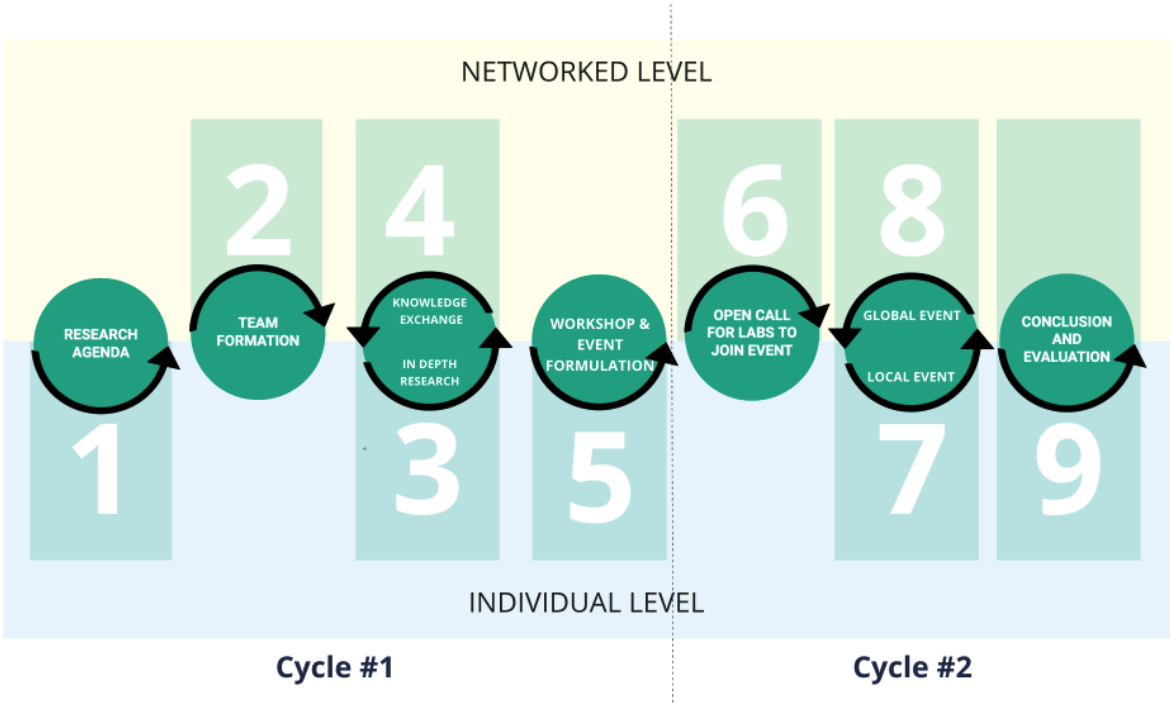

Figure 22 Bioshades model

Another strength of the model is that the research approach oscillates between more local/individual exploration of each lab and collective moments for co-designing and sharing knowledge. This is described in the figure with the levels of interconnectivity - alone & together.

The project followed two main phases, or as we prefer to describe, two cycles. The idea of cycles brings the important characteristic of being a process with beginning and end that feeds itself on multiple iterations

- **Cycle #1 Definition and research:** From steps 1-5, labs are guided with the intent to define and research about the topic, they produce hands-on experimentation and develop on the distributed learning format.
- **Cycle #2 Transfer and expansion:** From steps 6-9, the activities are oriented to share the first base of knowledge created, both at the practical and theoretical level, and to use it as a common ground for future explorations, multiplied by the various participants in the labs.

A brief description of each step

- **Step 1 - Research Agenda:** formulation of lab research questions to be researched, spanning from the Labs research agenda and network
- **Step 2 - Team Formation**: Bringing together the based on the research question formulation, at this moment also is assessed if experts/partners on the topic should also be invited to collaborate and share their knowledge

- **Step 3- In depth research:** Lab local in depth experimentation and research, often hands-on. During this step a series of tools, materials and processes starts to emerge, and it is important to keep record of the best practices to feed the network.
- **Step 4 - Knowledge exchange:** Constant sharing of the research's evolution, its discoveries, struggles and identifying new opportunities
- **Step 5 - Workshop and Event formulation:** On the last step of this first cycle, labs reach an agreement on the key findings of the research phase, understand and prepare the discoveries and knowledge for transfer to other labs in the format of a hands-on workshop and detailed documentation
- **Step 6 - Open Call for Labs to join the event:** Organization of the distributed event inviting other labs to benefit from our collective research
- **Step 7 - Local event:** Each lab engages on its own organisation and execution of the event locally in the lab/area
- **Step 8 - Global event:** Organization and execution of the networked event aiming to transfer the knowledge gained during research and train the future instructors on how to become a spreader themselves.
- **Step 9 - Collective conclusion and reflections:** Gather feedback, incorporate new findings from new members that were incorporated in the network

4.4. Other background from the shemakes ecosystem

4.4.1. TCBL networked activities

The TCBL Lab model provided the Labs with a vast range of opportunities to formulate activity formats. The activities emerging from a collaborative framework, were defined as networked projects, where the focus lays on creating connections between laboratories, their communities and the network of businesses connected to them.
Lab Projects are those activities with a collaborative essence, where the central focus points are:

- Access to knowledge creation and exploration for knowledge transfer and sharing;
- Enabling the creation of a stronger bond between the Lab's population, network and the businesses.
- Create a shared common language, referred to as mutual literacy
- Create a replicable model

By engaging and developing networked projects, the labs feed into the impact of the network, acting like a cohesive bonding element. The main impact outcomes of the projects in TCBL, was about creating and exploring ways of strengthening each laboratory, by learning from the diversity of typology and the diverse knowledge fostered (or intrinsic) to these labs. Participatory, open and inclusive activities reflect the Lab's values and principles and turn these into actions to which we all can contribute or benefit from.

4.4.2. Fab Lab Barcelona's Experience

Fab Lab Barcelona is leading the task 3.3 working in collaboration with WAAG and Redu to set up the lab to lab projects. When looking at lab to lab projects in a broader sense, Fab Lab Barcelona can testify of experiences engaging labs in various research and educational distributed projects, with various timeframes and formats.

- **Distributed educational programs:** Fab Lab Barcelona is actively engaged in the design and development of the global academies from the Fab Lab networks (Fabacademy, Fabricademy) allowing students from different labs to adopt maker skills. When looking at the emergence of Fabricademy classes, we can see that each week comes with a phase of discovery, practices and free experimentations that is openly shared and could feed back into the knowledge created in the community. The expertise for each topic is being improved by practice and network extension. Also, creative research thinking is teached to students that put it in practice through their individual project and other shared moments of practices that happen in the labs.
- **Piloting international citizen science:** *co-creation and distributed design programs*. Fab Lab Barcelona is experimenting with other labs through many european projects such as Siscode, Centrinno, Making Sense. They generally start by identifying a common area of research, gather a consortium, create a methodology and experiment in parallel, with collective learning and feedback sessions. In the example of Siscode, labs were even tackling different challenges while using the same process and methodologies of co-creation, allowing them to explore and learn in parallel from each other: the process was based on 4 iterative phases of co-creation starting to engage with a community and iteratively analyzing the context, reframing problems, envisioning solutions and prototyping.
- **Bootcamps and short-term events:** Fab Lab Barcelona used to take an active role in organizing short-term events (from one day to one week) to foster collaborations between labs. The Fabricademy bootcamp, the Distributed Design Academy but mainly the Fab Lab and Fab City conferences are excellent

examples of formats enabling to foster new dialogues and foster collaborations between and beyond labs.

Fab Lab Barcelona also participated in the The Bioshades TCBL event which was organized in a distributed way, running in many Labs all over the world at the same time. It was a hybrid peer-to-peer event, in which participating Labs did research all together. In Barcelona, 22 participants gathered in Mazda Space and performed a global experiment following a live demonstration led by the TextileLab Amsterdam. Participating TCBL labs were set up with an inventory that included petri plates, inoculation loops, prepared nutrient broth, sufficient sterilization and safety equipment, and a sample of natural textile like silk. The bacteria used was called Janthinobacterium lividum (violacein) and the medium of growth was agar and LB broth. Textile dyeing with bacteria is now incorporated as part of the Fabricademy classes content.

4.4.3. Other core lab's Experience

The core labs were also asked to give their examples of enabling projects that involved a lab-to-lab format.

REDU

The third project implemented by Redu was informal talks under the name **Waste & Resources** (1,5 hour sessions) on the circularity of fashion. Around 10 to 15 participants of mainly women engaged, ranging from key players in the local textile sector, to clothing designers (also from other labs), students, academia and consumers interested in environmental protection and local policy makers. This led to constructive debates on the possibilities of transitioning to a sustainable and circular design in the garment and textile sector on a local level.

Fab Lab Leon

CREFAB is the national (Spanish) association of FabLabs that exemplifies lab-to-lab collaboration on a national level. In this project, León and other representatives of labs go to other cities to support local development in events held by CREFAB members. In the workshops, knowledge, research and know-how are exchanged. It functions as a way to provide new labs with the necessary information and tools to start for themselves.

Onl' Fait

With two other Swiss labs, Onl' Fait developed the project Voodoo Dolls for children.

They were workshops where kids could learn more about electronics, creativity, tools, and machines such as soldering machines and laser cutters.

Makesense

Two programs can be used as examples of collaboration between other labs, Sprint and Spot. Their main characteristics will be described in detail in chapter 5.

4.5. Guidelines for lab-to-lab projects

As illustrated in sub-chapters 4.2, 4.3, 4.4, lab-to-lab projects can learn from existing practices that are quite rich between the shemakes.eu partners.

Different groups of stakeholders can be identified for lab to lab projects:

- The core three labs in charge of the task
- The ecosystem of Shemakes that can participate in the overall research agenda
- The group of stakeholders for each project selected. Here, each project will be led by one of the core lab members, assisted by other labs and mobilizing internal and external stakeholders (mainly academics and civil society but open to all type of the quadruple helix)
- The transfer labs that will integrate the 3 projects and participate in the distributed event(s).

As defined in Table 4.1, guidelines could help labs to select and define the:

1- Topics of the lab-to-lab project

2- Research methodology, tools and methods.

3- Strategies and resources for documentation

	Topics	Methodologies	Documentation
Criteria	- Based on people's need and intuitions - In the spectrum of Fabricademy's packages - Relevant for key SDG goals and TCBL sectors - Capacity to be replicated - Aligned with shemakes values - Easy to realize in a short term perspective	- Aligned with shemakes.eu timing -Supporting reflectivity on practices -Give structure for experimentations -Value STEAM and transdisciplinarity - Support cooperation - Pro-active for responsible (and (un)gendered) research	- Aligned with the basics of ergonomics - Accessible publicly, open source - Clearly define the process of replication - Adapted to various targets and research divulgations
Main Examples and ref	Interactive Mind Mapping, Co-creation tools, clustering Social research analytics https://www.vosviewer.com/ - FabX topics and sessions: https://fab16.org/	Craft/Practiced-based research Design research techniques http://designresearchtechniques.com/#/ Responsible Research https://rri-tools.eu/	-Booklet format like BOOKLET BioShades instructors+Bioshades participants) -Research documentation formats (BOM, KIT, step by step tutorial of BioShades) - Other TCBL projects (brief descriptions from booklet) - Fabricademy bootcamp ressources
Tips	-Freedom to people to explore on their own research agenda -Dive into the existing projects to identify the gaps and tendencies -Create collective moments to explore together and select the topics -Be transparent on the why and how -Participate in makers and research events to better define the state-of-art and test topics	- Spend time to practice, reflect and share - Dare diversifying your methods - Connect with relevant people and dialogue about your research - Do not forget the importance of art, introspection and dialogues to open your research - Go experimentals and start measuring your investigation - Think about ethics, gender and open source dimension	-Be sure to create the effect of "discovery" and learning for participants -Think about the experience and its conviviality - Find the right proportions of "global" vs "local" activities -Create various supports according to the event and type of stakeholders - Beyond the event, think about a collaborative publication that could better frame and disseminate the outputs.

Table 5 guidelines lab-to-lab activities

4.6. Phase 1 - Activities

Three lab to lab projects are expected during the shemakes.eu project. The first phase until september will mainly focus on structuring the research agenda of the partners, envisioning and starting investigating the 3 topics selected and start documenting and planning distributed events that will be done in phase 2 with the transfer labs.

4.6.1. Description

Inspired by the Bioshades model (figure 4.2), here is a first draft of the plan of activities that will be done in the first phase (Step 1 to Step 4):

Step 1 - Research agenda (MAY 21): Set up a collective research agenda with 3 topics

In this phase, the three labs will first investigate their internal motivations for research topics, and create a collaborative map that could be completed by other members of the projects. The topic will be at the crossroad between the core topics of the Fabricademy programs and emerging researches (Sustainability, Wearable technology, Industry 4.0, Textile Narratives)

So far the topics brought up by the labs are:

- Biocomposites, natural and Bacterial dyeing in line with the Bioshades project.
- Exploring natural dyes on a human & nature symbiotic approach.
- Recycling and Upcycling
- Assistive technologies and healthcare
- Dismantling Gender in and through Design

Step 2 - Team formation (MAY 21): The three labs will vote on identified topics and will have the opportunity to select the one they would like to lead. Each of the three labs will lead one lab-to-lab project supported by at least one of the other lab and voluntary partners. At this moment is also assessed the need of additional technical research partners.

Step 3- In-depth research (JUNE-SEPT 21): Start exploring and experimenting with the selected topics.

According to the expertise of each lab, basic knowledge will need to be discovered and gathered in collective research format. Here, labs could explore their own approach according to their local context and build upon the need as suggested in the WAAG co-creation tool. From desk to field research, personal explorations, prototyping, labs will be free to adopt the methodology they prefer to dive into the topic and build their own knowledge. Dialogues between labs will be regular (min one by month) so exchanges of knowledge is guaranteed.

Step 4 - **Knowledge exchange (JUNE-SEPT 21):** Organize a series of research meetings and making activities within projects and ecosystem members (optional).

Meanwhile, labs could identify and engage with key projects, stakeholders and experts to complement their investigations. For instance, collaboration with Reflow and Centrinno members could happen for upcycling practices, while some dialogues with Herewear could feed the investigation on biomaterials. They can also use existing conferences (like FabX to run workshops and reflective sessions)

The following steps are planned to happen on Phase 2, being:

Step 5 - Workshop and Event Formulation: and creation of the documentation for distributed events

An important aspect of phase 1 will be the documentation of the research with the aim to transfer it during distributed events. Here, lab-to-lab projects will co-produce files that will feed the toolkit and report in D3.4.

Step 6-8 - **Planning and run the distributed events** in collaboration with transfer labs or additional labs from the network:

Labs will organize the distributed event(s). The timing will be defined at a later stage. Partners would like to find dates and times that are aligned with existing events and agendas so as to multiply the impact while not overloading the lab members. The core idea is to make distributed boot camps for the transfer labs so to engage them in concrete activities. We can imagine three workshops or one big bootcamp combining the three workshops during the week. Ideally, we could organize one distributed bootcamp at the end of the phase exploring the three topics selected, illustrated by the results of previous investigations. Whatever the format selected, partners will have to organize the local and global events synchronously and anticipate the needs in terms of materials, tools, settings, communications.

Step 9 - Conclusion and Evaluation: Gather feedback and enrich the collaborative research agenda. The last step consists in running the event and guaranteeing to gather feedback from participants and look at strategies to keep on exploring the various topics set up initially in the research agenda, introducing new topics.

Tasks	Date (Timing)
Build a shared map for interactive research agenda and selection of 3 projects	May 2021
Tram formation prior to research	May 2021
In-depth research and knowledge exchange	June - September 2021
Reporting D3.2 and transfer labs next steps	September 2021

Table 6 Timeline of for lab-to-lab engagement activities

5. Guidelines and tools for exploring Business Engagement

5.1. The role of Business Engagement in SheMakes (DoA)

As per the DoA, the task 3.4 Business projects will:

> *This task focuses primarily on women innovators coming from the Fabricademy and the TCBL networks. While building on the hypotheses designed in Task 2.4 regarding more efficient routes to jobs for women with alternative education, this task focuses more* ***directly on testing the business concepts of future women entrepreneurs****.*
>
> *Led by MAKE and WAAG and drawing on the work of all Labs, in particular four of the 12 'transfer' Labs, the task will* ***engage women with an entrepreneur potential with the opportunity to discover and use business tools****. They will then be given the opportunity to match with TCBL businesses or start-ups with a specific innovation need e.g. developing a new offer, process, etc. A Lab mentor will support the smooth and fruitful development of each collaboration, validating the new business concepts identified.* ***The task aims to identify at least three start-up opportunities and three new business lines for existing companies between the two phases of activity.***

Therefore, this task 3.4 "Business engagement" can be seen as the lab's new entry points to the business world, that we'll explore here through different dimensions:

- Accompanying female innovators through each lab to make new entry points for business opportunities.
- Bringing support to the Shemakes entrepreneurs-to-be through different programs and activities *(that we will call below "Business tools")* aiming at:
    - help these new business ideas to be born or to be developed *(sometimes referred to as business opportunities)*,
    - connect these women to existing businesses in order to insert them into the fashion and innovation ecosystem and to allow them to find their place and to be recognized at their true value *(sometimes referred to as collaborations)*.

Indeed, today women innovators in the T&C sector encounter various difficulties in creating their own businesses:
→ difficulties related to the cultural environment: lack of self-confidence is a real problem that can prevent an innovative woman entrepreneur from creating her business (self-deprecation, self-sabotage), the entourage may also tend to denigrate the entrepreneurial project, or the entrepreneur may encounter difficulties in reconciling her professional life with her personal life
→ technical difficulties: prototyping and a fortiori the transition to industrialization is a very recurrent problem among designers of wearables and biomanufacturing projects, as well as the management of the legal environment within which many grey areas remain and which can be very complex, and the management of interdisciplinary projects whose development involves the participation of developers, engineers, designers and in some cases biologists.
→ economic difficulties: both the financial balance of the project holder, and the difficulties she may encounter in convincing to find funds on certain typologies of industrial projects (everything related to hardware)

The Shemakes system should help to remove these obstacles.

This chapter is therefore directly in line with Shemakes' global vision, which is, as a reminder, to fight the gender employment gap through an increased presence of women in better paid sectors such as T&C, making them the innovators of tomorrow. This chapter will especially focus on empowering women to create their own business and bring their innovations to already-settled businesses to help bridging the gender gap.

The programs and business tools discussed below will all aim at allowing women innovators to be surrounded by other entrepreneurs, and to feel supported in their innovation process. We want these women to benefit from skills and resources to move forward in more efficient ways, but also to connect to other actors and companies from their ecosystem.

To quote some of the women entrepreneurs accompanied by makesense…

- “I am delighted to have participated in this Creathon, I feel really boosted, with a lot of relevant advice and opinions in mind." - *Camille, an entrepreneur who participated in a Créathon on ethical fashion*
- "This collaborative day gave us many ideas to answer our problems! It was a perfect mix of citizens/experts/entrepreneurs. The dynamic of the day really

allowed us to think "out of the box"!" - *Anne-Claire, an entrepreneur who participated in a Créathon on ethical fashion*

We will first discuss below the background of the TCBL network and makesense, developing our vision of an entrepreneur's journey and exploring inspiring formats, *such as bootcamps*, that can be used to ensure these women's successful development.

We will then explore to what extent and how these resources and tools can be adapted to the Shemakes project and establish an action plan for these activities.

5.2. TCBL and Makesense background

Here's how the TCBL and makesense see business engagement and how it could play a part in achieving Shemakes' goals.

5.2.1. TCBL

Given the central role of WP3 in TCBL, it is useful to return briefly to the context in which the Business Lab activities take place, namely their role in the project-level objectives. The following text, adapted from the "About" page of the TCBL website, sums this up:

> New and significant opportunities are emerging based on new production and distribution technologies, innovative organisational models, and new creative energies. In parallel, customers are showing increasing attention to ethical and environmental sustainability in the clothes they wear. The gap, however, between possible new business models and the reality of small and micro-enterprises is too wide and the risk they face in experimenting new models is currently too high.
>
> TCBL aims to bridge this gap with the creation of a network of Business Labs that freely experiment the implications of potential innovations and their concrete impacts on business operations.
>
> These laboratories interact with a substantial number of sector enterprises of various dimensions – "pilot businesses" – who compose innovation elements coming from different Business Labs to identify transition scenarios that can accompany their shift from current ways of working towards more innovative and competitive business models.

This statement clarifies the role that the Business Labs play with respect to the broader TCBL innovation model. On the one hand, they are expected to 'freely experiment' different methods and technologies appearing on the horizon, without the pressure to directly transform inventions into commercial products. Unlike an accelerator or incubator, the Business Labs are thus not expected to create business themselves. On the other hand, they are expected to generate business ideas that are relevant to the

TCBL pilots, which means they need to be able to establish a dialogue with them; it is then the job of the T&C enterprises to carry out their own shift towards new business models. Defining exactly how the Business Labs will be able to carry out this role of exploring innovation potentials and passing the baton to operational businesses, is one of the main tasks of WP3.

More info to be found right here: https://tcbl.eu/business-services.

5.2.2. Makesense

At makesense, we feel that there are more and more people who think that the world isn't right, and who would like to get involved, to do something, but who don't know how to do it.
Our mission is to give everyone in our society the power to act to solve the social and environmental issues of our time. Our vision is that everyone has a role to play, according to their desires and skills. Over the years, we have seen a growing interest for sustainable fashion among our community, more and more projects in this field are joining our incubator and citizens all over the world are getting organized in our FairWear Tribe.

Concretely, we work with three types of people: people who want to act as citizens, entrepreneurs and companies.

- **Civic engagement**: helping anyone and everyone, in the country or in the city, young or old, to find ways to engage that correspond to their desires, their skills and their availability.
  Concretely, we produce awareness-raising content, we train people to take action and we bring local communities of citizens to life.
- **Support for entrepreneurs and innovators**: we intervene at all stages of a project's life, from the idea to scaling up, with support, training, experts, access to financing.
  Concretely, we support 1,500 entrepreneurs each year, in our incubator in Paris, and invest in about ten projects through our investment fund.
- **The transformation of large organizations**: we believe that large organizations, and first and foremost large companies, are an integral part of the solution. Their enormous capacity for action is a formidable lever for impact. An example : if a food group changes the specifications of its plastic packaging, dozens of tons will be recovered *(perhaps thanks to a solution brought by a social entrepreneur)*. We accompany them in this transformation to put the planet and people at the heart of their activities.
  Concretely, we help companies develop new activities that are more respectful

of the environment, give their employees more meaning in their daily lives, or work more closely with associations and impactful startups in their territories.

Of course, it is the second and a bit of the third point that will mainly interest us here.

A. <u>The entrepreneurial journey according to makesense</u>

As mentioned above, our incubator supports the entire life cycle of the impact start-ups and entrepreneurs. In everything we do, and in line with Shemakes' objectives three core values, show through:

- **Impact as a priority:** Our modes of action promote experimentation, agility, on-the-job learning and the search for common good and sustainability
- **Human-centered:** We pass on our methods to make everyone autonomous actors of change.
- **Strength of the collective:** Change is gradual, collective and embodied. We work on the strength of the collective to awaken the best in everyone and move forward together.

We like to divide the different stages that we talk about as follows:

- **Understand that something is wrong and develop a willingness to act:** The very first steps of the entrepreneurs coached by makesense are taken during awareness workshops where the spark is created to launch an entrepreneurial adventure.
- **Lay the first bricks of a project that responds to a well-defined problem:** Then, through what we call Créathons, Sprints and other programmes that will be described here under, we support the emergence of ideas and validate them and the teams behind them.
- **Test, learn, and then test again:** Through a twelve-month incubation program focused on experimentation and prototyping, we validate the value proposition, we consolidate the business model, and we structure the team to help speed up the launch of the different impact projects.
- **Industrialize the project and its impact:** The final brick of our accompaniment is led by our investment funds and takes the project to another level that opens up the opportunity to change society with funds and ways to deploy the project.

Makesense strives to provide the most comprehensive innovation pathway possible for the entrepreneurs it supports. These tools and programs have proven their strength in supporting women innovators as they all rely on the power of community, allowing them to thrive and to connect in the midst of a variety of actors surrounding their project.

Let's dive in **concrete examples of tools and programs** supporting entrepreneurs that could actually be suitable for Shemakes:

Creathon - innovation bootcamp

A one-day innovation bootcamp which aims at bringing out innovative projects. Through collective and accessible methodologies, participants can create a project out of an idea or accelerate the development of an existing project.

The Créathons can be thematic, and thus linked to the topics Shemakes is carrying. For example, we could imagine a one-day Créathon on the subject of fashion products end of life management.

Sprints - collective program

A Sprint is a 6-weeks program to bring a project idea to life. It takes the shape of a 100% online group coaching program to test both the idea and the entrepreneurial stance: clarify your problematic, your social mission, explore your ecosystem, identify your potential targets, and test your solution with them.

Every week, the participants receive theoretical and practical content, attend collective remote monitoring and can practice peer-to-peer with other members of the promotion.

We could imagine a Sprint adapted for Shemakes : for example, a Sprint only accessible to women with an innovative idea related to the world of textile and fashion. This Sprint could offer makesense-type training and training more focused on the fashion aspect (with speakers and mentors specialized in the subject).

Other tools that work as add-ons

Startup calls: creating and leading call for projects to support innovation, then selecting promotions that are to receive grants or tailor-made coaching.

We could imagine a pan-European startup call, relayed by all the labs aiming to bring out the next generation of female entrepreneurs with ideas related to fashion and textiles; then select the most promising ones and give them the benefit of a coaching on the first steps of entrepreneurships with a Sprint, mentoring sessions or challenge solving workshops.

Spot: Spot is a digital platform to support entrepreneurs and connect them to the right resources and people necessary for the successful development of their project:

- connect entrepreneurs to communities *(of mentors, volunteers, other entrepreneurs)*,
- give access to, training contents and centralized calls for projects,
- create thematic peer-to-peer communities connecting entrepreneurs working on the same issues.

We could adapt this concept to shemakes by gathering numerous thematic trainings, resources, mentors, and of course, project holders.

B. <u>The collaboration journey according to makesense</u>

Another challenge is to connect these entrepreneurs to existing businesses while continuing the structuring effort to create business opportunities.
Indeed, in order to bring out change, we're convinced that aspiring-innovators and already-settled businesses have a lot to share and that it's important to identify and create touch points between them all along their entrepreneurial path.

Let's focus here on different tools we have to do so:

Mentoring sessions

A mentoring workshop consists in pairing expert mentors in project coaching and/or a specific theme with project leaders who are facing a challenge that is hindering the development of their project. Once the needs of the entrepreneurs have been identified, the challenge is to target relevant mentors and to mobilize them for a meeting time *(2 hours for example)*, to allow qualitative exchanges and accelerate the emerging project.

We could gather mentors from T&C companies around young women innovators in order to address the different challenges that they could have and to create links between them.

Challenge solving workshop

A challenge solving workshop is rythmed and led by a facilitator with specific questions and generally two sequences *(a time of creative divergence and a time of convergence)* around a precise challenge of the entrepreneur. The goal is to exchange ideas, offer solutions and sometimes change perspectives on a problem.

For our matter, we could imagine that the lab mentors could take the role of facilitators, the women could take the role of challenge holders (meaning that the

workshop would aim at helping them solve a challenge they are facing today) and the participants could be collaborators from different T&C companies with the skills to help the project grow and to create collaborations with their own job.

5.3. Business definition on Shemakes and the lab ecosystem

We'll explore here every **labs' background** and the **community of players surrounding them** to understand the **business ecosystem** around Shemakes better.

5.3.1. Labs' background in business engagement

1. IAAC | Fab Lab Barcelona

Fab Lab Barcelona has recently integrated a business unit in this structure and is testing new forms of collaborations with companies and institutions, developing products such as the Smart Citizen Kit and offering services related to their 9 strategic areas.

They participated in the WORTH Partnership Project, funded by the European Commission under COSME, the EU Programme for the competitiveness of Small and Medium-sized Enterprises. WORTH is a European project where designers, SMEs, manufacturers, and tech providers work together to develop innovative, design-oriented business ideas. The project focuses on lifestyle industries, including textile and clothing, footwear, leather and fur, furniture, home decoration, jewellery and accessories. FabTextiles & Materials collaborated with 3 brands/start ups to co-develop solutions for innovation in their offers. The project provides companies with an incubation programme to develop new businesses, including a) 10.000 € in financial support; b) coaching on business strategy and technology development; c) legal advice on intellectual property rights and protection; d) participation in exhibitions; e) networking and professional links.

2. REDU

Waste & Resources were events where key players in the local textile sector joined the informal talks that are mentioned above. This allowed them to gather different perspectives on a common issue and adept a critical way of thinking, within the shared space that was created by Redu.

3. Leon

LEON4U were talks, fairs and seminars that connected young talents with companies in León to learn about present and future employment options in the region. They were commercial activities that linked creatives to the industry.

4. Onl'fait

Onl' Fait took up the role of consultants to help designers to optimise their prototypes. Think for example of accessories with laser cut silk, leather accessories and T-shirt decorations. They were mentoring and coaching sessions, where participants received open source knowledge on how to improve their prototypes and designs. If that implied that new tools or working with new machines where necessary, then that was included in the sessions as well.

5.3.2. Labs' ecosystem

In order to understand even better the roleplayers that are to create business engagement through Shemakes' actions, makesense conducted a survey across the different labs participating in the WP3. This allows us to understand even further their business ecosystem and their experience in supporting innovative projects.

The survey:

1. A. *Have you ever coached young innovators or startups? (Yes / No)*

    1. B. If your answer was Yes: *Approximately how many and what type of project was it (field of activity, type of project conducted) ? Name 3 examples and describe below one of your main projects conducted.*

2.A. *Have you ever been in collaboration with entrepreneurship actors? (Yes / No)*

    2.B. If your answer was Yes*, Name your top 3 partners, and describe below one of your main collaborations conducted.*

3.A. *Do you identify around you (local ecosystem) mobilizable entrepreneurship actors? (Yes / No)*

    3.B. If your answer was Yes: *Could they be interested in the Shemakes project and likely to become partners? (Yes / No)*

    3.C. If your answer was No: *Why not, according to you ?*

    3.D. If your answer was Yes: *Give three examples of these entrepreneurship actors.*

Figure 23 Survey lab's business ecosystem

All the labs are very much aware of their business ecosystem and they know local actors with whom they could work on this business engagement axis. But more questions are to answered if we serenely want to achieve our business engagement mission:

- *What type of actors are they linked to?*
- *How many innovators are they able to support? On what tempo?*
- *Do they need to spend more time on mapping the ecosystem to create ways for female innovators to benefit from new entry points for business opportunities? etc.*

Here are first tracks computed together thanks to the labs' answers to our survey.

1. **IAAC | Fab Lab Barcelona**

Fab Lab Barcelona is closely linked to its entrepreneurial ecosystem and has already coached a dozen of young innovators and start ups in the T&C sectors. These projects mixed fashion and tech and took the form of mentoring for start-ups, support for development and personal coaching for young fashion designers and alumni of the Fabricademy.

Fab Lab Barcelona has already proven its ability to collaborate with entrepreneurship actors such as local incubators to better support startups.

As of today, IAAC's potential partners for Shemakes are:

- Eurecat,
- MaterFad Materials Library,
- Consorci de Comerç, Artesania i Moda de Catalunya.

2. **Redu**

REDU is in close connection with different key actors from the region such as big factories like *CIM (Confectii Integrate Moldova)*, Katty Fashion, shared working spaces and digital fabrication laboratory like *FabLab Iasi*, a worldwide renowned CAD company Gemini CAD based in Iasi and small entrepreneurs like *Atelier Levisez*.
Supporting innovators would be a new thing for REDU, as they haven't done that in the past, therefore spending more time on mapping the ecosystem would be needed.

3. **Fablab Leon**

Fablab Leon has also already coached young innovators or startups : approximately on 5 occasions. The projects focused on technical innovation such as innovation in wearables and biomaterials.

Fablab Leon has also collaborated with entrepreneurship actors and identified a few that are likely to become partners for Shemakes, such as:

- ILDEFE (Leon City Council Employability Agency)
- FELE / CEL (business associations)
- ADE (Economic Development Agency)

4. TextileLab Waag

When it comes to engaging with innovators and entrepreneurs, Waag supported many women in the past, by facilitating access to funding, mentoring projects and also providing residency. The profile of the projects supported were mainly from the creative world *(artists, designer, researchers from their community)* and alumni from programs like Fabricademy to give them visibility and networking.

It is less often to have the lab engaged with entrepreneurs that are setting up start-up concepts or developing business models, however it's common that the creative innovators find themselves in situations where they need support in a more operational level, for example to be able to forecast a project budget, building their own website or communication channels, understanding resources and time allocation, if they need to have a space like a studio or even hire people to work together with them. And even if those businesses are not the traditional idea of a start-up the challenges can be related and TextileLab is able to provide them best practices and coach to support them in the process.

5. Onl'fait

Onl'fait has also already accompanied entrepreneurs in early-stages of development, through formats like hackathons or consulting for prototypes.

Onl'fait already worked with entrepreneurship actors such as the Chamber of Commerce for Social and Sustainable Economics. These local partners could be interested in the Shemakes project, at least on the textile and new technologies aspects *(the gender issues aspect is still to be confirmed)*. In particular, Onl'fait has identified:

- Au fil du Geste *(association of dressmakers that supports new designers)*
- Apesigned *(little designer company)*
- Fondetec *(association of business in Geneva)*

6. Matrix

Matrix has also coached young innovators and startups through business model workshops for entrepreneurs and barcamps for young amateur innovators still at the ideation stage.

Matrix has already proven its ability to collaborate with entrepreneurship actors such as local incubators to better support startups. The ones that are likely to become Shemakes partners are:

- Female innovation Hub
- Change Room / Fashion Revolution
- Enterprise Europe Network

5.4. Criteria, tools and guidelines for business engagement

A. Selection of programs

These criteria are as follows. The business tool chosen has to be:

- Accessible and understandable for young female innovators;
- Implementable by other labs, in autonomy, with simple guidelines *(and thus accessible to structures other than incubators, possibly unfamiliar with such methodologies);*
- Deployable on an international scale;
- Adapted to the global budget of Shemakes.

Having in mind that each lab's network and experience in supporting innovators, and following the above mentioned criteria, we were able to eliminate in priority the following formats:

Sprints (collective coaching for entrepreneurs)

The skills required for this type of collective support seemed difficult to transfer and we doubt that it would easily be set up by all labs.

Start up calls, and the following entrepreneurial support of the winners

Same as above as this format ended up with a sprint or a short incubation period.

Spot (digital platform to support entrepreneurs)

The budget required to develop a support platform adapted to all the languages and fields of activity of the consortium' is unachievable with our resources.

Based on this, here are **3 pre-selected activities adapted to the SheMakes business engagement chapter** (only one of them will eventually be operated during shemakes.eu phase 1 by makesense):

Option 1 : Mentoring sessions

As described here above, mentoring sessions consist in pairing expert mentors with project leaders who are facing a challenge that is hindering the development of their project.

Steps to set mentoring sessions up:

1. Each lab connects with 3 entrepreneurs in their local ecosystem *(through already known partners, for example)*
2. Each lab connects the 3 entrepreneurs with mentors from their local area, based on the entrepreneurs' identified needs.

Then we could imagine 2 options:

A. Match one entrepreneur with one mentor and put them in touch. (less time consuming and requires less human resources)

B. Frame one to two challenge·s for each entrepreneur, find a pool of mentors that are experts on each topic framed, and organize a mentoring session where one entrepreneur can meet several experts to address more than one challenge.

C. Create an entrepreneurs support committee gathering mentors from each lab environment. Each 2 months (for instance), 3 entrepreneurs present the state of the art and their pain-point to the committee who gives recommendations to help the entrepreneur to move forward.

Typical schedule of a mentoring session:
8.30 : Welcome, introduction and energizer
8.45 : Presentation pitch for entrepreneurs and expert mentors
9.00 : Peer-to-peer n°1 (each entrepreneur meets a first mentor on topic A)
9.25 : Peer-to-peer n°2 (each entrepreneur meets a second mentor on topic B)
9.50 : Conclusion and sharing of action plans

Figure 24 Schedule mentoring session

We believe that this format can fulfill the mission of Business Engagement set by Shemakes as it would allow women innovators to:

- Benefit from advice from qualified experts,
- Connect to the T&C business ecosystem that surrounds them and to professionals who could in the future become collaborators.

Option 2: Challenge solving workshops

As described above, a challenge solving workshop is made to help an entrepreneur to solve a specific challenge with the help of T&C companies who have the ability and the skills to help the project grow.

Steps:

1. Each lab connects with 3 entrepreneurs in their local ecosystem *(through already known partners, for example)*
2. Entrepreneurs and labs meet to frame the challenges they are facing today that would be interesting to solve.
3. Each lab connects with local T&C companies to organize the challenge solving workshop.

Typical schedule of a 'Challenge solving' workshop:

Introduction: presentation and explanation of the challenge

Divergence: explanation of the rules and brainstorming with questions prepared by the facilitator

Convergence: Voting or clustering to come up with concrete solutions, working in sub-groups on different tracks

Sharing: pooling of solutions, exchanges and closure

Figure 25 Schedule challenge solving workshop

We believe that this format can fulfill the mission of Business Engagement set by Shemakes, because it would allow the innovators to benefit from resources and advice from experts in order to solve a specific challenge, and also to connect to the business ecosystem that surrounds them.

The *"challenge resolution workshop"* format allows it to go further than the mentoring workshop: more time is dedicated to the resolution of the challenge, and more collaborators are mobilized around the challenge of one entrepreneur. We could imagine a consortium of business (marketing and financialization), legal (intellectual and industrial property) and technical (biologist, engineer, developer) skills around the project leader.

Option 3: Bootcamp

An annual training event, co-piloted by all labs. This bootcamp would mix T&C business partners and Shemakes alumni. This format could also fit into or complement a "lab to lab" project.

The concept? The business partners set a challenge they're currently facing to project teams composed of Shemakes students or alumni. Several teams work on the same

challenge *(like in a contest)*, and try to offer innovative solutions to solve the company's challenge, following our Creathon method. Keeping the best of each team, the business partner would create a solution to be developed and exploited; all participants are then free to contribute to the development and implementation of the solution in question.

This format could really help to achieve the objectives of WP3 as it would both encourage young female entrepreneurs to create innovative projects, but also allow them to put their already acquired skills to work for large companies - which could both value them and also bring a fresh look and a "Shemakes touch" to companies already established in the fashion industry.

In addition to stimulating creativity and innovation, this format also brings together innovators and companies around a common project, creating links and laying the foundations for potential future hires or collaborations.

As of today, the second option of CHALLENGE SOLVING WORKSHOPS seems to be the best to achieve our ambitions considering our criteria and available resources.

We would add here that we have a reserve regarding our resources: there are still some points that need to be clarified for us in the future in order to carry out the project successfully. For example, we will first have to study the needs of companies in the T&C sector, to know the difficulties that are currently encountered by "Shemakers" type profiles to launch their company.

B. <u>How to transfer it to other labs in the future</u>

→ Prerequisite for the activities mentioned above:

- Know your ecosystem *(already acquired for the labs)*
- Diagnosis of the needs of the entrepreneurs
- Methodology behind the different activities
- Facilitation of different formats

→ Supporting labs with turnkey supports :

- Resources to conduct an entrepreneurial diagnosis: training and canvas
- Resources on how to frame an entrepreneur's challenge : training and canvas
- Methodological guide : clarification of the methodology in theory *(training)* and guide for each stakeholder throughout the workshop explaining the role of each.
- Training on how to facilitate efficiently an activity

- Turnkey training materials and slides to be used

We consider these proposals as a basis for a good development of the activity. These guidelines could of course be updated after a first iteration to make sure that everything is complete and exhaustive.

5.5. Phase 1 - Activities

Tasks	Date (Timing)
1. Targeting of women entrepreneurs (online with international partners) 2. Mapping of potential partner companies	May 2021
1. Diagnosis of the 3 selected women entrepreneurs 2. Targeting of partner companies and experts who will participate in the workshop 3. Logistical considerations *(e.g. booking a venue, mobilizing additional facilitators if needed…)*	June 2021
1. Elaboration of the methodology, the detailed schedule *2.* Briefing of the different stakeholders 3. Activity	July 2021

Table 7 Business engaging activities

7. Next Steps

During the meetings, discussions and co-creation sessions of this WP it became clear how relevant it is to design and craft a combined vision of the Shemakes model to move forward. We conclude this deliverable with a solid framework and sufficient background from the labs to start the first phase activities.

Labs become aware of their potential as enabling environments for structural societal change. By having access to an additional set of tools and guidelines they will have the possibility to expand their reach while engaging with the communities surrounding them, developing new research on a networked structure of labs and offering business services and tools to empower the female entrepreneurs emerging from the labs' ecosystem.

WP3 activities will be value based ones, where open-source, hybrid learning and learning-by-doing approaches from Fabricademy philosophy are incorporated, from TCBL's interactive, human-centered and accessible characteristics to adaptable, scalable and inclusive Shemakes language.

In the next phase we will keep the record of all the activities, evaluate them against our hypothesis about enabling and discover which formats and methodologies that seem initially more enabling than others, crafting a new toolkit, for the 12 additional labs to follow on the next phase.

4. Document information

5. Revision History

Revision	Date	Author	partner	Description
V 0.1	22.02.2021	Raspanti, C. Sandini, B. Berentzen, I.	WAAG	First draft and table of contents
V 0.2	14.04.2021	Real, M. Pistofidou, A Françon, S., Guillemot, C., Senave, V Raspanti, C. Sandini, B. Berentzen, I. Gheorghica, A. Sofronea, A. Sandu, E.	WAAG, IAAC, MAKESENSE, REDU	Version to be reviewed
V 0.3	19.04.2021	Sandini, B. Berentzen, I.	WAAG	Deliverable before partner review
V 0.4		Sandini, B. Berentzen, I.	WAAG	Reviewed document
V 0.5		Sandini, B. Berentzen, I.	WAAG	Final draft
V 1.0	29-04-2021	Sandini, B. Berentzen, I.	WAAG	Final edits for delivery

5.1.1.1 Statement of Originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation, or both.

5.1.1.2 Copyright

5.1.1.3 Disclaimer

5.1.1.4 Acknowledgement

The Shemakes.eu project has received funding from the European Union's Horizon 2020 Programme for research, technology development, and innovation under Grant Agreement n. 101006203.

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https://tcbl.eu/business-services

9. Annex

9.1. Flowchart of phase 1 WP3

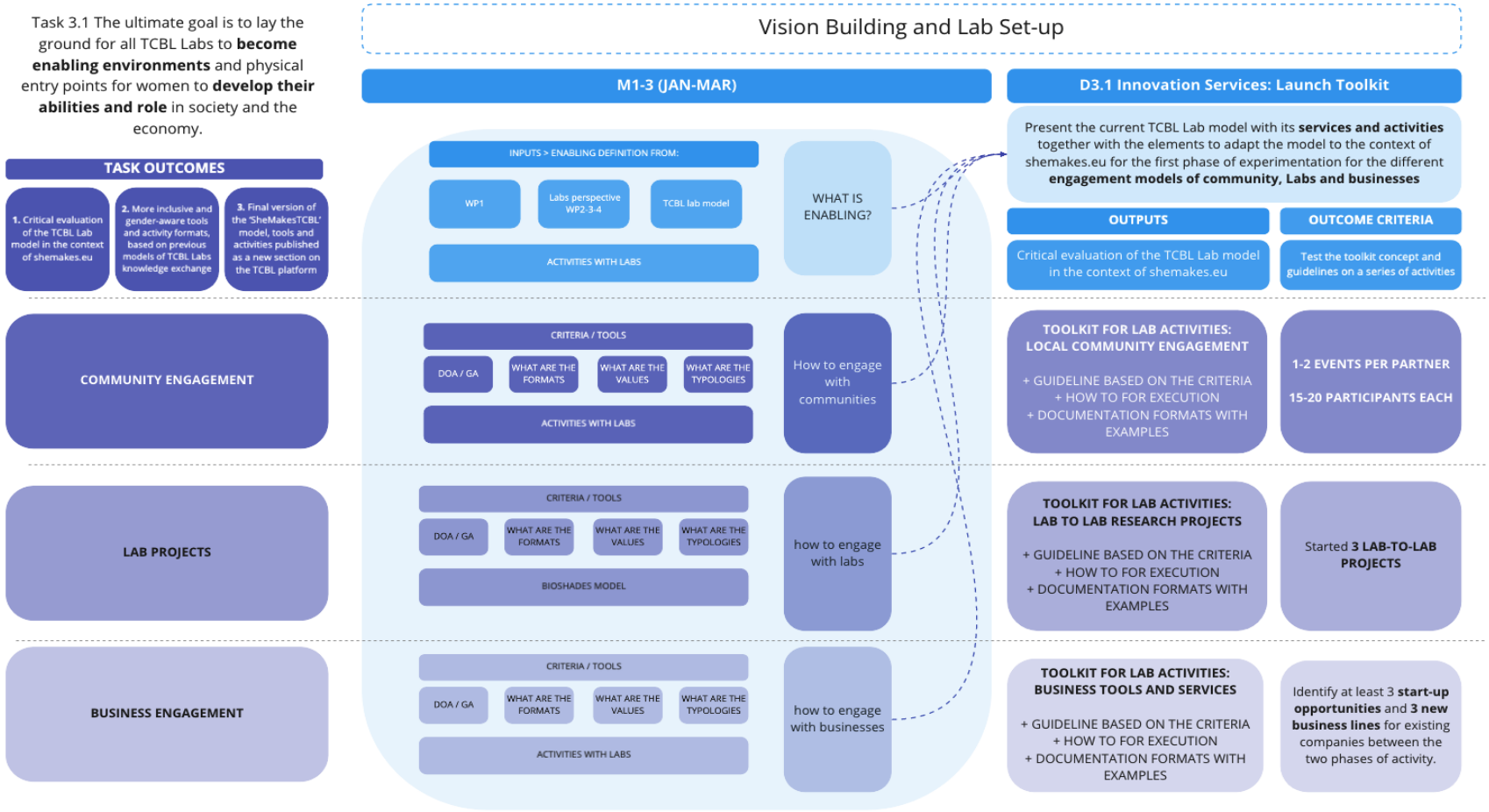

Figure 26 Flowchart of WP

9.2. Labs profile and activities

9.2.1. Questionnaire:

1. Define a percentage for each type of lab typology, percentages need to sum up to 100% across the 3 typologies:
   Design: creative essence, focussing on research, design, encouraging creativity and experimentation, strong connection to education.
   Make: technical essence, focussing on material production for the T&C industry, building/offering equipment or testing.
   Place: social essence, connected to their territory, designed as a place for people with the focus on human interaction and labour.
2. Indicate if your lab is part of a larger organisation, if you are an independent lab, or other if none is applicable.
3. Indicate if your lab is a subscribed TCBL lab and/or part of the Fabricademy network, and/or part of other relevant (enabling) networks.
4. How many people work in your lab and define how they would like to be identified.
5. Define a percentage for whom can be found in your lab during pre-Covid and Covid times. Percentages need to sum up to 100%.
6. What kind of activities does your lab perform and are they still able to do so during Covid times? Percentages need to sum up to 100%.
7. What kind of values does your lab follow, embody and create? Percentages need to sum up to 100%.
8. What kind of revenue does your lab receive? Through funding (both public and private, or services to third parties? Percentages need to sum up to 100%.

9.2.2. Data lab profile:

	IAAC	REDU	LEON	WAAG	ONLF	MAKE	MATRIX
Labs typology							
% Design	30%	50%	65%	50%	20%	50%	30%
% Make	40%	20%	20%	30%	40%	0%	55%
% Place	30%	30%	15%	20%	40%	50%	15%

Part of a larger organisation? Independent lab? Other?	YES NO NO	YES NO NO	YES NO NO	YES NO NO	NO YES NO	NO YES NO	YES NO NO
TCBL Model and Principles							
Subscribed TCBL lab? Part of the Fabricademy network? Part of other networks?	YES YES FABCITY; FAB LAB	YES NO NO	YES YES FAB LAB	YES YES MP (OBA); Culture.fashion	NO YES YES, FabLab suisses - APRES RezoScience	YES NO Ashoka	NO YES STEM-eduation; EU STEM COALITION, ZENIT
Staff							
She/her part time She/her full time She/her volunteer She/her freelance	2 10 1 2	4 1 0 0	0 1 1 1	4 1 0 1	3 0 0 0	10 70 +1K 0	3 1 0 0
He/Him part time He/Him full time He/Him volunteer He/Him freelance	4 13 1 1	4 1 0 0	1 1 0 1	0 0 0 0	2 0 2 0	5 15 +1K 0	1 0 0 0
They/Them part time They/Them full time They/Them volunteer They/Them freelance	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	4 1 0 0	0 0 0 0
Total staff	34	10	6	6	7	105 /+2k	5
% Population (% in Covid)							
% Students % Researchers % Staff % Consultants % Technicians % Teachers/tutors % Citizens % Others	29 (54%) 4 (7%) 10 (17%) 0 (1%) 1(2%) 8 (13%) 38 (7%) 10(0%)	10%(0%) 10%(10%) 60%(80%) 0%(0%) 0%(0%) 0%(0%) 20%(10%) 0%(0%)	30%(85%) 1%(1%) 3% (5%) 0%(0%) 4%(1%) 25%(5%) 35%(0%) 2%(3%)	20%(35% 40%(5%) 5%(50%) 0%(0%) 5%(0%) 15%(5%) 15%(5%) 0%(0%)	20%(0% 0%(0%) 10%(90% 0%(0%) 10%(0%) 20%(0%) 40%(10%) 0%(0%)	0%(0%) 0%(0%) 20%(0%) 0%(0%) 0%(0%) 80%(0%) 0%(0%) 0%(0%)	20%(0) 15%(0%) 50%(100%) 0%(0%) 15%(0%) 0%(0%) 0%(0%) 0%(0%)
% Activities performed (also during Covid? Y/N)							
% Education/training % Project based research % Community engagement % Business support service % Production % Other	25% (Y) 65% (Y) 0% 10%? (Y) 0% 0%	15% (N) 15% (Y) 20% (N) 0% 50% (Y) 0%	70% (Y) 5% (N) 5% (N) 10% (Y) 20% (Y) 0%	30% (Y) 40%(Y) 30%(Y) 0% 0% 0%	30% (Y) 20% (Y) 30% (Y) 20% (Y) 0% 0%	10% (Y) 0% 40% (Y) 10% (Y) 0% 40% (Y)	20% (Y) 45% (Y) 5% (N) 20% (Y) 0% 10% (N)

% Values generated							
% Social capital	20%	10%	30%	25%	35%	40%	15%
% Human capital	30%	20%	50%	25%	20%	20%	20%
% Economic	20%	40%	20%	15%	5%	10%	40%
% Mindset/Cultural	30%	30%	0%	35%	40%	20%	25%
% Other	0%	0%	0%	0%	0%	0%	0%
% Revenue models							
% Funding public/private	70%	60%	20%	95%	70%	60%	100%
% Services to third parties	30%	40%	80%	5%	30%	40%	0%

Table 8 outcome lab mapping profile

9.2.3. Lab description and activities:

IAAC | Fab Lab Barcelona

Fab Lab Barcelona is an innovation centre that rethinks the way we live, work, and play in cities. Fab Lab Barcelona, located at the Institute for Advanced Architecture of Catalonia, provides access to the tools, knowledge and means to educate, innovate and invent using technology and digital fabrication to allow anyone to make (almost) anything. It creates the opportunity for communities and citizens to improve global and local lives and livelihoods. Fab Lab Barcelona's primary beneficiaries are community organisations, educational institutions and non-profits.

In order to learn more about Fab Lab Barcelona's community, lab-to-lab collaborations and business activities, we will highlight three projects: the Biomaterial Crafting Workshops, the Bioshades Workshop and the WORTH Partnership Project.

1.2 *Community*

In the Biomaterial Crafting workshops, the public learned about and experimented with biomaterial making. A **local community engaged** with this project, with a public that self-managed a garden in the district. It was a **hands-on workshop** in the open air. Eventbrite was used as a ticketing tool.

1.3 *Lab-to-lab*

The TCBL event was organized in a distributed way, running in many Labs all over the world at the same time. It was a **hybrid peer-to-peer** event, in which participating Labs did r**esearch all together**. In Barcelona, 22 participants gathered in Mazda Space and performed a global experiment following a live demonstration led by the TextileLab Amsterdam. Participating TCBL labs were set up with an inventory that included petri plates, inoculation loops, prepared nutrient broth, sufficient sterilization and safety equipment, and a sample of natural textile like silk. The bacteria used was called Janthinobacterium lividum (violacein) and the medium of growth was agar and LB broth. Textile dyeing with bacteria is part of the Fabricademy classes content.

1.4 Business

WORTH Partnership Project is funded by the European Commission under COSME, the EU Programme for the competitiveness of Small and Medium-sized Enterprises. WORTH is a European project where **designers, SMEs, manufacturers, and tech providers work together** to develop innovative, design-oriented business ideas.

The project focuses on lifestyle industries, including textile and clothing, footwear, leather and fur, furniture, home decoration, jewellery and accessories. FabTextiles & Materials collaborated with 3 brands/start ups to **co-develop** solutions for innovation in their offers.

The project provides companies with an incubation programme to develop new businesses, including:

a) 10.000 € in financial support;
b) coaching on business strategy and technology development;
c) legal advice on intellectual property rights and protection;
d) participation in exhibitions;
e) networking and professional links.

REDU

REDU is the first social enterprise in Romania that creates new and improved products out of textile pre-consumer and post-consumer waste. It is the first initiative in Iași that collects old and used materials from the community in order to reuse them. Redu's interest in developing an economic activity with a triple bottom line approach (people, planet, profit) lies in the recognition that to build societal trust and to determine behavioural change, we need a proactive attitude rather than a reactive one as well as being able to prove that another world is possible.

In order to learn more about Redu's community, lab-to-lab collaborations and business activities, we will highlight three projects:

2.1 Community

The Solidarity Bazaar was a monthly **public event with participative and educative approaches** on sustainable consumption. Around 150 to 200 participants (mainly women) joined each event, where they had the opportunity to exchange clothes, buy second-hand clothes, consume local snacks, interact with each other and create a local network of responsible consumers.

The events took up an alternative economic trade model of fundraising on the basis of donations. The clothes swapping was on the basis of items received with donations of money for community projects. Other local artisans were invited to sell their products. Also, all events had DJs and a sound system. The setup was always surrounded with posters, stickers, educational messages with topics such as climate change, sustainability.

All the following objectives (also from the other two projects) were done with a mindset that supported the Shemakes values. With the Solidarity Bazaar, the promoted values were to raise awareness on the impact of fast fashion, to promote ethical and sustainable consumption, to foster community building and to facilitate alternative means of consumption. The main challenge was to convince people to have a more detached point of view on their possessions and to spark critical thinking.

A second project that Redu did, were public upcycling workshops with textile 'waste' on how to creatively transform your used clothing into new useful objects. The events of 2,5 hours took place with 12-15 participants and at least two facilitators. Basic knowledge was passed through with activities such as traditional embroidery, sewing, both manually and on a sewing machine, simple pattern making/cutting, as well as an introduction to design and redesign.

With these **workshops**, traditions on mending were kept alive for the next generations. Typical Shemakes values that reflected back in the workshops were: promoting how to prolong the life of clothing, how to collect it, how to repair it and how to turn it into useful things. Other goals were to foster creativity and educate environmentally conscious consumers.

2.2 Lab-to-lab collaborations

The third project was **informal talks** (1,5 hour sessions) on the circularity of fashion. Around 10 to 15 participants of mainly women engaged, ranging from key players in the local textile sector, to clothing designers (also from other labs), students, academia and consumers interested in environmental protection and local policy makers. This led to **constructive debates** on the possibilities of transitioning to a sustainable and circular design in the garment and textile sector on a local level.

2.3 Business

Key players in the local textile sector joined **the informal talks** that are mentioned above. This allowed them to gather different perspectives on a common issue and adept **a critical way of thinking,** within the shared space that was created by Redu.

Leon

FabLabLeón belongs to a non-profit foundation created by Telice, an SME working as a contractor for railway systems. The Foundation's objectives are to stimulate the spirit and development of entrepreneurial and leadership skills and to spark interest in science and technology as pillars of knowledge and innovation.
FabLabLeón was integrated into the FabLab Network in 2011.

León has a special focus on kids and teenagers through our **STEAM Educational programs** "SteamKids", "Jovenes Makers" and "Poderosas", a girls-only tech **educational program**. These girls devise, create, experiment, prototype and innovate surrounded by cutting-edge science

and technology in order to eliminate stereotypes and prejudices that limit the participation of women in the scientific-technological field.

3.1 Community

León organized the Leon Mini Maker Faire. It consisted of **events, co-creation workshops and tours** that celebrated the strengths of the area and how to make an artisan and digital converge. Therefore, artisans from the region participated and also presented their projects as a disruptive change in their lives.

General objectives were to discover existing businesses in the region and to connect people to the lab.

3.2 Lab-to-lab collaborations

CREFAB is the national (Spanish) association of FabLabs that exemplifies lab-to-lab collaboration on a national level. In this project, León and other representatives of labs go to other cities to support local development in events held by CREFAB members. In the **workshops**, knowledge, research and **know-how are exchanged**. It functions as a way to provide new labs with the necessary information and tools to start for themselves.

3.3 Business

LEON4U were **talks and seminars** that connected young talents with companies in León to learn about present and future employment options in the region. They were commercial activities that linked creatives to the industry.

TextileLab Waag

TextileLab Amsterdam researches, questions and speculates how we can help transition the textile and clothing industry towards a more sustainable and value driven approach as part of Waag, an artistic research institution in the Netherlands.

Circular economy, sustainable value flows and networks, as well as material research and innovation are at the core of the TextileLab operations, going hand in hand with exploring informal hands-on alternatives for design, fabrication and production. This wide range of operations and outcomes all feed into education innovation, supporting the change of this field starting from existing educational structures.

4.1 Community

The Reflow Amsterdam pilot is a series of **online workshops** on revaluing garments and extending their life cycle. Each participant received a kit home and the workshop is a live session in Zoom on how to mend clothes and allow interactions from participants. Repairing and mending form a healing activity for the clothing and the participant. Teaching about different mending techniques reevaluates craftsmanship and promotes circularity.

4.2 Lab-to-lab collaborations

BioShades explored the potential of dyeing with bacteria as a less harmful alternative for traditional dying. During the BioShades event, TextileLab Amsterdam connected with 16 laboratories across Europe to dye textile with bacteria together. The event consisted of a **presentation, a hands-on workshop and an evening programme with experts** from the field. It brought together artists, designers, scientists, chemists and researchers from different fields. By **collaborative and hands-on research, and working together**, other labs were trained.

Furthermore, the documentation and design of the workshop were shared for **knowledge transfer.**

4.3 *Business*

Onl' Fait

In October 2017 in Geneva, the Onl'Fait association opened the city's first educational FabLab, a space dedicated to digital creation that is open to all. Onl'Fait provides its community with the technical, technological and human resources to build, repair, share, try out, crash, start again, then develop, rebuild and revolutionise a concept, a prototype or a product among an eclectic community of enthusiasts.

The Onl'Fait FabLab is a space for inter-generational and multicultural encounters aimed at pondering an ecological, sustainable and citizen-led approach to science, technology and consumption. A FabLab is also, and most importantly, a worldwide sharing resource in which members are alternately contributors and beneficiaries and experiences are pooled in order to optimise overall innovation potential.

5.1 *Community*

Onl'Fait participated in several **festivals** - such as Les Creatives - that engaged with the local community. With its **events and workshops**, the lab encouraged diversity at all ages and organised workshops about textile and new technologies. One of the aims was to make young girls enthusiastic about science in a creative way. Other specific elements that supported Shemakes values were to bring technology and the underground artists from Geneva together. Hands-on knowledge of digital sewing and electronics were part of the events.

5.2 *Lab-to-lab* *collaborations*

With two other Swiss labs, Onl' Fait developed the project Voodoo Dolls for children. They were **workshops** where kids could learn more about electronics, creativity, tools, and machines such as soldering machines and laser cutters.

5.3 *Business*

Onl' Fait took up the role of **consultants** to help designers to optimise their prototypes. Think for example of accessories with laser cut silk, leather accessories and T-shirt decorations. They were **mentoring and coaching sessions**, where participants received open source

knowledge on how to improve their prototypes and designs. If that implied that new tools or working with new machines where necessary, then that was included in the sessions as well.

Makesense

For 10 years, makesense has been creating tools and programs for collective mobilization to enable everyone to take action and build an inclusive and sustainable society. This was made possible by bringing together engaged citizens, passionate community-organizers and forward-looking entrepreneurs and organizations to work collectively.

6.1 Community

Fairwear Tribe are ongoing, organized **events** to raise the opinion's attention and promote entrepreneurs. A group of citizens committed to the organisation of Fairwear Tribe, with the goal of making fashion more fair, innovative and sustainable. In doing so, they have been able to reach hundreds of participants already. The group of citizens also set up **workshops**, **talks** and **training** to support emerging projects in the field of fair fashion. Citizen engagement is a strong value that also aligns with the Shemakes values.

6.2 Lab-to-lab collaborations

Sprint is an **intensive training and learning program** that guides participants from an idea to a market validated concept. It runs several times a year, lasts for 6 weeks and can embark up to 15 entrepreneurs. makesense uses coaching and peer to peer support in this project. This program is shared with other labs and it has a link to the T&C sector and business because the end product is the market validated concept. Some keywords of Spark is that it is a fun program that sparks curiosity with the participants and strengthens their decision-making.

6.3 Business

Talents 2024 is a one year start-up call to identify emerging young entrepreneurs in Paris, support the creation of their start up, select the best, give them an award and make them ready for incubation. The recurring prize runs from October to June. Yearly, over 70 candidates apply. Makesense pre-selects 20 candidates and awards 5 with a prize. Talents 2024 also consists of **training, mentoring and peer to peer support.**

Matrix

matrix Lab is part of Matrix GmbH & Co KG. This medium-sized consulting company has been advising private and public sectors for over 35 years. The portfolio reaches from enterprise-, regional- and politic-consultation, communication work, product design up to innovation management.

With a sustainable and benefit-oriented approach, matrix aspires to achieve the broadest possible social and entrepreneurial impact. In North Rhine-Westphalia, matrix and its partner network are pioneers in collaborating in open knowledge environments such as FabLabs, business incubators and involve the makers scene movement as an innovation-engine.

9.3. Community mapping activity

Downloaded from Waag's co-creation navigator.

Community Mapping

purpose
Before engaging with communities and stakeholders, it's crucial to investigate which ones you like to engage with and which ones are essential to be able to reach your goals. By making a list and dividing these groups into the following three categories will help you structure your thinking and make sure you won't forget about any of them. You'll also see that different groups have different ways to communicate with.

timeframe: 1 - 2 hours
group-size: 1 – 5 people
materials: blank page (A3 or A4)

Rules and instructions

Take a blank page and make three lists. The community of place, community of interest and community of practice. Try to come up with as many communities that fall under these as possible.

Communities of place are defined by geographical boundaries, which can vary in size from administrative areas, to whole towns, a couple of streets within a town or smaller settlements. These people can be organized in neighborhood groups, committees or other. Their shared factor is the fact that they share a similar space or area to live in, which engages them on a geographical level.

Communities of interest are defined by people with a shared interest or background (i.e. Action group, Patients' Groups). They can also be defined by people with protected characteristics (i.e. race, gender, disability, age, religion etc.) This is a group of people interested in sharing information and discussing a particular topic that interests them. Members are not necessarily experts or practitioners of the topic. The purpose of the community of interest is to provide a place where people who share a common interest can go and exchange information, ask questions, and express their opinions about the topic. Membership in this community is not dependent upon expertise – one only needs to be interested in the subject.

Communities of practice are communities that have a practical or professional interest in the topic in common like bus drivers, air quality experts or mobility planners. The purpose of a community of practice is to provide a way for practitioners to share tips and best practices, ask questions of their colleagues, and provide support for each other. Membership is dependent on expertise one should have at least some recent experience performing in the role or subject area of the community of practice. You will reach these communities more because of their professional interest or expertise, than their political background or strong opinion.

waag
technology & society

Figure 27 Activity explanation as shown in Waag's co-creation navigator