Let's discover interdisciplinarity through artistic representation
Session outcomes

AScUS unconference 2021

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Introduction

Complex ecological problems question all scientific disciplines. Sustainability and the study of technical systems for sustainability must be understood in a holistic way, otherwise some issues will be missed. The segmentation of science into disciplines can be a hindrance to dialogue between different scientific fields, making dialogue between different disciplines an additional effort for the researcher. Interdisciplinarity, in theory and practice, is often perceived as a risk for researchers (e.g. perceived as a difficulty of identification in a community).

In order to make interdisciplinarity less abstract and demystify it, we proposed an artistic workshop on it. We have done this workshop once at the University of technology of Troyes (UTT) and we wanted to test it in a different environment. This is the reason why we submitted this workshop at the 2nd Actionable Science for Urban Sustainability (AScUS) unconference.

This document aims to record the outcomes and propose future path of the *Let's discover interdisciplinarity through artistic representation* session from the AScUS unconference 2021.

Reminder of the goal and the activity

This workshop is two hours long, reproducible in any academic setting. The objective is to bring together researchers from different communities and make them reflect on a specific socio-technical system: the tomato. The tomato is a transversal object known to all. This object may seem very simple to anyone not working on it, but in fact hides a certain complexity that is not apparent at first glance. Researchers will be encouraged to : (1) individually graphically represent their vision of interdisciplinarity, (2) immerse themselves in the role of a tomato researcher (discipline assigned at the beginning of the workshop), (3) propose research questions that would allow researchers to interface with each other around a common scientific effort, (4) collectively graphically represent their vision of interdisciplinarity. Those 4 steps can be seen in Figure 1.
A comparison of before and after graphical representations would allow us to see how a role play could decentralize the researcher from his own research to take him out of his daily problems and show the interest of interdisciplinarity. Finally, the objective of the workshop is to show the added value of an interdisciplinary approach around a research object.
In order to ensure that participants are immersed in their role as tomato researchers, a web page on a fictitious tomato research centre with the specialty of the academic participants is set up.

The reproduction of the workshop in different academic contexts will enable us to consolidate the workshop process and maybe identify key elements to ensure an understanding of interdisciplinarity added value. The path-to-action contribution that is expected will be a web page (or web site if we have too many elements!) where we will find

the workshop proceedings and the results that will be obtained. The different graphical representations will be available online and will allow researchers to understand the academic understanding of interdisciplinarity.
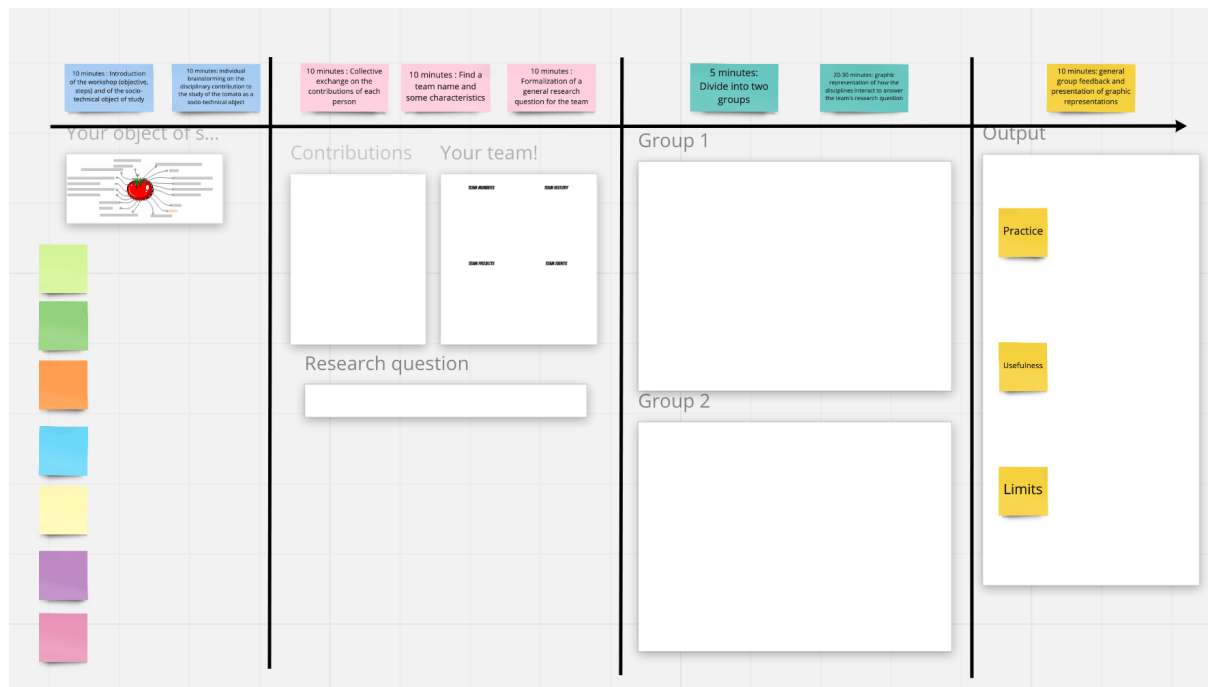

Figure 1: screenshot of the digital space where the workshop takes place

Feedbacks and outcomes

Pre-conference

We have organized two one-hour pre-conference sessions to make them accessible to the largest number of participants. The goal of these pre-conferences was to meet before the workshop and to get to know the tool on which the workshop was held: Miro.
We had 5 participants in the first session and 1 participant in the second session. Figure 2 represents the chronology of those 2 pre-conference sessions.
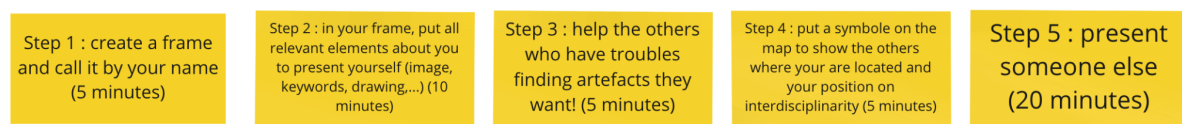

Figure 2: chronology of a pre-conference session

We had made examples of frames that described us (name, first name, status, age, research theme, hobbies and various passions). The participants had to try to reproduce the frames by adding their information. They were also asked to place pictures from their computer or from the internet. They could also add emojis or drawings.
We also made a chart with different axes where participants were asked to position themselves according to their experience of interdisciplinarity. (see Figure 3).
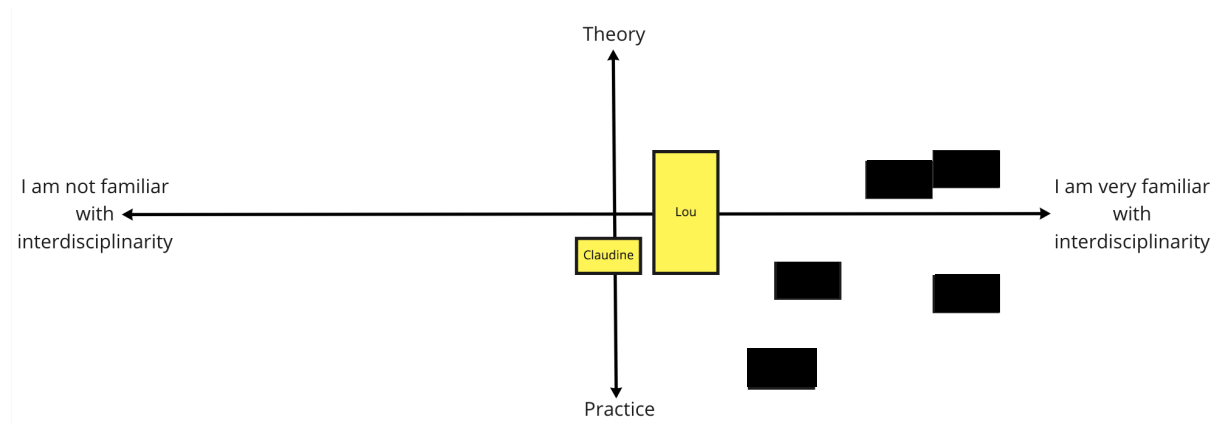
Figure 3: position of participants on the graph according to their experience of interdisciplinarity (session 1 and 2 combined).

Conference

Due to different time slots among the conference participants, we conducted the workshop three times at different times. This allowed us to have participants coming from Europe, US and Asia.

Figure 4: planning of the ASCUS unconference 2021

The participants were PhD students, senior researchers or practitioners. The disciplines were different: architecture, mechanical engineering, geography and environment, urban planning,...

The workshop was held in three parts, the first part was an introduction to the workshop and the launch of the game (contextualization) which lasted approximately 10 minutes. The most important part, which was 1 hour 10 minutes to 1 hour 20 minutes, was the role-playing game. And finally the last part was an exchange between the participants on three aspects of interdisciplinarity: practice, usefulness and limits. We have divided up the different speaking times. Claudine introduced the workshop, and Lou led the game. This

organization allowed the organizers to split the effort : Claudine was able to take notes during the session and Lou was focused on the management of the game.

First session

During the June 2nd session we had 4 participants.

The first stage seemed easy for the participants, while the second stage was difficult for them to project. The exchanges between participants were not very plentiful. In our workshop, in step 3 the participants are divided into two groups and are on their own. Due to the number of participants we did not divide them into two groups. As a result, there was no competition between the groups. We wonder if this had an impact. We also wonder about our impact on their exchanges for this stage since we had to stay with them.

During the game questions were asked by the participants about what will be the outcome of the workshop.

Second session

During the June 3rd session we had 4 full participants (5 in total).

During the first step, the participants had many ideas. In the second part, we noticed that the "confirmed researchers" became the leaders of the group. For some participants this part seemed to be easy, but the exchange between participants started to decrease.We wonder if it's because it's easier to talk about ourselves than to talk together. In the third step, the participants did not position themselves in their representation, yet we an see their research questions.
One of the participants had to leave us in the middle of the workshop, which surprisingly allowed others to express themselves more easily.
The last step of the workshop was done very quickly because we were a bit short of time.

Third session

During the June 4th session we had 5 participants.

In this session Lou had to guide the participants much more during the workshop. During the first step, participants tried to position themselves absolutely on the tomato, which was only there as an example. We noticed that it would be useful for the next workshops to not forget to tell people to put their first name on the post-it or to keep the same color throughout the workshop.
During the second stage, the participants had difficulty projecting themselves into the game, and had a very limited exchange. Lou had to intervene several times to focus on the scientific contribution of the group.
Concerning the 3rd part, there was a strong need for precision from the participants on what they had to draw. They didn't want to make a wrong drawing. However, in this workshop there are no right or wrong answers or drawings. The answer of Lou was that they had to

draw about the process of production of interdisciplinary knowledge. Lou was forced to intervene in their drawing as the drawing was focused on the production process of tomato. There was not a strong collaboration between the participants in creating the representation. We had to extend the time of the workshop.

Feedback from organizators

One of the possible limitations of the impact of the workshop is about the fact that all the researchers were quite young (early researchers). We are supposing that the workshop works well with a mixte of early and senior researchers.
It is interesting to have 2 groups working on the representation of knowledge production, as a competition can be established to make sure the groups finalize their drawings.

Feedback from participants

This feedback has been given by ⬛⬛⬛⬛⬛ after a discussion with different participants.
There is a part in the explanation of the instructions that makes it unclear to the participants. Perhaps we should guide the participants a little more and ask key questions to guide them. This workshop was not totally adapted for the audience of the Ascus conference. Indeed the audience was composed of researchers and practitioners, whereas our workshop is only for researchers. The main issue was the 2nd part of the workshop where participants had to create a laboratory, its history, events, and so on. The workshop has been developed by French PhD students and considered into a very French organization, thus it explains this issue. This was a problem for most of the participants who were from other countries.

One of the limitations identified is that we don't know at the beginning what interdisciplinarity is. Position to do a brainstorming on interdisciplinarity with a word cloud that is displayed for the participants.

Results and interpretation

Results

Figure 5, 6 and 7 represent the graphical representations realized by participants.
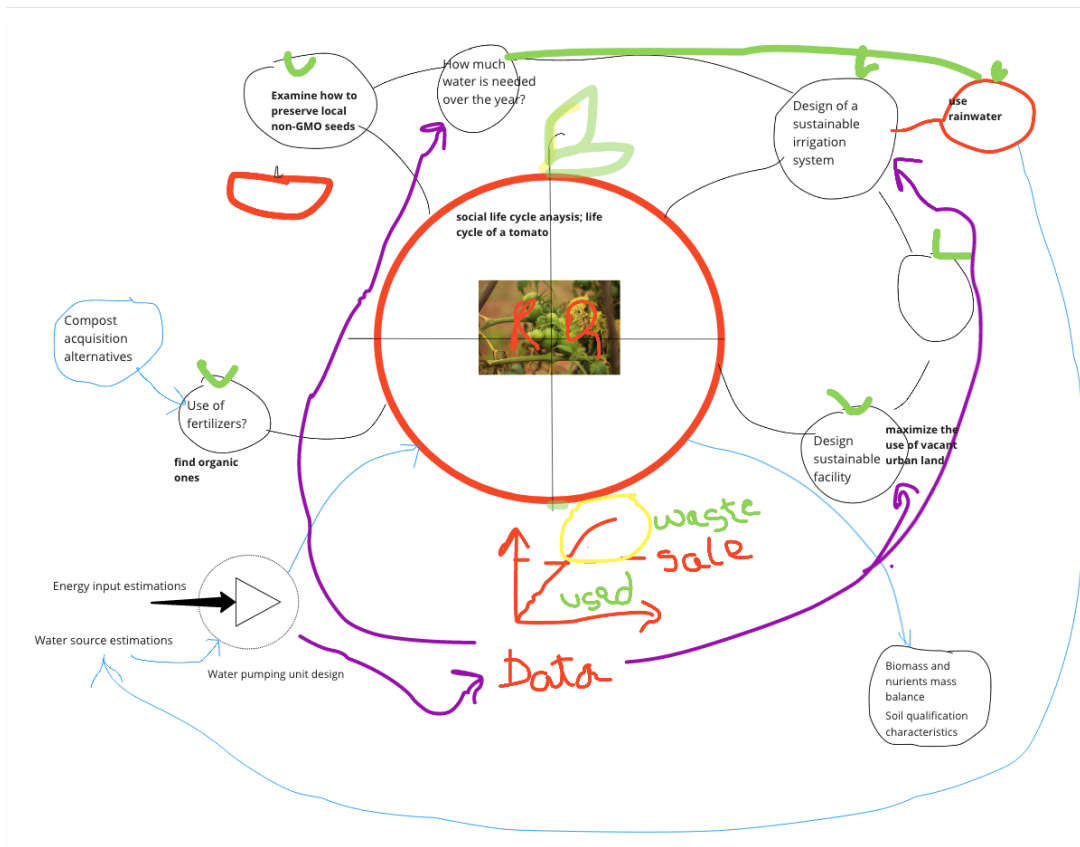
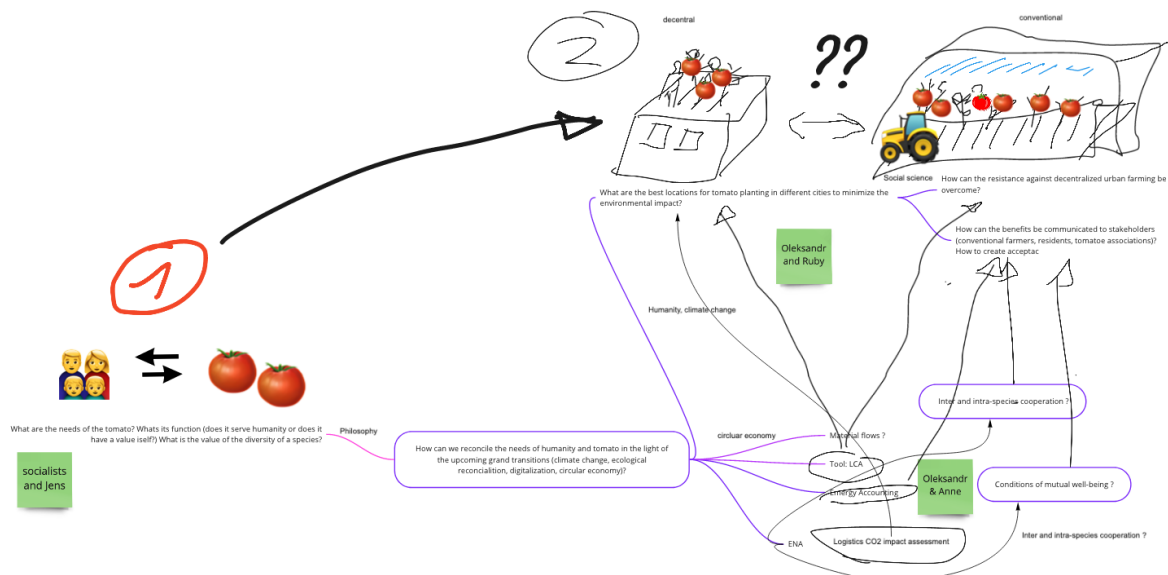Figure 5: Artistic representation of session 1

Figure 6: Artistic representation of session 2
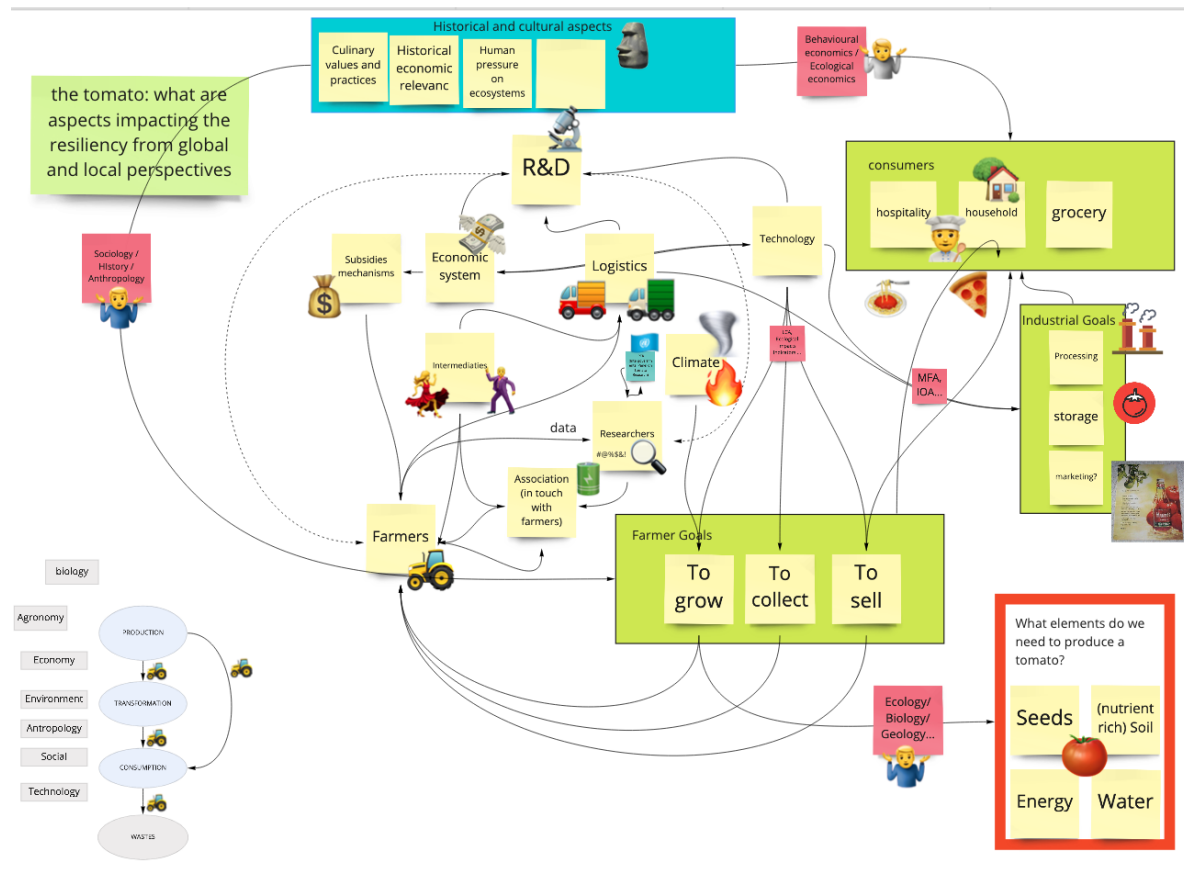
Figure 7: Artistic representation of session 3

Interpretation of the results

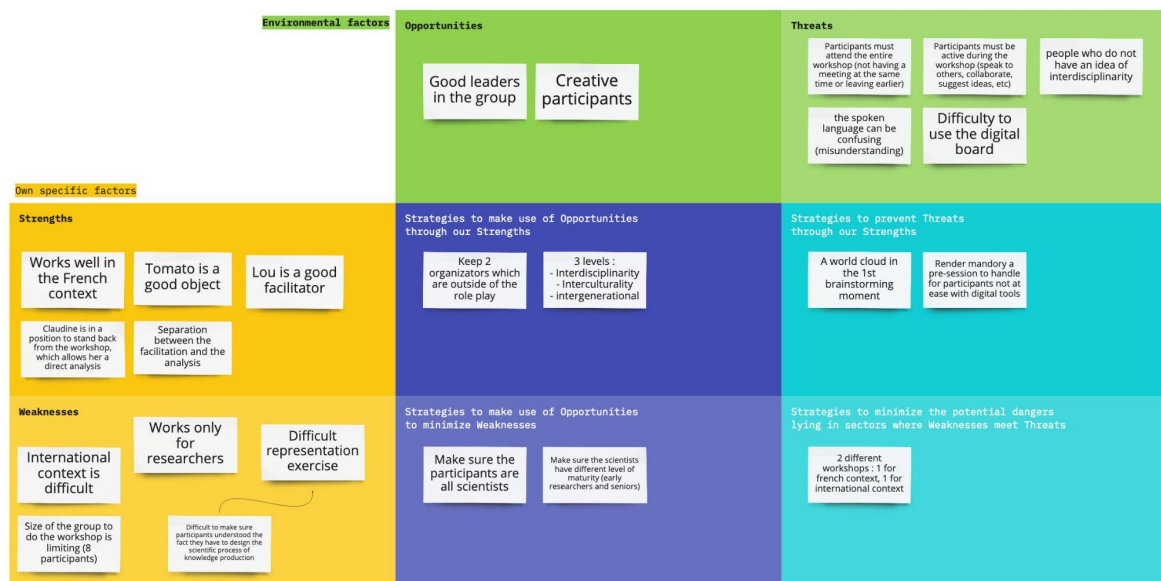Figure 8 shows an analysis grid of the Opportunities, threats, strengths and weaknesses of the workshop.

Figure 8: SWOT analysis of the workshop

A qualitative analysis of the different outcomes of the workshop will be done. For each diagram a record of the explanation by a participant has been done. Thus, the qualitative analysis will be done through the diagram and the transcript of the explanation to consolidate the results. The objective of the analysis is to see if there are some common patterns to the process of knowledge production.

Path to action

After four experiments/attempts, one in our university and three with AScUS, we can say that this workshop works but must be modified to be adapted to different contexts. Indeed, the French national research context and the international research context have different constraints and modes of organization. This is why two workshops will be distinguished, one per context. The chronology of the different activities for the path-to-action is detailed below in figure 9.

In order to develop the workshop for the French context, we will conduct a study on the impact of the workshop on the understanding of interdisciplinarity. And in order to develop the international version of the workshop, we will test an adapted version of it in several international contexts. First, we will take the opportunity of the desire of different european universities to develop transverse research in the European University of Technology, to propose our workshop, especially in the context of the construction of the laboratory of sustainability sciences.

We also want to make this workshop public so that anyone wishing to reproduce it can have access to the process, to our results and feedback. We also want these people to be able to give us feedback on the realization of the workshop (the date of the workshop, the general impressions, the results etc.). For this we will open a forum, where the results of the workshops will be made available with metadata (particularly the necessary data (disciplines of the participants, number of participants, age, country of the laboratory, gender).We are thinking of opening a forum and storing the data on the Ecocloud platform, which is in line with the values we have. We will also work upstream on the formalization of the workshop in order to make it available and reproducible. We are thinking of proposing an online version and a tabletop version.

- Workshops (done and to do)
- Actions planned around the workshops
- Analyzis of the documents

March
- Development of the workshop on tomato
- First workshop with 8 participants (30th March 2021)

April
- Feedback on the 1st workshop and development of the English version
- Clarification of the goal of the workshop and writting of the AScUS unconference 2021 proposal

May

June
- 3 workshops during the ASCUS unconference 2021

July
- Adapt the workshop to an international context

August
- Gather all the recordings and files on the workshop
- Develop the web page related to the interdisciplinary workshop

September
- Open a forum to put the outputs of the workshop and allow people to comment on them

October
- Workshop in the sustainability lab
- Having a final version of the 2 workshops : the French version and the international one

November
- Workshop in the sustainability lab
- Qualitative analysis of the results (1st coding)

December
- Qualitative analysis of the results (2nd coding)

January
- Qualitative analysis of the results (3rd coding)

Febuary
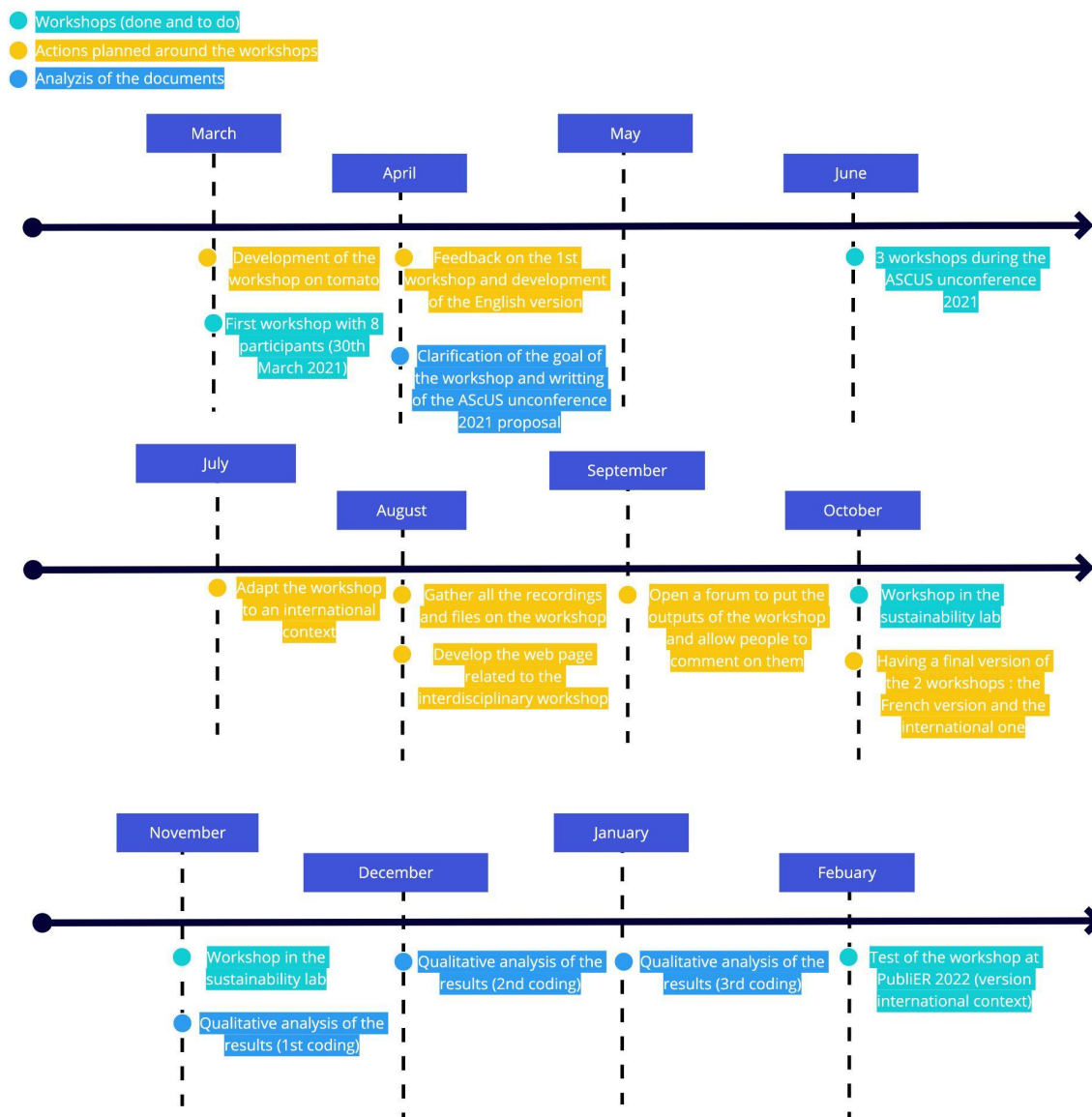- Test of the workshop at PubliER 2022 (version international context)

Figure 9 : chronology of the different activities for the path-to-action