EUt+

European University of Technology

Deliverable D49

D4.2.3a.b.c Workshop series

Del. Rel. D4.9

WP 4

Description: Inclusive workshop series on Pan-european societal challenges research linking, followed by transversal research conferences

Comments:

Dissemination level: **PU**-Public

https://www.univ-tech.eu/phase-1-results

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Foreword to D4.2.3a.b.c

In line with the co-construction approach to structure the European Sustainability Science Lab (ESLab+)[1], based on common values, several events on sustainability have been organised within the EUt+ community. Some of them were mentioned in deliverables 47 and 48, presenting the main insights to inform the next steps. This deliverable explains in detail how these events are organised, the spirit behind the events and some practical elements.

This deliverable is the result of a collaborative work from a group of students who joined forces to produce this synthesis in a clear and accessible format. It is an additional proof of engagement and dedication for the benefit of peers, which will hopefully benefit, not only to other students, but to research in sustainability as well.

[1] https://esleut.pubpub.org/

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Introduction

Synthesis Winter Seminar 2021

The Winter Seminar is an annual seminar organised by, and dedicated to, PhD students of the Interdisciplinary Research Team on Transitions Towards Sustainable Socio-technical Systems (CREIDD) from the Université de technologie de Troyes. It is an annual opportunity to meet and share scientific practices and knowledge between early-stage researchers developing projects in the vast field of sustainability science.

This edition took place in the context of the European University of Technology (EUt+) and for the first time, it was open to doctoral students from other research teams, members of EUt+.

CREIDD embraces an interdisciplinary framework and emphasizes the construction of projects through collaborative effort. In order to achieve this, it is crucial that all members meet and trust each other, as well as embrace the different fields and levels of experience between them. Therefore, it did not matter whether the researcher had not yet started, was in the middle of, or had already completed the project. The seminar was open to all doctoral students.

One of the main objectives of the seminar was: *to help build a shared vision of the researchers' impact on sustainability in a challenging world*. Despite the seriousness of the objectives, the sessions were based on a more informal structure with constructive and playful scientific exchanges. These were quite successfully, as the general consensus was: *"Let's then meet for the next edition."*

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1.1 Origin of Participants

- STEEP, INRIA, Grenoble (1)
- InSyTE, CREIDD, Troyes (9)
- Faculty of Civil and Environmental Engineering, Darmstadt (5)
- Technological University of Dublin, Dublin (1)
- Grupo de Economía Agraria, Cartagena (1)
- Darmstadt Institute of Statistics and Operations Research, Darmstadt (1)
- Environmental Sustainability & Health Institute, Dublin (1)
- Paulina Potemski - InSyTE, ERIS, Troyes (1)
- National Institute for Transport and Logistics, Dublin (1)

1.2 Day 1 activities

1.2.1 Welcome session

The following question was asked to attendees: “What are you expecting from these 2 days of exchange?”. As anticipated, a variety of answers emerged. Below is an illustration of the results provided by Mentimeter.

Figure 1. Expectancies of participants

Relevant findings - As mentioned at the beginning of this document, the seminar was organized between different partners of the EUt+ initiative. However when confronted with the question: “are you aware of the EUt+ initiate?”, many participants were indeed not aware or even familiar with it (see Figure 2):

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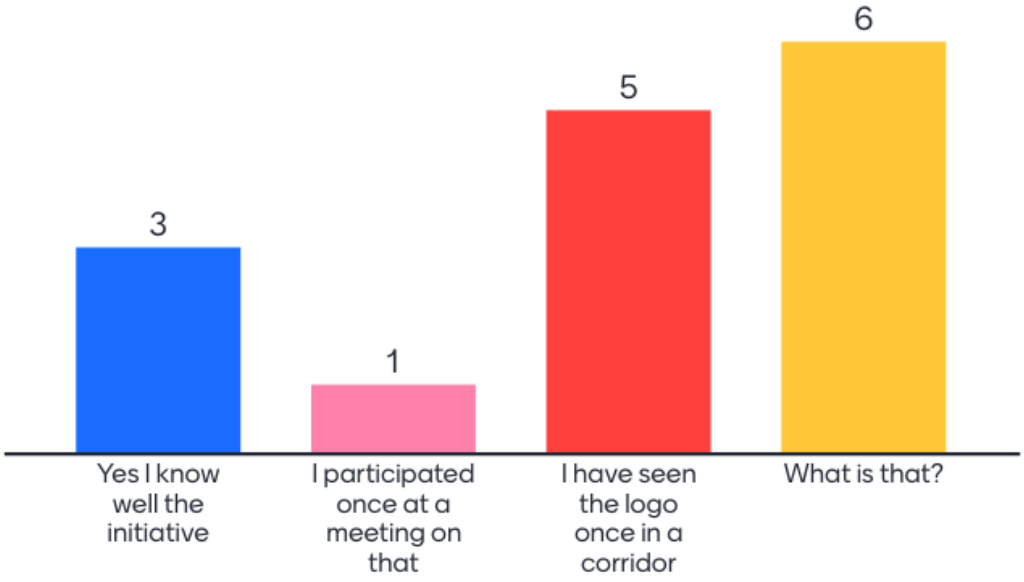

Figure 2. Awareness of participants on the EUt+ initiative

1.2.2 Ice breaker

Participants were divided into 4 teams of 5 persons approximately. Each group had 10 minutes to create collaboratively a meme on their PhD experience. This activity had 2 goals:

- Getting to know each other and create a friendly and supportive atmosphere
- Feeling comfortable with the use of MS Teams. More precisely, participants would have to leave the general channel and create their own session in a different channel.

Figure 3 illustrates quite well the whimsical outcomes from this activity.

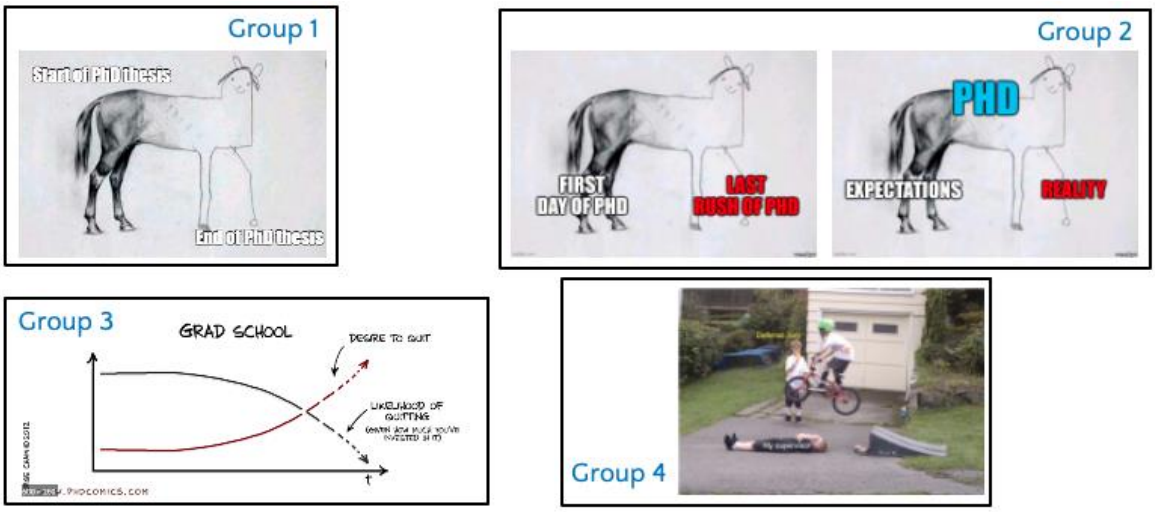

Figure 3. Production of the 4 groups

1.2.3 Let's discover your research

In this session, during 2.5 hours, 18 participants presented their research (after every 5-6 presentations there would be a group discussion).

Table 1. List of members and the presentation of their research

Institution[2]	**Title of the presentation**
INRIA	Digital technology in the Anthropocene: technical scientific and societal challenges at the local level
UTT	How to integrate social and ecological dimensions in early phases of complex technical projects? An approach based on the value perceived by stakeholders

[2] Names have been deleted and replaced by the institution of the PhD students

UTT	Proposition of a methodology to help integrate the sustainability of complex systems (based on the CSR strategy of companies) Application in the automotive industry
h_da	Contribution of biological residues and waste materials to the bioeconomy
UTT	Territorial anchoring for sustainable socio-technical transition: the case of waste management
UTT	Sustainable value analysis in sustainable business models at the BoP
TUDublin	University as a Living Lab: a testable approach to encourage sustainability and innovation in a multi-context entity
UPCT	The digital gender divide (DGD) : comparative study between France, Spain, Morocco and Algeria
h_da	Efficiency determination and optimisation of water wheels
UTT	Misgivings fear is a key factor for Technocracy, enlightenments from a forgotten geoengineering project of Melt the Arctic from 1959 to 1973.
h_da	Investigation of the influence of wooden debris on morphodynamic parameters an processes
h_da	Analysis of the flow conditions in a Zuppinger water wheel using Particle Image Velocimetry
h_da	Presentation of DISO : Darmstadt Institute for statistics and O data science research
UTT	DigitaLCA and sustainable transition

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UTT	What indicators for the technocene? Analogy in ecology: the techno-diversity
h_da	Impact of climate change on hydraulic structures and water management. Focus on dishways and hydropower
UTT	Towards a Circular Economy: from individual to collective action in the Industrial Ecology
TUDublin	Developing an indicator framework for measuring
UTT	The role of Women in populations' resilience (not presented during WS2021)

The discussion led to an exchange of views on a variety of research aspects. Below are the main questions that emerged. Most of the exchanges raised from different types of research that each of the participant PhD students are elaborating.

- **Word - Concept of nature:** Some of us speak about the "natural form" of something and then what does "nature" mean?
- **Positioning - Epistemology and ontology:** Why talking about epistemology and ontology? How to deal with this? This question of ontology obliges us to question our topic. For instance, some of us work on circular economy and regarding the epistemology you have, circular economy may have a different meaning. And thus, some representations of circular economy does or does not really bring sustainability.
- **Positioning - Positioning ourselves in a discipline:** when should we position ourselves? Does it block us into a discipline? How to deal with disciplines while working on sustainability? How to make the best of being in a discipline but to adopt an interdisciplinary approach? We are in a specific context in our PhD, so sometimes this

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limits the discipline that participants are in (for instance, Aina has to do his PhD in computer science, this is not negotiable).

- **Positioning - We are all working on sustainability:** what is sustainability for you, your supervisor, your discipline, your university? There is a wide variety of understanding of this concept and it can be difficult sometimes to position ourselves.
- **Positioning - Should we stop discussion about definition and do some "real actions":** when do we start acting, when do we stop discussing concepts? How much do we researchers are actually making an impact outside the group of the school?
- **Relationship - About our relationship with our supervisors:** "I do things and I notice my supervisors when it is too late to go back or when it is finished." This is a practical strategy that cannot work all the time because it can lead to tensions between the PhD students and his/her supervisors. This questions the level of freedom we have in our thesis. In some contexts, researchers consider young researchers as colleagues and in other contexts the latter are considered as subordinates.

1.2.4 What is sustainability?

The facilitator requested from the participants a view of the concept of sustainability, but more precisely how they see this concept in their research. Therefore, the question: "Do you integrate / use the concept of "sustainability" in your PhD?"

Figure 4. Repartition of use of sustainability in the research of the participants

Another question asked to the participants was on the impact of the integration of “sustainability” in their research. Figure 5 shows the answers of participants.

Figure 5. Precisions of the integration of “sustainability” on the PhD of participants

The session was organized as a world café. Participants were divided into 3 small teams and each team had a question to reflect on. In this activity, the goal was mainly to contemplate the questions (related with different aspects of sustainability research) not necessarily to find answers.

Structure of the world cafe:

Rules of the game:	**Process:**
• Be reflective • Be critical • Be nice • Have fun • Collect questions and comments • This is not a competition • We are all here to learn • Be patient • Nobody is wrong • We share our experience	1. Each team had 15-20 minutes of discussion 2. After they had to return to the general group and present their thoughts. 3. After presenting their thoughts, the 3 teams would return to reflect upon a different question. During this step, some team members would swap randomly to other teams. This swap guaranteed a quick ample engagement between different participants. As the participants would "travel" to other teams bringing with them the information from the previous teams they were defined as the "ambassadors of meaning and knowledge" One person from the initial breakout rooms, would remain in the "starting" team, to facilitate the discussion and debate. This was the "table host". This cycle happened 4 times to answer 4 different questions.

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Synthesis of activity outcomes:

Questions	Outcomes
team 1: What does Strong sustainability mean to you? What does Weak sustainability mean to you? Do you / could you use any of those concepts in your research? What are the challenges and opportunities of using those concepts for your research?	The three groups took three different directions. The first group focused more on the discovering and questioning the concepts of weak and strong sustainability. The second group had already discussed the distinction between the two concepts and therefore debated the notion of performance. The third group questioned the relevance of the distinction, between the concepts. Perhap it would be more worthy to focus on actions and acting towards more sustainable future!
team 2: What does Sustainable Development mean to you? What is the relationship with the concept of Sustainability? Do you / could you use any of those concepts in your research?	The three groups developed the same point of view. There are weak and strong sustainability and there is a problem with the anthropocentric-based approach to sustainability.

What are the challenges and opportunities of using those concepts for your research?	
team 3: Do you think we live in a 'Sustainable Society'? How do you imagine a 'Sustainable Society' would be? Does your research contribute to build a 'Sustainable Society'? If so, how? What are the challenges and opportunities?	Once again, the three groups engaged in three different directions. The first group highlighted the fact that sustainability is a broad notion. It is related to a multitude of aspects from ecology to equality as well as many others. Therefore it is a somehow a "liquid" notion. Considering this it becomes quite a difficult endeavour to define a sustainable society and consequently to assess if we live in a sustainable society. In the second group, the point of view was more centered on technical and engineering aspects of sustainability. The third group targeted the political issues that contribute sustainability. For instance, how the notion of sustainability is in many different ways, linked to democracy.

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Overview of the activity:

The discussion was quite stimulating as all the participants had their own particular vision of what sustainability is. Simultaneously, some of the concepts included in the questions were not familiar to all participants, despite most participants researching in the field. For instance, the difference between weak and strong sustainability seemed to be unclear for most of the participants, except for those who had to position their research in weak or strong sustainability.

Additionally, the relationship between sustainability and sustainable development was quite difficult to grasp. Participants concluded this was due to the many different definitions and theories developing a particular perspective of these concepts.

The very diverse visions of concepts related to sustainability were perceived by participants as a challenge, who struggle to have a clear vision of the concept and consequently, struggle to use it in their research confidently.

Nevertheless, considering the current emergency context in many different areas (Climate, Health, Economy, Democracy, etc.) working on sustainability topics was clearly seen as an opportunity by all the participants.

Similarly, to the discussion in respect to the concept of sustainability, also the discussion related to a “Sustainable Society” was strongly shaped by the different research fields of participants. Depending on the researchers’ fields, their vision of what a society (therefore a sustainable society) should be and how this society would look like, would differ.

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The different points of view are summarized below:

- The contribution of innovation to a sustainable society was crucial.
- There are many opportunities and challenges associated with the development of digital technologies.
- the political aspects and the needs for policies to frame a sustainable society.
- What the global strong sustainability should look like in order to enable a sustainable society to develop.

Overall, the discussion allowed the participants to share their knowledge and vision of sustainability and its associated concepts. It also contributed to an important insight: although sustainability was coincident factor in the majority of the participants' research projects, it did not mean participants had knowledge in the same areas nor the same depth of knowledge in each of the areas. This affected greatly their point of view. Here participants realized that communication on a topic with such diverse views is a serious challenge. Therefore, a real need exists to homogenize (or standardise) definitions of sustainability and its associated concepts, to clearly understand sustainability, to debate its complex framework of problems and possible solutions.

1.2.5 What is interdisciplinarity?

Aim of the discussion: better understanding interdisciplinarity (what it means for everyone).

This discussion joined all participants. The moderator started the activity by asking what is the definition of a discipline and then it followed to discuss the definition of: multidisciplinarity, interdisciplinary and transdisciplinarity.

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Overview of the activity:

The **notion of discipline** is different in many countries as well as in different standardized academic disciplines. In France, for instance a “section” is a discipline. Each discipline is understood as a box with its specific framework (epistemology, members, etc). In France, sustainability is not a discipline. Researchers from Darmstadt suggested the desire to create a PhD in sustainability: the moderator and other French researchers then wonder whether it might become a discipline by itself?

It was acknowledged by all participants that multi, intern and transdisciplinarity had in common the join of forces towards a common goal (usually a research project). The key differential aspect was the manner in which this happened.

Multidisciplinarity: each discipline works separately in a particular stage(s) of the project and by the time the project has come to an end, little interaction (if any) has taken place between the researchers.

Interdisciplinarity: represents the contribution of different disciplines in supporting each other. For example in computer science, software developers and mathematicians support each other in a common goal. In recent times, interdisciplinarity has played a big role within many disciplines (ecology, sociology, biology, etc.) that target solutions for Climate Change. For instance, ecology as a science is interdisciplinary as presented by Edgar Morin in *L’entrée dans l’ère écologique* (2020). Interdisciplinarity has become trendy, however it does present several limitations (discussing among researchers from different disciplines is often seen as time-consuming activity; it is sometimes complicated to understand each other when we do not come from same backgrounds; none of the participants were familiar with a specific and efficient method to practice interdisciplinarity).

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In Darmstadt there is a "new" **PhD Center of Sustainability science** where researchers can achieve the title of Dr. rer. sust. **(Doctor of Sustainability**). One of the Center's objectives is to foster interdisciplinary work with at least two different disciplines (research areas). For this reason, there is a need for 2 supervisors per research project, one from natural science and one from social sciences.

Transdisciplinarity: as the name suggests, crosses different disciplines and works towards a common goal in a transformative way. Examples can be found in:

- Research intersecting the boundaries of two or more disciplines such as bioinformatics where information systems are dedicated to biomedical research.
- Concepts or methods that were originally developed by one discipline, but are now used by several others. Such is the case of ethnography, a field research method originally developed in anthropology but now widely used by other disciplines.
- Co-creation of projects which respond to specific societal challenges on the long term most of the time.

Transdisciplinarity is currently quite prolific as areas related to the digital, computer space informatics, are expanding at a very high rate. Various examples of its application can be found in research dedicated to Artificial Intelligence (AI).

As the definition of each concept is discussed, the participants arrive at a personal **self-reflection** of how they apply to their research.

A mention was also dedicated to the type of research programs that are currently financed. For instance, the EU Horizon 2020 is, increasingly funded projects join different disciplines towards innovation. Previously, this type of program would mostly fund areas related to technological developments, now it targets technological developments that support environmental as well as societal solutions.

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1.2.6 Conclusion day 1

There were 18 presentations of different PhD projects in the morning. Different facets of sustainability were addressed: cities, waste, computer science, energy, geoengineering, education, philosophy. The presentations were followed by an introduction to issues the participant PhD students (and generally speaking PhD students in sustainability) face in their research activities and their thesis.

Figure 6. Slide on the conclusion of the day

The conclusion surrounded issues related to the understanding of sustainability as concept. Each field of research approaches the concept in a different manner, and this greatly influences how sustainability is understood. This fact also raises questions surrounding the implementation of some research practices. As an example, the problem would start immediately at setting a robust ontology and epistemology of the research (i.e. how is the research anchored and what will be its application). And it would be extended to other issues within the research environment such as: time invested within research circles debating and agreeing on concepts (i.e. what is the meaning of sustainability?) in contrast with time

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dedicated in working on pragmatic solutions, those that will have a more direct impact in society's most pressing problems (i.e. water is an increasingly scarce resource, how will humanity cope with this challenge?).

1.3 Day 2 activities

1.3.1 Research pong

This was an informal communication exchange, co-organized between French and German participants. The exchange was composed by two games, that provided a good opportunity for the involvement and collaboration of participants from different backgrounds and universities.

1.3.2 Skribbl

Participants had to find words related to the discussions of day 1 sessions. As one participant draw a word, the others were required to guess the word illustrated in the drawing as fast as possible.

Fig.8 presents different participant attempts of *degrowth, industrialization, interdisciplinarity* and *sustainable development.* To the organizers, it was quite clear that while in the previous a discussion related to interdisciplinarity was not very efficient, in the second day, with familiarity between participants and a less-formal setting the discussion seemed to bring more voices to the table.

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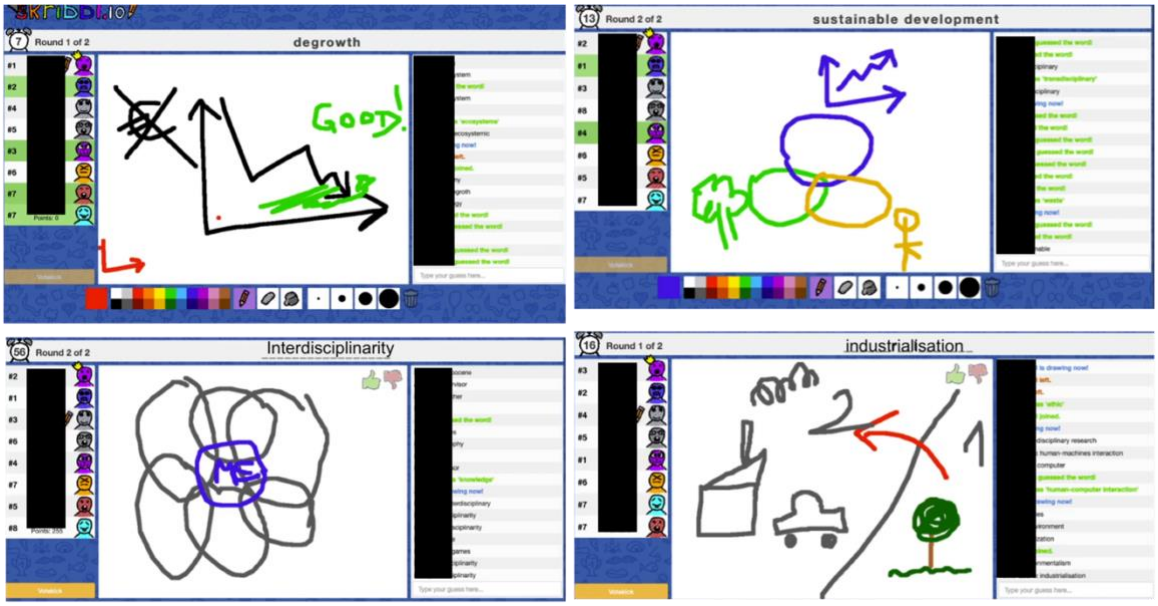

Figure 8. Representation of degrowth, industrialization, interdisciplinarity and sustainable development

1.3.3 Nobody is perfect

This session entered an even higher collaboration mode between participants. It consisted in:

- Separating the participants in 3 groups.
- A question related to the subject and theme of the Winter Seminar 2021 (WS 2021) was asked.
- Each group had to choose the answer they wanted to give to the question.
- A different layer of the game consisted in inducing other groups to choose the wrong answer.

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- Each team received points according to the answer chosen: exact answers (good point for the team that selected the answer), wrong answer (good point for the team that suggested the answer and that another team selected).

The activity was greatly enjoyed by many participants. Fig. 9 displays the tools used in the game.

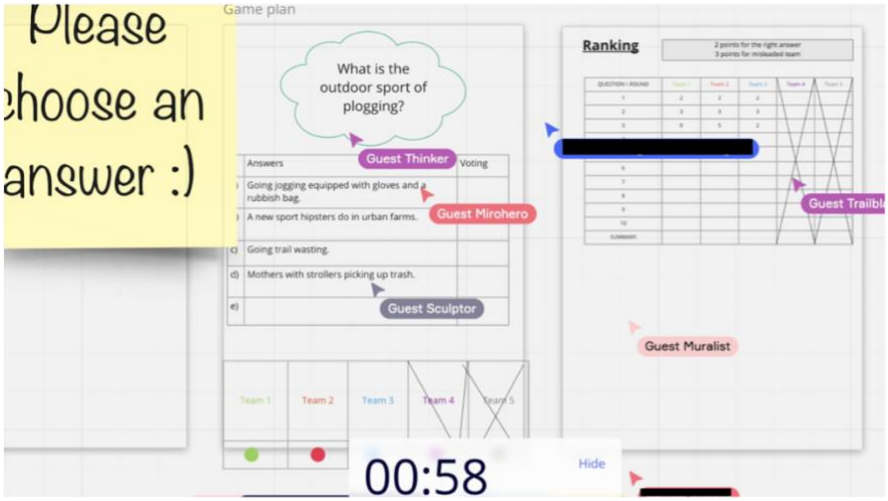

Figure 9. Board used for the "Nobody is perfect" game

1.3.4 Methodology

The session was divided in two subgroups that discussed different aspects of different research projects.

1.3.4.1 First sub-group

The exchanges that were made in this sub-group resulted in an even greater collaboration between the four PhD students that participated in it. One of the students presented her methodology and the difficulties related to it (i.e. she had already constructed a specific methodology that resulted in a framework, however it had received different responses from

different supervisors. Moreover, she questioned whether to insist on aspect A, aspect B, or aspects A and B of her methodology given that they were all related in some way in her research work).

Constructive advice from peers' own experience was given. The other three students advised on some techniques that have supported them as well in defining research objectives and purposes.

The session resulted in the set-up of a PhD support group among the 4 students. They shall meet once a month to discuss a challenge faced but also progress being made in their PhD. The group shared a common perception: the process of PhD project is a lonely one, however when sharing experiences with peers it becomes a less heavy burden. Additionally, considering the variety of communication tools available nowadays, sharing experiences can happen quite easily.

The idea regarding the support group is not so much to go into the strict content of the projects (unless it is desired) but rather to share doubts, possible alternatives as well as achievements. In the end, this group will certainly serve as a sharing group where there is space to understand that one is not alone.

1.3.4.2 Second sub-group

Table 2 presents the titles of the presentations during this session.

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Table 2. Names and titles of the methodological presentations

UTT	How to integrate social and ecological dimensions in early phases of complex technical projects? An approach based on the value perceived by stakeholders.
UTT	Sustainable value analysis in Sustainable Business Models at the Bottom of the Pyramid.

Discussions on:

- What are the indicators you are using to measure value and in what sense you are going to analyze value? Sometimes quantitative indicators are linked with money and now there are many other indicators to measure and analyze value. The answer relied on stakeholder value network (SVN) method.
- What kind of stakeholders does it take into account?
- How to deal with the fact that people have very different values? How to get a consensus with those different values?

1.3.5 Peer reviewing (PR)

Many papers were submitted from participants with the aim to receive feedback from their colleagues. Some papers had already been submitted. However others were relying on some of the seminar's reviewing before submitting. Each paper had 1 presentation session. Listening to each presentation were 3 to 4 participants. One person having fully reviewed the paper in advance would provide the initial feedback and another 2 to 3 participants who would contribute to a further discussion.

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Table 3, contains the papers reviewed by the participants. The description of each session is available in Appendix 1.

Table 3. Titles of papers submitted to peer-reviewing sessions

Name	Title of the paper	Published?
UTT	Gender, culture and the challenge of short-lived houses - a feminist political-industrial ecology Lens on the housing metabolism of postwar Japan and Norway	Submitted - waiting for reviews
TUDublin	Characterization of biochars produced from waste materials using batch pyrolysis and various temperatures	Submitted - waiting for the peer-reviewing process.
UTT	Descriptive study of the integration of sustainability in an engineering teaching unit	Accepted - in process
UTT	The "Non-Functional Analysis" concept to improve Value Analysis	Accepted - not published yet
UPCT	Does women's education impact the agri-food sustainability?	Submitted - waiting for the peer-reviewing process.
h_da	Analyzing the impact of wooden debris on scour and sediment transport	Already published before the WS.

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UTT	Exploring the cultural computing paradigm of sustainability to re-design interactive technologies to support the ecological transition	Accepted - not published yet
UTT	Construction of the mapping of CSR issues that can be managed during the design process - Application in the automotive industry	Accepted - not published yet
h_da	Optimisation of the treatment method for biological waste to produce bio-based products	Already submitted before the WS.
UTT	Misgivings is a key factor for Technocracy, Enlightenment from a Forgotten Geoengineering project of Melt the Arctic from 1967 to 1973	Will not be submitted.
UTT	Modelling Women's Living Conditions' in Violence using KM techniques	Already published before the WS.

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1.4 Conclusion of the Seminar and next steps

The conclusion of the seminar started with an exercise, where participants would identify the aspects they would like to keep for the next seminar and another two they would like to improve or change. Figure 10, illustrates a variety of answers resulting from this activity.

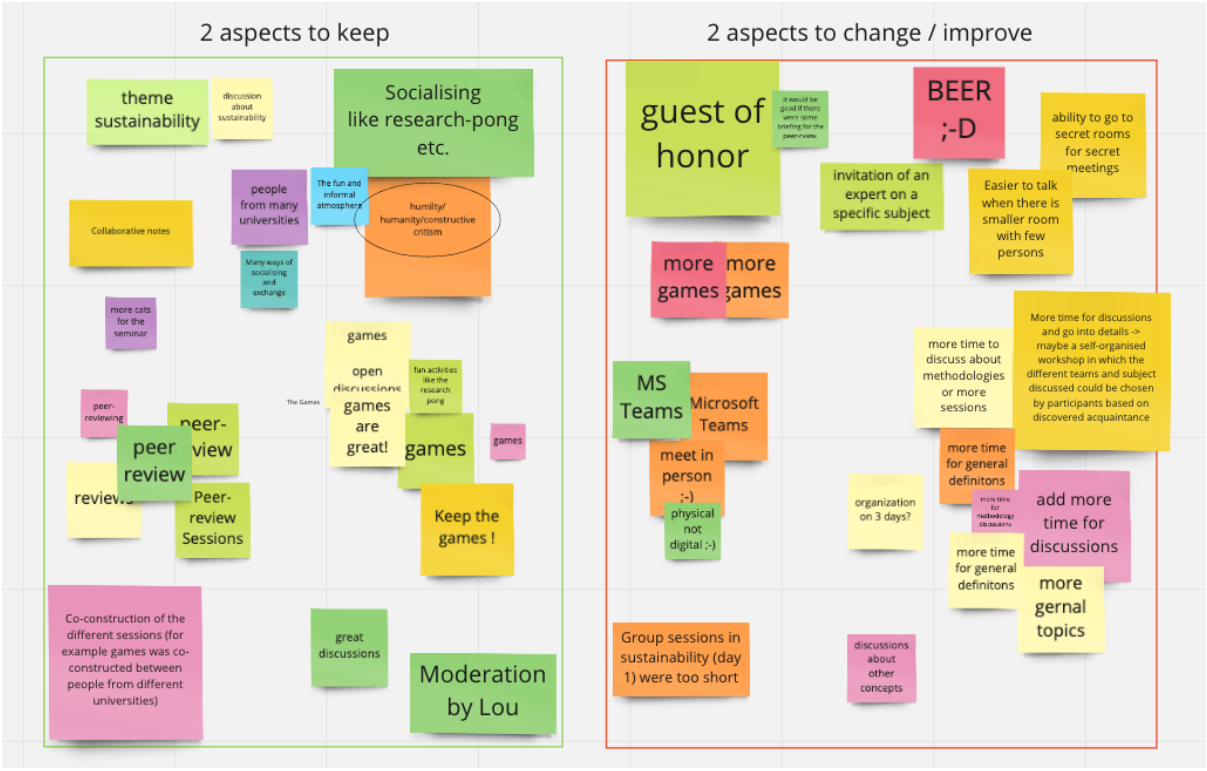

Figure 10. Feedback from positive and negative aspects of the winter seminar 2021

The wide board of ideas and suggestions highlighted the learning, the positive elements and the elements to be improved. The ideas were taken and re-structured in short, medium and long term objectives (see table 4).

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Table 4. Proposition of short, medium and long term activities

Short term - in the 6 following month	
Exchange	PhD support group - meeting every month
Exchange	Sharing papers and occasional seminars on specific subjects
Brainstorming	Creation of a pipeline of projects (https://pads.domainepublic.net/p/Pipeline_ideas_for_projects_and_initiatives)
Medium term - 1 year	
Common participation to international events	PubliER event in 2022 (https://recherche.utt.fr/interdisciplinary-research-on-society-technology-environment-interactions-insyte/interdisciplinary-research-on-transition-towards-sustainable-socio-technical-systems-creidd/events/publier)
Collaboration	Collaboration on little scientific projects (AScUS 2022 could be an option)
Long term - several years	
Collaboration	Collaboration on scientific projects (bilateral projects)

Co-production	Production of common scientific publications

Finally, it was recognised the great efforts and energy from the students who had also organised the seminar. Particularly those planning games and computer tools that contributed for the great signaling of outputs. More importantly, the great efforts put in place by the organizers to create valuable personal exchanges among the research students.

Collaboration and common projects have started between some of the participants, as well as some deeper specific and scientific exchanges.

Having in mind others who might feel this informal type of seminar is a worthwhile activity, a group of students joined to produce this synthesis in a clear and accessible format. It is an additional proof of engagement and dedication for the benefit of peers, which will hopefully benefit not only other students but to research in sustainability as well.

It is with great expectation and optimism that the authors await for the next seminar.

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2 Winter Seminar 2022

List of participants:

- InSyTE, CREIDD, Troyes (5)
- Digitale Medien, Darmstadt (1)
- Faculty of Civil and Environmental Engineering, Darmstadt (5)
- Human-Computer Interaction and Visual Analytics, Darmstadt (1)
- HDA, Darmstadt (1)
- UPCT (4)
- TU Dublin (3)

From this second edition, we could see that the 3 main institutions participating in this type of event are: the University of technology of Troyes, Darmstadt University of Applied Science, Technical University of Dublin. Some participants registered but were not able to attend (from the Technical University of Cluj-Napoca).

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Figure 1: communication did to PhD students within EUt+ network

Winter Seminar 2022 14th – 15th of March

14th March Day 1:

Hours	What?	What you need
8:30 am – 9:00 am	Opening the Meeting Letting everybody join	
9:00 am – 9:10 am	Presentation of the Winter Seminar 2022	Just a Coffee
9:10 am – 9:45 am	Integration activity (break the ice)	Fun
9:45 am – 10:00 am	Break	Another Coffee
10:00 am -	Presentation of your research	Presentation of 5 min
13:00 pm – 14:00 pm	Break	Something to eat
14:00 pm – 15:15 pm	Discussion table 1: Adaptability	Read the papers so we can have a rich discussion
15:15 pm – 15:30 pm	Break	And another Coffee
15:30 pm – 16:45 pm	Discussion table 2: Sustainability	Read the papers so we can have a rich discussion
16:45 pm – 17:00 pm	Break	Last Coffee
17:00 pm	Conclusion of the Day	

15th March Day 2:

Hours	What?	What you need
9:00 am – 9:30 am	Opening the Meeting Letting everybody join	
9:30 am – 10:15 am	Relaxing Game	A Coffee and fun
10:15 am – 11:30 am	Discussion table 3: Ethics	Read the papers so we can have a rich discussion
11:30 am – 13:00 pm	Break	Something to eat
13:00 pm – 14:05 pm	Paper-review	For the author a little presentation and the reviewer there review
14:05 pm – 14:20 pm	Break	Coffee
14:20 pm – 15:30 pm	Paper-review	For the author a little presentation and the reviewer there review
15:30 pm – 15:45 pm	Break	Coffee
15:45 pm - 16:30 pm	Closing/relaxion space	

Figure 2: precise programme proposed for the Winter Seminar 2022

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3 Future events

3.1 Winter Seminar 2024

Winter seminars are annually organized by PhD students, for PhD students. Thus, they are organized when a group of PhD students are available to organize it. As no PhD student was available in 2023, there was no edition this year.

3.2 Reading groups

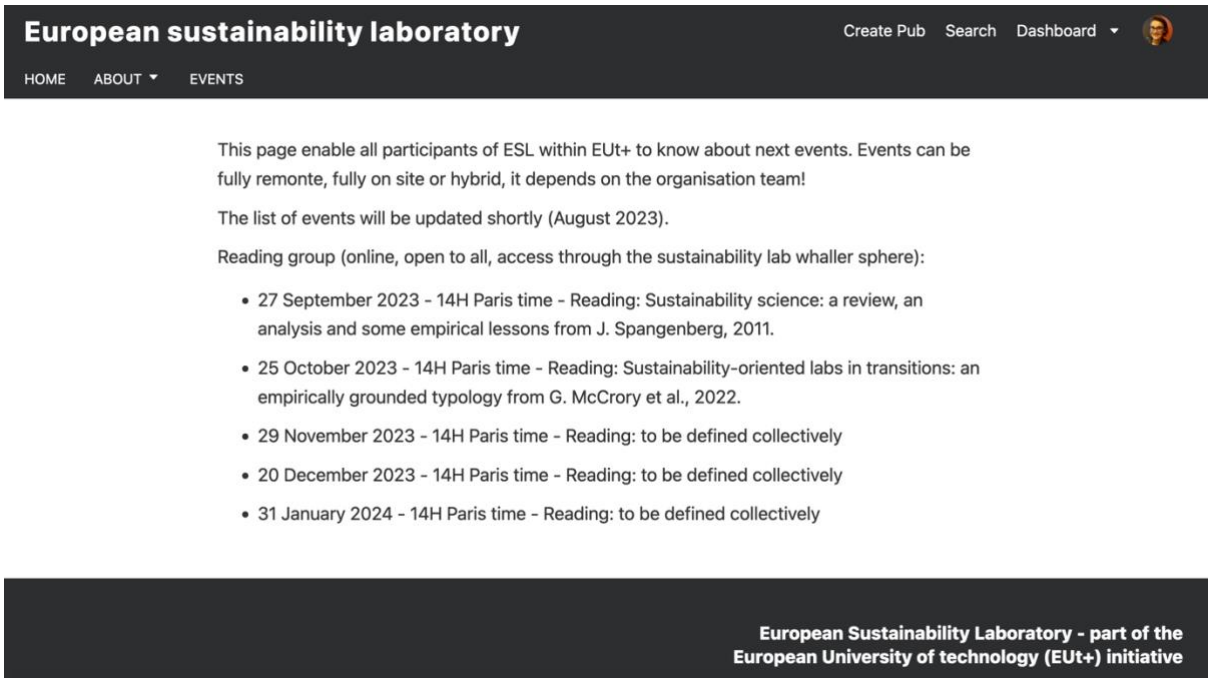

Figure 3: Futures events announced

Conclusion

This deliverable has described in detail how the PhD student workshop was organized, the useful outputs, the identification of values emerging from the conceptual discussion. The PhD students have been able to express their points of view, summarized below:

- The contribution of innovation to a sustainable society was crucial.
- There are many opportunities and challenges associated with the development of digital technologies.
- The political aspects and the needs for policies to frame a sustainable society.
- What the global strong sustainability should look like in order to enable a sustainable society to develop.

Overall, the discussion allowed the participants to share their knowledge and vision of sustainability and its associated concepts. It also contributed to an important insight: although sustainability was coincident factor in the majority of the participants' research projects, it did not mean participants had knowledge in the same areas nor the same depth of knowledge in each of the areas. This affected greatly their point of view. Here participants realized that communication on a topic with such diverse views is a serious challenge. Therefore, a real need exists to homogenize (or standardise) definitions of sustainability and its associated concepts, to clearly understand sustainability, to debate its complex framework of problems and possible solutions.

In line with the events described in D47 and D48, these type of events allow to create commons (concepts, values, practices), to serve as solid foundations in co-constructing ESLab+.

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Annex 1 – abstract of papers presented at the workshop

UTT - "Gender, culture and the challenge of short-lived houses - a feminist political-industrial ecology Lens on the housing metabolism of postwar Japan and Norway".

The presentation made by the author was very clear and precise; however, different comments were made to help Santiago do even better as a transdisciplinary article.

Some aspects could be added to render the article more easy to read and accessible for instance the analysis of the natural environment (access to natural resources, geography, geology, seismology besides weather conditions), natality related policies, explanation of sustainability as well as sustainability of housings and buildings lifespans.

It was also suggested to Santiago to explore life cycle analysis of materials, specific country's contexts that are dealt with in his article. Maybe even to push forward the impact on construction policies, energy policies, housing policies, health policies, social policies, gender policies.

Lastly, a mention was made on the title of chapters and paragraphs of the article. These could better reflect the path of the article (i.e. when one only read the titles, they know what is the skeleton of the article).

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TU Dublin "Characterization of biochars produced from waste materials using batch pyrolysis and various temperatures"

In this study, five feedstocks (peat, peat fiber, fine urban green waste and two types of brewery waste), as well as the resulting biochars were analyzed to present a clearer picture on how pyrolysis at various temperatures affects the properties of the produced biochars.

The discussions were driven by the main peer-reviewers and were mainly related to the technical elements on biochar processes.

UTT "Descriptive study of the integration of sustainability in an engineering teaching unit"

The paper was presented by 2 PhD students. It focused on pedagogical circumstance. Represented a model of interactions between a technical system, human organizations and the biosphere, through the life cycle steps of a technical system. This system was tested as a pedagogical tool. This model was called the H-TS-N. The analysis grid was the competences of sustainability for engineers (Quelhas, 2019).

Two elements were discussed during the session:

- the different notions of the model such as the concepts and the type of representation (a table) used.
- clarifications about the techniques of collective interviewing were given as well as on how the authors collected information on the competences of students (questionnaires).

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UTT "The "Non-Functional Analysis" concept to improve Value Analysis"

This paper deals with the Non-functional analysis concept to improve Value analysis. During the peer reviewing session:

- Many comprehension questions were asked, as the participants were not very familiar with the concept of Value analysis. For instance, the author was asked if he could illustrate functional and non-functional analysis through concrete examples.
- The main reviewer, made detailed comments about the form and content of the article. He said that the quotes were wisely chosen, and that he would have liked to have a visual representation of the author research methodology (sketch or graph).
- A comment pointed out the fact that there were few data in the case study, to which the author answered that due to privacy issues all the information could not be shared in the article. This is a common issue for PhD projects with an industrial application.
- There were some questions about the value analysis methodology itself, like about how the decisions are made at the end of the value analysis application, or to what extent the value analysis approach is used.

As a conclusion, the author mainly got comprehension questions about value analysis, its application and the difference between functional and non-functional analysis. He says himself that even if the peer reviewing session was useful and interesting for him, he did not have a real opportunity to step back on his article – or more generally on his research – because the participants were not sufficiently familiar with his topic to provide detailed advice and questions. This can be seen as a limit of this kind of peer reviewing sessions: when people from too different fields exchange with one another, it can either be an opportunity to get a

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wider vision on a research topic, or it can be a challenge to get to understand each other. In this case, it would have been too time-consuming for the participants to really get to know the author's research topic in order to make a detailed review.

UPCT - Does women's education impact the agri-food sustainability?

The article shows that women in agriculture play a role, but that they are often present in low-level positions and have little training in technologies for agriculture. Thus, women have little room for action. The article uses the linear regression method to show that better education of women in technology would achieve some of the sustainable development goals (SDG 2, 4, 5 and 10). A lot of exchanges came out :

- The different parts of the article were called with general terms ("introduction", "materials and methods"). Some recommendations was about giving more explicit names to make sure the reader can see the dynamic of the paper.
- The balance between technology, gender gap and agri-food system were questioned. The word technology doesn't appear in the title of the paper whereas it has an important place in the demonstration. Maybe the balance between the three domains could be explicited through a diagram in the introduction.
- The introduction is very long, it could be interesting to restructure it with maybe sub-parts.
- It could be great to explain the scope of the technology analyzed in the article : does it concern all the different technological tools of the agri-food system or only some?

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H_da - Analyzing the impact of wooden debris on scour and sediment transport

The paper focuses on river restoration and more specifically on the woody debris technique to improve the ecological function of these rivers. The issue is the level of uncertainty associated with the woody debris technique.

The discussion was more an explanation of the goal and structure of the paper to the peer-reviewers because none of the peer-reviewers read the paper before the session. Thus the session was quite poor in recommendations for the author.

UTT - Exploring the cultural computing paradigm of sustainability to re-design interactive technologies to support the ecological transition

The paper was dealing with the cultural aspect of computing and how sustainability could be considered as a specific cultural context.

A first discussion on the technical aspect of cultural computing was taking place. Some discussions about potential examples of cultural computing were discussed. Three elements were discussed:

- A gap between the beginning of the introduction (the question asked at the beginning) and the demonstration of the paper is observed. The introduction would have to be modified a little in order to have a real coherence throughout the paper.

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- A better link between sustainability and cultural context needs to be made. Indeed, it seems that the link between sustainability and cultural context needs to be more explicit. Is it necessary to define strong or weak sustainability in a sustainability paper?

UTT - Construction of a methodology to map the CSR issues that can be managed during the design process - Application in the automotive industry

This paper was presented by Anne-Laure, and deals with the development of a methodology to map the CSR issues that can be managed during the design process, with an application in the automotive industry. Indeed, there is a lack of alignment between the CSR strategy of companies and the design process, mainly due to the lack of comprehension of the relationship between CSR issues and the design process. This mapping methodology should help companies to better understand this relationship. During the peer reviewing session, there were several exchanges:

- Some questions were asked about the choices made to define the scope of the research (like the reason why Anne-Laure decided to focus on companies dealing with complex systems), and about the methodological choices.
- Some of the participants shared their experience regarding some aspects that they had in common with Anne-Laure's research (like the part of the mapping methodology dealing with conducting interviews to gather information). This confrontation was very useful to identify the strengths and limits of each approach, and to be aware of the potential biases.
- Some more general questions were asked about the choice of methodology for the global PhD project of Anne-Laure, or about the choice to focus on Design For Sustainability approaches instead of other approaches.
- Finally, some advice was provided to Anne-Laure to help her think about a way to evaluate the success of her research, and the relevance of the methodology she is developing.

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As a conclusion, this peer reviewing session helped Anne-Laure to step back on her article but also on her global research project. She identified the choices she needed to justify more or maybe rethink. She managed to confront her work with the experience of others, and to take into account exterior points of view regarding her research.

H_da - Optimisation of the treatment method for biological waste to produce bio-based products

The paper is dealing with the anaerobic treatment of biological waste. The bacteria involved in the experiment are specialised in the process of ethanol-acetate fermentation to form medium chain carboxylic acids. In the aerobic treatment of biological waste defined in the paper, the issue is about the 10-15% of the input substrates which are not degraded. The paper suggests a way to optimize the overall process.

The session led to discussions around those biological waste management and on the structure of the paper. One of the main suggestions of the peer-reviewers is the need to split the paper into two different papers to have only one main message by paper.

UTT - Misgivings is a key factor for Technocracy, Enlightenment from a Forgotten Geoengineering project of Melt the Arctic from 1967 to 1973

All the participants highlighted the richness and the variety of subjects and ideas that the author covered in her paper. She offered to look at geoengineering from an historical point of view, illustrating by this way that the idea of a man able to master and reshape the global climate was not new and takes root notably in the Cold War, in the particular climate of fear, misgivings balanced with the wonder and hope for the power of technology of this period. She developed the example of a project of the Soviet Union at the end of the 1960's: a dam to be

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built in the Bering Sea in order to alter ocean currents and melt down the Arctic. These consequences were thought as bringing various strategic advantages for the Soviet Union. Through this example, she positioned the geoengineering in regard to the Russian cosmism influenced by the work of Vernardsky that had impacts as well in America, due to the work of Teilhard de Chardin. This historical point of view allowed the author to highlight the relative ignorance, the limitation of science for predicting the consequences of such initiatives to reshape the climate. She developed the idea of fear as a driver for a faith, an obsession for the capability of technology to solve our problems. All of this points to a certain caution to be observed in our approach of geoengineering and the idea of a boundary between man and nature that should be respected. This particular idea of a boundary raised questions during the exchanges, it was highlighted as a point to be developed and precised: what kind of boundary, what does it mean and induce for geoengineering? Kunzhang introduced and questioned as well a metaphor between geoengineering and medicine. A part of the exchanges we had focused on this idea, we thought this metaphor very interesting and that it could be a way to introduce a contrast between the Western culture of America and Europe and the Asiatic one, especially the Chinese one that the author knows best. The idea was expressed that developing the contrast between Western medicine and Chinese medicine could lead to a new perspective on geoengineering, instructed by the Chinese tradition. The exchanges finally concluded on the same idea on which they had started: the richness of the article, the potential of different ideas within and the possibility to write not only one but several articles going deeper into these different ideas.

UTT - Modelling Women's Living Conditions' in Violence using KM techniques

The presentation of the author was clear. Some additional comments can be made on why she used a documentary film as a case study and not written articles. She has also been

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questioned on better definitions of integrism and more details about the definition of impact of male role and traditions on women's life experiences.