JUST2CE

A Just Transition to Circular Economy

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WP3 - Towards a framework for a Responsible CE

National participatory (co-creation) workshops report

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A Just Transition to Circular Economy

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Project Duration: 2021/09/01 – 2024/08/31

Coordinator: Universitat Autònoma de Barcelona (UAB)

Associated Beneficiaries:

1. UNIVERSITAT AUTÒNOMA DE BARCELONA
2. UNIVERSIDAD DE VIGO
3. THE UNIVERSITY OF SHEFFIELD
4. UNIVERSITA DEGLI STUDI DI NAPOLI PARTHENOPE
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JUST2CE

A Just Transition to Circular Economy

PROJECT No. 101003491

JUST2CE will assess the current state of transition towards the circular economy in relevant economic sectors and analyse possible transition scenarios, as well as their outcomes and impacts. It will identify the key factors that can stimulate or hinder this transition. Natural resources are extracted and transformed into products, which are eventually discarded. As many natural resources are finite, it is important to keep materials in circulation for as long as possible. This makes the transition to circular economy more vital than ever but is a responsible, inclusive, and socially just transition to a circular economy possible or even desirable? What technical, political, and social factors can enable or hamper such transformation? The EU-funded JUST2CE project will answer these questions. It will explore the economic, societal, gender and policy implications of the circular economy paradigm. The project's findings will shed light on how to ensure democratic and participatory mechanisms when designing and managing such technology.

History Chart

Version	Date	Implemented by
1.1	27/07/23	Revised by Mario Pansera (UAB)

Disclaimer

List of abbreviations

CE	*Circular Economy*
RRI	*Responsible Research and Innovation*
WP	*Work Package*

Contents

1. Summary

In this deliverable we present the co-production workshops conducted in Greece, United Kingdom, South Africa, Spain and Italy which were intended to produce a number of scenarios to implement a transition to a CE and reflect about the technology and political actions that should be implemented to achieve them in each specific national context. The workshops involved the associated partners of JUST2CE as well as members of civil society, industry representatives, academic and policy makers, implementing future-oriented methods such as horizon scanning techniques, scenario building, and transition design. This report is divided in five parts; each part for each country.

2. Background

JUST2CE is based on the initial assumption that a critical evaluation of the CE paradigm, of its economic, societal, gender and policy implications, and of the outcomes of its implementation has not been conducted yet. A direct consequence of this gap is that the political economy and geopolitics of transition have been neglected in CE studies. European, and more in general global productive systems are characterised by geographical specialisation that seek to maximise profits along the traditionally designed linear supply chains. These, often unequal and asymmetric, relations might seriously hamper the transition to a CE.

JUST2CE aims at understanding, in critical and thoughtful way, under which conditions a responsible, inclusive and social just transition to a circular economy is possible and desirable, what technical, political and social factors can enable or hamper such transformation and how these aspects can contribute to the development of transitional policy measures. The conviction underpinning the project is that the success of a transition towards a sustainable circular economy does not merely depend on the development of new technologies - artefacts or processes - but also in the reconfiguration of the governance of productive processes into more democratic and participatory mechanisms of designing and managing technology.

Both the available literature and the findings of WP1, WP2, and WP3 shows that the CE has been generally presented as a techno-based solution that would be able to combine the imperative of economic expansion that characterises the neoliberal capitalist mode of production, with environmental concerns. Nevertheless, such a framing of circularity remains highly contested. According to an increasing number of scholars, this manifestation of a CE is likely to be scientifically unsound, it over emphasises the role of technology and it almost totally neglects the social aspects of transition such as gender, labour and global environmental justice. The framework developed in WP3 overtly challenges the dominant framing of CE by drawing on the principles of RRI, and presenting them as a means for embedding the CE as a wider societal transformation attuned to values and visions of justice. It aims to provide conceptual guidance to imagine a just CE transition which strikes a balance between the desire for openness in setting normative values across broad stakeholder groups, whilst confronting the complexity of operational issues and policy support. Thus, the framework encourages alternative thinking and reflection, and the consideration of perspectives from a wide range of stakeholders and contexts.

Due to the multi-scale nature of the CE, there are numerous stakeholders relevant to the transition. By addressing diverse groups' specific needs and experiences, localised networks emerge as collaborative platforms that can influence transition plans and actions. Collaborative discussions should cultivate political groups in order to gain legal recognition of self-determination on a global scale (Urdezo et al., 2022). When significant interactions among policymakers, industry, and society groups are established, the necessary technical, financial, and political resources may initiate a just CE transformation. A just CE should aim to identify all relevant parties, i.e., a wide range of agents and consequently, a wide range of liabilities. Inclusivity in the context of the CE has two dimensions. First is the participation of the people who are directly involved in the production process, for example workers having a voice in processes and decisions that determine practice. Second is the participation of the groups that can be potentially impacted by the CE transition process,

such as public society or local communities. Furthermore, as many people as possible should be informed of the findings of an evaluation of CE practices. The specific social groups to be addressed determine the involvement and communication tactics. Future technology design and selection shouldn't be limited to a well-educated and articulate elite. Furthermore, increasing stakeholder engagement in decision-making extends beyond direct interactions with public entities and the business sector. Scientists, public society, and non-profit groups have several opportunities for enhancing cooperation for a just transition to a CE. Establishing trust is essential to understanding and incorporating the diverse needs and roles of different stakeholders in establishing collaborations and local leadership in this process.

In this context, with the aim to create a number of scenarios to implement a transition to a just CE and reflect about the policy actions that should be implemented to achieve them, 5 national workshops were organised in Spain, the UK, Greece, Italy and South Africa implementing future-oriented methods such as horizon scanning techniques, scenario building, transition design. The workshops involve the associated partners of JUST2CE as well as members of civil society, industry representatives, academic and policy makers. This report documents preliminary findings from these national workshops.

3. The workshop in Greece

Purpose of the workshop

The workshop's objective was to prepare a preliminary version of a skeleton of future images in transition to a just CE and to reflect on the technology and political actions that should be implemented to achieve them in each specific national context. The aims were to create a number of scenarios to implement a transition to a just CE and to reflect on the technology and political actions that should be implemented to achieve them in each specific national context. Overall, the participants consisted of members from all parts of the quadruple helix (Government, Civil Society/Academia, and Industry).

Overview of the workshop structure

The structure of the workshop in Greece was based on desk research regarding the tool of Horizon Scanning through evidence-based literature. After identifying and monitoring relevant issues, trends, developments, and changes in circular economy the SEERC team created a list of current trends and a small description of their meaning in society. These trends included possible future scenarios of present socio-environmental issues or movements towards a more environmentally friendly ideology. To generate foresight, the first part of the workshop was focused on assessing and understanding the selected policy challenges and the second was directed at identifying specific policy actions for realizing desired futures.

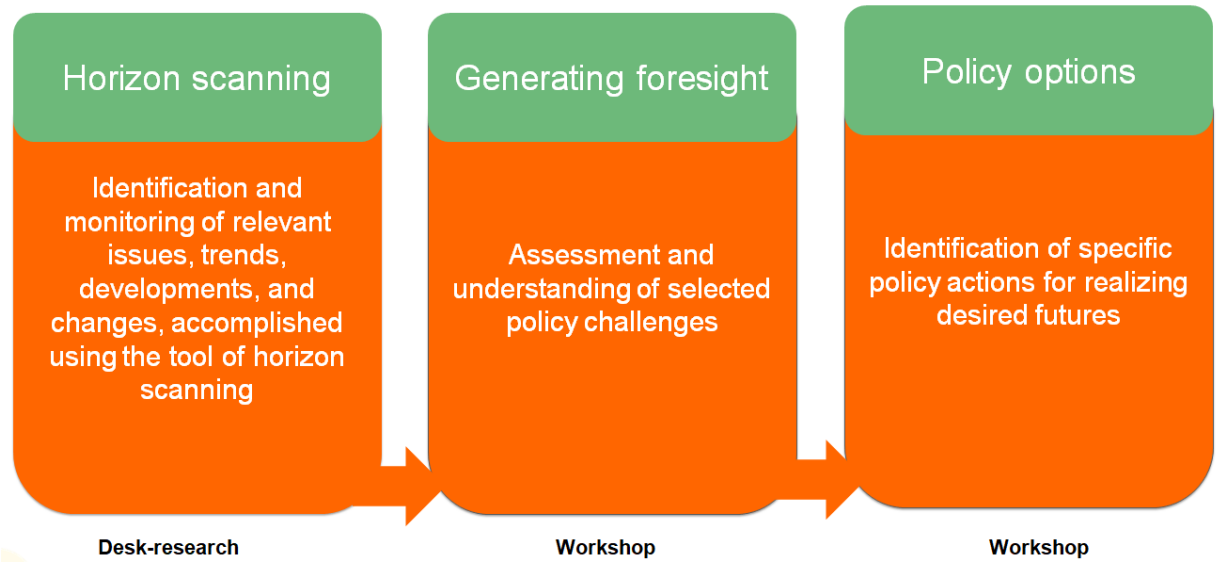

Figure 1 Adapted from: Schultz, Wendy L. (2006). "The Cultural Contradictions of Managing Change: Using Horizon Scanning in an Evidence-Based Policy Context." Foresight, 8(4), pp. 3–12.

The SEERC team also decided to conduct the workshop in collaboration with two local organisations in order to reach more people, as well as have more fruitful results. The two organisations chosen were Mamagea and InCommOn. Mamagea is an environmental organization whose mission is to upgrade everyday life in cities, the social and urban

environment. They conduct bioclimatic-technical studies and projects for buildings and public places. They carry out educational and participatory workshops for children and adults, as well as citizens ' mobility networks and cultural activities. They create information campaigns for critical environmental and social issues, and design and propose policies to reconstruct a city of the future. InCommOn deals with the circular economy through community activation and envisions more circular cities and neighbourhoods. Starting from the neighbourhood scale and with key pillars of its actions, active communities, creative solutions and inclusion and equality, seek to achieve a change of habits at a community level in the present and deeper city-level mindset change in the future.

Opening Remarks and Introduction

The Greek workshop was conducted in the multi-space of WE, Thessaloniki, a distinctive, youthful, multipurpose venue that promotes culture and sports and aspires to be a meeting point for creative and active people, as well as a source of inspiration for a different lifestyle, new urban behaviour and culture.

In the Greek workshop, there were more than 50 individuals invited and 25 showed up, 8 of which were men and 16 were women. There 5 members from the government helix, 9 from civil society and another 11 from the industry. Despite most of the participants knowing each other from previous projects and programs, everyone was given a name badge and assigned to a team (environment, society, economy). Everyone was also given a piece of paper for an icebreaking that followed after the check-in, where we wrote some information about ourselves, such as our anime and a couple of our interests. Then we moved around the space getting to know each other and afterwards, we folded our papers into any shape and put them together randomly on the floor. We formed a circle around it and discussed what that shape reminds us and if we can see a specific image created from various perspectives. The participants seemed to enjoy this theatrical-based activity and were more comfortable expressing themselves than in the beginning.

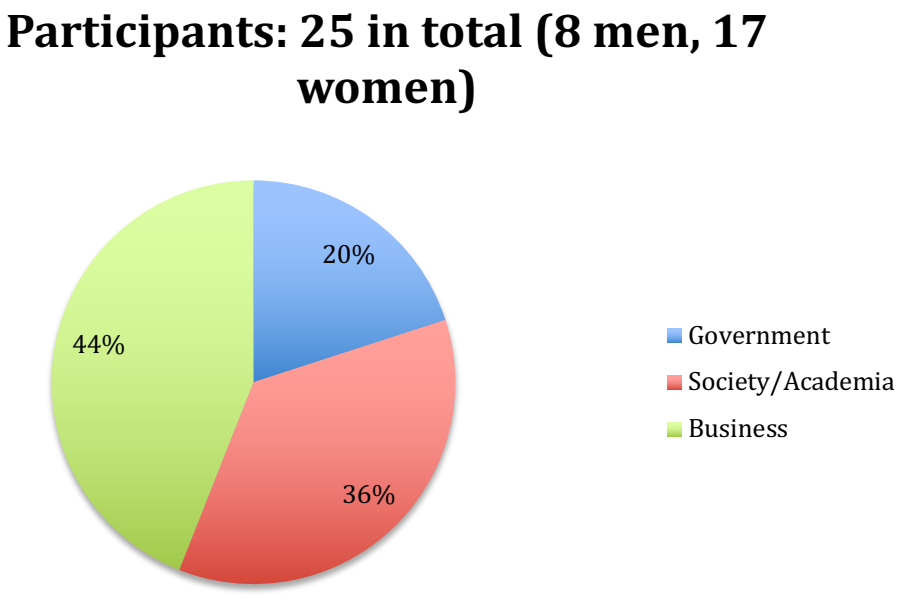

Figure 2-3 Closing the ice-breaking activity everyone was seated in their teams and the moderator of the workshop Nikos Zaharis, director of the South East European Research Centre, presented briefly the JUST2CE project and the aim of the workshop.

Session 1: Generating Foresight

In the first phase of the workshop participants were asked to read through the trends and identify their probability and impact. Each team was given a different set of trends, according to the context of the environment, society and economy. The teams discussed and collectively pinned the cards to the board (see the image below). The cards also acted as subjects of discussion, where many expressed their knowledge and experience on the topics. After locating the trends in the Probability-Impact matrix, the participants determined the High Probability and High Impact trends.

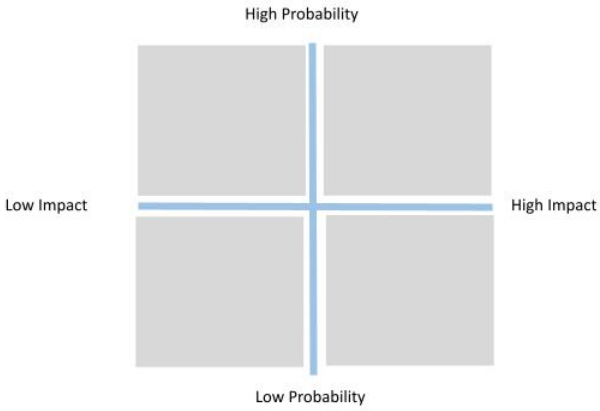

Figure 4 Impact-Probability matrix

These specific trends were analysed in a second activity, where their impact was assigned as positive, negative or neutral. Some trends were more difficult and complex to be assigned with a specific category of impact, but the teams debated and finally decided together on the most rational scenarios. The results were presented to the other teams. The implications of the first phase were collected to be further explored in the second phase.

Figure 5-7 The participants of each team assessing the trends on the matrix in the first activity and then presenting their input regarding the type of their impact.

Session 2: Policy Options

The second phase of the workshop consisted of establishing possible policy options for a better future. Based on the previous discussions, the participants brainstormed suggestions for all groups of the Quadruple Helix. First, they came up with several policy suggestions and afterwards, they decided who will be able to accomplice these actions; policymakers, civil society, industry and/or academia. The policy options were presented to the rest of the teams.

Ethics

The participants were invited by formal emails and they were informed about the context and aims of the workshop. On the day of the workshop, they were provided with consent forms regarding photos being taken. In the next days, they were also sent emails to confirm their contact information being shared with the rest of the participants to connect for future events.

Workshop Outcomes

General outcomes

Most participants had experience in the field of environmentally friendly practices and sustainability, with some also in circular economy. They are active members of the local community, taking part in many projects and events with a similar context. Another facilitating factor was also the fact that most of them were acquainted due to the aforementioned reasons. The conversations were productive and many opinions were expressed regarding the current issues and possible future

scenarios. Most participants felt that the need to further the conversation to have a more effective outcome, but overall they seemed satisfied with the structure of the workshop and the results. Many stayed after the checkout to informally chat with each other regarding current actions that are taking place in the country.

Key outcomes by session

The environment group consisted of 6 women and two 2 men and its formation included local government officials, civil society representatives and business employees. It is important to mention that all participants had experience in environmental projects, organisations, legislation, etc. and with few exceptions most of the issues were known to them. In the first part of the workshop participants discussed and then ranked most scenarios - trends (green) cards in the quadrant of the "High impact-High probability" table. The "High impact-Low probability" quadrant was what collected the remaining cards. This demonstrates their belief in the criticality of environmental issues. The possible scenarios to be implemented mainly had a negative environmental impact or related to topics such as greenwashing while the scenarios with a low probability of implementation related to fair, inclusive and transparent procedures. In the second part, they ranked several of the given cards according to the type of impact they will have (positive, negative, neutral). They divided equally 4 cards positive and 4 negative and no cards in the column of neutral. Overall, the group worked together harmoniously, following a circular flow of speech. Some members spoke more to share experiences and illustrate some cards. They were actively involved and seemed to fully understand all stages of implementation.

The economy team consisted of 4 men and 6 women, and the participants had a lot of knowledge and experience with sustainable SMEs. Based on that background, they highlighted the struggles of their efforts in the activities. The conversation was vigorous and a couple of participants with a lot of experience were very vocal, but overall, there was respect and everyone had the chance to interact with the rest of the team. Some the trends were divided into quadrants and the ones that were considered High impact-high probability had mainly possible negative impact. These trends focused on resource scarcity and the concentration of multinational corporate power. These topics initiated a conversation about the current global inflation and the inhibiting factors for change. There was an atmosphere of pessimism due to that immense phenomenon and the plethora of issues our society is facing. Nevertheless, the team made an effort to come up with practical solutions and analyse the possibilities for the future.

As for the last group, the society group consisted of 3 men and 5 women who had different backgrounds but all were familiar with sustainable practices. The reporting of the results begun with the trends and the distinction of these trends based on the probability of their occurrence but also on the magnitude of the impact they may have. The final ranking of trends found participants to have placed 50% of the options in the Quadrant corresponding to High Impact/High Probability with the content of these options being broad, e.g. 'Increased government regulations and incentives for cyclical practices', 'increased intensity in the conflict mineral extraction sector'. At the same time, only one of the trends was selected to be placed in the low Impact/Low Probability quadrant. The choice to place each trend came mostly unanimously from the team members, while for some options there was little disagreement. Continuing with the second act of the workshop, participants were asked to correlate these eight trends they ranked in the high Impact/High Probability quadrant with a range of possible impacts and to define the sign of each trend –impact toward society.

Foresights and policy recommendations

In the first activity, we analysed current trends based on Probability-Impact Matrix. The participants were called to discuss and decide collectively the position of each trend on the matrix. The society team determined that greater efforts for equality and social inclusion belong to the “low impact-low probability” quadrant. The “low impact-high probability” quadrant remained empty. In the “high impact-low probability” quadrant, the participants included decentralisation, the growing impact of technological developments on jobs, solutions derived from collective actions of

the community, conscious capitalism, and increased cooperation and partnership between stakeholders. Lastly, the “high impact-high probability” quadrant gathered most of the trends including the following:

- Increasing awareness and demand for sustainability and resource efficiency/ Increased consumer sentiment for sustainable products/ Rise of localism
- Increased focus on health and wellness
- The growing global population and its impact on resources and waste
- Increase government regulations and incentives for circular practices
- Increased urbanisation
- Digital transformation
- Changes in working patterns
- Increased tension in the conflict mineral extraction sector
- The progress of women
- Increasing levels of in-work poverty

The society team divided the trend's possible outcomes into three categories. On the positive, the possible outcomes were considered to be:

- Improved health and well-being from reduced exposure to waste and toxins
- Political institutions become more important, democratic and redefined so they impose global cooperation to restore the environment.
- Improved access to resources and job opportunities for marginalized communities.

The negatives were:

- The difficulty of vulnerable groups in accessing the resources necessary to participate in the circular economy (such as technology and education).
- Growing inequality and insecurity.
- The push for greater fairness and equity in the sharing of benefits from technological advances and the sharing of responsibilities.
- Wars and armed conflicts related to the control of mineral-rich areas are a thing of the past as renovation, urban mining and recycling become the most important source of materials in the industry
- Increased need for inequalities and balances in access to resources and opportunities.
- The only neutral outcome was considered to be shifting jobs for workers in traditional linear industries.

The economy team had an extensive discussion regarding the trends. In the “low impact-low probability” quadrant they put the increased level of youth unemployment and increased sanctions for lack of climate action. The “low impact-high probability” quadrant included demographic and economic development in Africa Carbon markets and the number of emissions trading schemes around the world is growing. In the middle of this quadrant and the “high impact-high probability” quadrant, they assigned the emerging forms of extraction and exchange, as they were unsure of how this will develop in the future. The “high impact-low probability” quadrant consisted of advances in technology and secondary production primarily replaces primary production. Most importantly, the “high impact-high probability” quadrant consisted of:

- Increasing scarcity of resources and increasing the price of raw materials
- Continued global economic growth and consumption
- The rise of China and other Asian economies, accompanied by socioeconomic changes
- Increased concentration of power by international companies
- The emergence of new business models, such as the sharing economy

The economy team assessed the trends into the three categories as follows. The positive were:

- Increased need to address systemic inequalities and imbalances in access to resources and opportunities.

- The energy industry converges with many related industries to develop efficient and environmentally friendly solutions.
- The push for greater fairness and equity in the sharing of benefits from technological advances and the sharing of responsibilities.
- Increasing awareness of the importance of participation in marginalized and under-served communities.
- Improving economic stability and reducing poverty through circular practices.
- Increased access to affordable and sustainable goods and services.

The possible outcomes with a negative impact were:

- Return to the era of economic nationalism, isolationism and protectionism.
- A large volume of materials, especially fossil fuels, are used for energy production.
- Uneven regional distribution of young/old demographics.
- Growing inequality and insecurity.
- Return to the era of economic nationalism, isolationism and protectionism.
- The difficulty of vulnerable groups in accessing the resources necessary to participate in the circular economy (such as technology and education).
- Increased competition in the market for small businesses.
- Environmental degradation in vulnerable communities.
- Economic inequality is due to the unequal distribution of the benefits of the circular economy (perpetuation of existing social and economic inequalities).

Lastly, the only neutral outcomes were considered to be:

- More immigrants (internal and external).
- Increasing global unrest and political activism.

The environment team assessed the trends of intensified climate action, reduction in energy consumption, supply of renewable energy, the need for technologies that enable the breakdown of complex atomic structures and upgraded food as “high impact- low probability”. In the quadrants of “low impact-high probability” there was only the trend of continued growth in global plastic production and in the “low impact-low probability” no trends were added. The “high impact-high probability” quadrant gathered the rest of the trends:

- Human resource consumption and derivatives from coal use continue to rise
- Carbon offsetting continues to exist
- Need for disclosure of data and knowledge related to climate change
- Increase in energy consumption
- The impact of climate change is now evident-effects in global warming and changes in weather patterns due to human activity
- Increased commitment to net zero targets
- Increased commitment to stopping deforestation by major food and agriculture companies
- Increase in " Greenwashing”

The environment team divided the trends only into positive and negative. The positive outcomes were:

- Carbon emissions are starting to fall without undermining corporate profits.
- Increased awareness and education on the importance of sustainability and circular practices
- The energy industry converges with many related industries to develop efficient and environmentally friendly solutions.
- CO2 levels in the atmosphere stop rising and stabilise.

- The push for greater fairness and equity in the sharing of benefits from technological advances and the sharing of responsibilities.
- The need for transparency and accountability in supply chains to prevent exploitation and human rights violations.
- Political institutions are becoming more important, democratic and redefined to enforce global cooperation to restore the environment.
- Reduce environmental risks that disproportionately affect low-income communities.
- Improved health and well-being from reduced exposure to waste and toxins.
- Increased need to address systemic inequalities and imbalances in access to resources and opportunities.

The negative impact was:

- Degradation of the environment in vulnerable communities.
- Increasing global unrest and political activism.
- Growing inequality and insecurity
- A large volume of materials, especially fossil fuels, are used for energy production.
- Increased competition in the market for small businesses
- The difficulty of vulnerable groups in accessing the resources necessary to participate in the circular economy (such as technology and education).
- Increasing need to tackle climate change by reducing greenhouse gas emissions.

Policy Recommendations for Environment	**Civil Society**	**Policy Makers**	**Academia**	**Industry**
Financial benefits for those who follow the National Climate Law and incentives for organic farming.	**x**	**x**		**x**
Establishment of a national panel on climate change and promotion of "citizen science".		**x**	**x**	
Create zero-emission urban bubbles, increase green spaces within the city and boost public transport.		**x**		
Obligation to publicize the ingredients of environmentally friendly products and information about greenwashing.	**x**	**x**		
Policy Recommendations for Economy	**Civil Society**	**Policy Makers**	**Academia**	**Industry**
Upgrading the role of civil society.	**x**	**x**		

Support for alternative entrepreneurship.		x	x	x
Strengthening and promoting innovation and open standards.			x	x
Hybrid models of employment, housing and circularity in processes.	x	x	x	x
Safeguarding citizens ' rights and social cohesion.	x	x		

Policy Recommendations for Society	**Civil Society**	**Policy Makers**	**Academia**	**Industry**
Training of employees and reduction of working time.	x	x	x	x
Integration of marginalised groups in the public and private sector with increased quota.	x	x		x
Raising awareness and informing citizens, tightening legislation and enforcement control regarding environmental consciousness.	x	x		
Financial incentives for sustainable practices.		x		x
Make love not war.	x			

Comments and Conclusions

Regarding the part of the operation of the group, we can mention two elements. One concerns the bit of time, which appeared not to be enough to allow participants to fully process the set of both trends and impacts. The second piece concerns the ability to interpret the content given to participants. Due to the fact that the desk research was conducted in English and the material needed to be translated into Greek, there were some phrases and etymologies that did not have an exact translation in the latter. The choice of words used and the way they were presented in the cards may have made it difficult for the members of the group to comprehend some topics, while some members seemed to not recognize certain terms at all (e.g. Nuclear families, Greenwashing). This led the team's facilitators to take the time to explain the terms and concepts. If we wanted to compare the level of mood and participation of the team members between the 1st part of the workshop (trend distribution/ impact analysis) and the 2nd part (policy recommendations), then we could say that in the 2nd part, in which the members had the opportunity to develop their views from the beginning, the participants were even more expressive and the interaction at the table was even more fruitful.

4. The workshop in Spain

Purpose of the workshop

The purpose of the workshop was twofold. From one side, to present the JUST2CE research project to different actors of the circular economy sector in Catalonia and Spain. On the other side, the workshop aimed at collectively foster the debate and the exchange of experiences and knowledge among the participants on a just transition to circular economy at a national, regional and local level.

The overall aim of the workshop activity was to debate about the different scenarios of implementation and transition towards just economic models, the policy and stakeholders' actions needed for their implementation in Catalonia and Spain, and the role of technology and society in these processes. The workshop also delved into how gender inequalities, labour unjust relationships and social interactions can be improved to guide the just, inclusive and socially responsible transition towards circular economy.

The workshop activity as a whole, together with the findings of the previous survey and conducted interviews, helped considerably to gather valuable information for the project, which will undoubtedly enrich the different research groups and WP's activities.

Figure 8 The entrance of the workshop in Sant Pau Recinte Modernista,Barcelona.

Overview of the workshop structure

- **Pre-workshop survey**

It should be noted that the completion of a previous activity in the form of a survey helped the future conceptualization and implementation of this workshop.

In order to better understand the knowledge of different actors in the sector about the elements of social and environmental justice that should guide the just transition of circular economy, a survey was carried out and distributed among various stakeholders some weeks before the organisation of the workshop. This exercise allowed to obtain two types of results:

a. On the one hand, to gather specific quantitative data on the average knowledge of the concept of just circular economy among regional and local actors.

b. On the other hand, and based on the answers given, the survey enabled to extract clearer conclusions on how to organise the workshop sessions, and some of the answers given by the respondents served as facilitating elements when carrying out the parallel sessions. In this way, the survey greatly helped to structure the different elements discussed in the three thematic blocks of the parallel working groups.

The quantitative results and findings of the above-mentioned survey can be seen in detail in ANNEX C.

In addition, a total of 6 interviews of approximately 30 minutes were conducted with different representatives from the public, private and academic sectors, who discussed in more detail the topics covered in the survey and workshop. The qualitative answers given in the interviews, together with the results of the workshop and the survey, will help guide and structure the development of a future policy brief outlining the main findings and outcomes of the workshop held in Spain.

- **Workshop**

The workshop gathered up to 50 actors and stakeholders, including representatives from the public sector, private sector, academia and civil society. In relation to time and structure, it lasted a total number of 5 hours and it was divided into three main sessions, including a half-hour coffee break.

The first session took place over the course of an hour. Welcoming remarks were given by Mr. Isaac Peraire, Director of the Waste Catalan Agency (ARC), which were followed by an Opening Plenary were the concept of JCE was introduced by Mr. Mario Pansera, leader and coordinator of the JUST2CE project. Following this introduction, a successful case study from Barcelona was presented by Ms. Nuria Sau, Project Manager at Andròmines. Lastly, Mr. Jeremie Fosse, Director of Eco-Union -associated entity responsible for the execution of the previous survey- presented the main findings of the survey exercise and how they related to the topics covered in the workshop.

During the second session, which lasted 2 hours, the co-creation parallel working groups took place, where participants were divided into 3 working groups in order to discuss, reflect and exchange ideas on the three very specific points:

1) The concept of just circular economy (JCE);

2) Drivers and challenges to achieve a just transition;

3) Proposals and actions that would help to foster a just transition at a local/regional/national level, and the different transitional scenarios in the near future;

Each group was coordinated by 2 organisers, who were in charge of energising and guiding the group sessions, and the groups were composed by 16 participants. The aim of this division was to create a trustful space for debate and interaction between the participants so that they could exchange their ideas, remarks and experiences. The groups had a 50% gender

parity and were formed by representatives from different professional and sectorial backgrounds in order to have a broader and mixed representability from the private and public sector, academia and civil society in the three groups. In addition, the 3 groups had a similar number of representatives from each sector of activity (textile, plastics, agri-food, waste management, water, technology and innovation...).

Following the working groups, a closing session was held to present the results and discussions that took place in the parallel working groups, where representatives from each of the groups showcased the different reflections and main findings.

The programme of the event can be found in ANNEX A.

Figure 9-11 Mr. Isaac Peraire, Director of the Waste Catalan Agency (ARC) & Ms. Nuria Sau, Project Manager at Andròmines.

Opening Remarks and Opening Plenary

At the beginning of the workshop, different interventions were made to contextualise the JUST2CE project and to further explain the concept of JCE. The workshop was opened by Mr. Isaac Peraire, Director of the Catalan Waste Agency, who underlined how the Catalan Regional Government is committed to supporting both financially and politically the circular and social economy initiatives that take into account the social and environmental factors of sustainable consumption and production, as well as emphasised the need for greater communication and interaction between the different actors and agents in the value chain of waste management.

Afterwards, the coordinator of the JUST2CE research project, Mr. Mario Pansera, introduced the project and underlined key aspects of its aim, including partner members, budget, timeline, activities and main outcomes to achieve by 2024. Mr. Mario Pansera explained the rationale behind integrating elements of social justice in the development of circular economy activities by acknowledging the mainstream technocratic approach and pointing out that those transformations that only focus on technological innovation fail to achieve environmental and social development goals, specially affecting vulnerable groups such as women or youth. In that sense, Mr. Pansera explained that technological innovation should go hand in hand with social innovation in order to move towards socially and environmentally just production processes. In addition, Mr. Pansera stressed the necessity to take into account the geopolitical variables of a just transition of the circular economy, as well as the need to put an end to the unjust relations that govern the capitalist system and the circular economy system that is to be put in place, especially in terms of gender, labor, democratic and geopolitical issues. As pointed out by the speaker, the circular economy is not just an environmental agenda, and its social and economic benefits are yet to be fully embraced, despite the importance of this topic.

This introduction was followed by a presentation carried by Nuria Sau, Project Manager at Andròmines. During her speech, she presented the successful case of the social entity Andròmines and underlined how its organisation integrates elements of social justice in its main types of activity, e.g., material and waste recovery and management. This presentation aimed at showcasing to the audience the case study of an organisation that fully embraces the concept of just circular economy, what helped participants to grasp a first-hand idea of the JUST2CE's object of study.

Before concluding the introductory session of the workshop, Mr. Jérémie Fosse, Director of Eco-union, presented the results and main findings of the surveys conducted prior to the workshop. Mr. Jeremie Fosse mentioned that the survey was conducted among 30 participants from different sectors and fields, including the agri-food, waste, textile, industry and packaging sectors. In general, the speaker mentioned that all respondents had a high knowledge of the concept of Circular Economy, while they have a medium-low knowledge of what Just Circular Economy means or aims at (see ANNEX C for further information).

Figure 12-15 Mr. Mario Pansera, leader and coordinator of the JUST2CE project.

Parallel Working Groups

Once the participants were divided into three parallel groups, each group followed the same structural sequence, i.e. all participants dealt with the questions included in three thematic and discussion blocks, where they were able to exchange opinions and share their experiences.

- **First Block: Concept and elements of the Just Circular economy**

The first block pillared upon the question of the concept and main elements of JCE. The following questions were raised to the participants to discuss and contribute with their ideas and visions:

- *How familiar are you with the concept of Just Circular Economy?*

    - *None*
    - *A little*
    - *Good*

- *Very good*

- *What are the most important aspects you associate with the Circular Economy?*

  - *Waste reduction and management*
  - *Resource optimisation*
  - *Eco-design*
  - *Technological innovation*
  - *Cost and Supply savings*

- *Which elements should be integrated into the concept of Just Circular Economy?*

  - *Combatting Global North-South unfair relations*
  - *Social inclusion*
  - *Local knowledge and action at the local level*
  - *Gender mainstreaming*
  - *Governance*
  - *Social innovation.*

Attendees were encouraged to answer these first 3 questions using the MentiMeter online application. The group results of the questions were displayed on a monitor in the room visible to all. This allowed the actors to visually see to what extent the other participants were familiar with the concepts of economic circularity and its integration with social justice aspects.

- **Second Block: Drivers and Challenges to the just transition**

For the following thematic blocks, participants were divided in two sub-groups of 8 people and were provided with markers and post-its to answer their questions and write down their conclusions and key ideas. To facilitate the exercise, the top options selected by respondents in the pre-workshop survey were shown on the whiteboard, nevertheless, participants were encouraged to identify other facilitators and challenges beyond those pre-visualised in the survey. Participants were encouraged to ask the following questions.

- *Which elements can hinder the development of the Just Transition to Circular Economy? And which factors can facilitate this transformation?*

  - *New production models, use and optimisation of resources*
  - *Financial support for start-ups, SMEs and innovative companies*
  - *Shortage of materials*
  - *Green taxation*
  - *Synergies of services, entities and sectors*

- *Consumer awareness*
- *Enhancing and exploiting local knowledge*
- *International collaboration and information sharing*
- *European regulation*
- *Greenwashing*
- *Lack of competitiveness of the circular economy compared to the linear economy*
- *Lack of public and political leadership*
- *Classical economic models of extraction and continuous growth*

Once the questions to be answered were proposed, the two dub-groups were given a maximum of 30 minutes to answer and write down their answers on post-its. At the end of the 30 minutes, a representative of each group presented the results and findings to the group participants, while inserting the post-its on a whiteboard.

This subdivision and set-up mechanism allowed participants to jointly create a list of discussed and specific measures of barriers and enablers to take into account on the implementation of just circular economy scenarios. This exercise provided a space for debate and reflection among participants, while fostering the discussion to focus on specific issues.

Figure 16 Part of the exercise with the thematic blocks of facilitators and challenges.

- **Third Block: Proposals and Actions to the just transition / Future Scenarios**

The same format and structure were followed in the third block, and the same sub-groups discussed the following questions while were asked to propose some measures and proposals to address the challenges they had identified in the previous block. In addition, the participants discussed possible scenarios for the implementation of a sustainable future of the

circular economy at local and regional level in Catalonia depending on the development of concrete policies and legislation.

The questions they answered and worked on in sub-groups were the following:

- *What proposals and initiatives do you think should be undertaken to facilitate the implementation of Just Circular Economy scenarios*
- *Which scenarios do you identify for the medium and long term?*

Finally, again a representative of each group explained the conclusions and main findings to the group and added them to the blackboards with post-its.

Figure 17- 24 Participants during the activities of the two blocks, analysing Circular Economy.

Closing Plenary

During the final plenary, the results of each parallel group were presented around the three blocks mentioned above (see Section 9 for more information).

The representative of the Parallel Working Group 1 was Mr. Jeremie Fossse, while the representative of Group 2 was Carolin Massen, researcher at the Autonomous University of Barcelona (UAB), and of Group 3 Mr. Matias Ibáñez, Project Manager at MedWaves and coordinator of the WP6 of the JUSTCE Project.

Figure 25-26 Final plenary session.

Ethics

In order to attend the workshop, participants were informed of the need to fill in an online registration form created by the workshop organisers on ethical requirements and data protection. By registering for the workshop through the form participants accepted the following terms and conditions:

- *Terms and Conditions – Workshop - Data Protection*

By submitting this registration form, I agree that my personal data provided herewith - name, gender, organization & contact details - may be used for reporting purposes of the JUS2CE programme in accordance with the General Data Protection Regulation (EU) 2016/679. I give my agreement voluntarily and for the period of time essential for the purpose of the processing of my personal data (at least 5 years after the project end date). I am aware of the fact that, I have the right to revoke this agreement at no cost at any time, the right to access to my personal details, the right to their correction or deletion, and the right to block any incorrect personal data.

In addition, a paragraph on image and video collection and data protection was included on this online registration:

- *Image and video collection*

Please note that photographs and videos can be taken at the event. JUST2CE may publish such footage for non-commercial purposes on its website, in publications and presentations. By submitting this registration form, the participant the participant agrees and gives his/her consent to collect images and record the different sessions of the event.

Last but not least, the respondents of the pre-workshop survey also were asked to accept the above-mentioned terms and conditions when filling in the online survey.

Workshop Outcomes

General outcomes

The following is a summary of general outcomes of the Workshop. We could divide the key results around three main identified axes:

- **Representativeness axis**: The workshop gathered 50 participants and representatives from the public sector, business organisations and private companies, the technology and innovation sector, the academia and civil society.

In this sense, we can highlight that the workshop had a successful representativeness, and the vast majority of stakeholders in the circular economy sector at the local and regional level were represented. In addition, among the participants were also representatives of the different sectors of activity of the circular economy such as recycling or waste management organisations, the agri-food and textile sector, industry, innovation technology, water treatment/supply or electronics, among others.

For instance, and as a matter of example, at the level of public institutions the workshop gathered representation from various departments of the Regional Government of Catalonia, the Barcelona City Council and the Catalan Waste Agency. In addition, at an academic level, the workshop had a significant number of representatives from a large number of universities in Catalonia, such as the Autonomous University of Barcelona, the University of Barcelona, the University of Vic, the Polytechnic University of Catalonia or the Research Institute for Sustainability, Science and Technology.

- **Participation axis:** The workshop was a success at the level of participation, since all the actors and participants involved actively participated in the parallel sessions and discussion groups. The debates were very fruitful in terms of proposals analysed and challenges identified, and food for thought was provided in different aspects of the JCE that will undoubtedly enrich the results of the JUST2CE project.

- **Impact axis:** At the end of the workshop, many of the participants highlighted the successful organization of the workshop, and recognized the need to work more in depth on social justice issues from a cluster approach, as it was proposed throughout the workshop. Bringing together representatives from public and private organizations and institutions, but also from different sectors of activity, and make them debate in groups for several hours on key elements of climate and social justice, gender issues, North-South relations, innovation and technology, unfair labour relations or social and solidarity economy, was very enriching both for the participants and for the organizers of the workshop in terms of results obtained.

Key outcomes by session

- **Plenary Opening**

Apart from presenting the JUST2CE project by the coordinator Mr. Mario Pansera, it was positive to present a case of success in just circular economy as it is the case of Andromines. This helped the attendees to land on the concept and put a face to the integrating elements of social justice in the transition to the circular economy.

- *Andròmines is a social entity that employs vulnerable groups in situations of exclusion to work on circular economy-related activities. Their services are mainly focused on waste management, repair and reuse activities. Some examples of activities Andròmines takes part in are technology repair, management of waste*

management points, selective waste collection in companies, or collection of bulky, textile and electronic waste. Andròmines aims at fighting against exclusion based on the dignity and equal opportunities of people and protect the environment through defense of the environment and sustainability. Their teamwork and vision makes Andròmines a reference organization in the integration of people in situations of exclusion based on training, work and the creation of spaces and activities that protect the environment and promote the autonomy of people.

In addition, analysing the results of the survey (see Annex 3 for further information) helped attendees to better understand the subsequent exercise of the parallel groups and concept of JCE, since many of the topics that would were touched upon in the thematic blocks were already identified in the survey.

- **Parallel Working Groups**

The following is a summary of the key findings of the workshop resulting mainly from the group discussion dynamics of the co-creation sessions, also known as Parallel Working Groups. The questions and dynamics posed to the groups were aimed at finding out the level of familiarity of the participants with the Just Circular Economy concept and how they understood it. Secondly, the objective was to encourage participants to jointly identify elements that could hinder or facilitate the development of fair circular economy practices. And thirdly, to identify initiatives proposed by participants to foster the just transition to the circular economy while identifying different future scenarios.

1. About the concept of Circular Economy and just Circular Economy

Regarding the concept of just circular economy, participants seemed to have a medium-high knowledge of it. It is worth noting that, when compared to those who responded to the online survey prior to the workshop, the level of familiarity with the concept was higher (60% at the workshop vs 40% at the survey). In all groups was indicated that this situation was due to the initial interventions that were made during the Opening Plenary session that introduced the JUST2CE research context in more detail.

They were then asked about the core elements that nowadays integrate the CE concept, and the majority of participants in the three groups selected as first option the element of waste reduction and management, followed by resource optimisation and eco-design. As last options, participants selected technological innovation, cost and supply savings.

Lastly, when asked about the elements that should integrate this future just transition of CE, most people selected the category combating global North-South unfair relations as the first option, being followed by social inclusion as second option and local knowledge and action at the local level as third option. These three top priorities were followed by gender perspective, governance and social innovation.

2. Barriers and Enablers

The following is a list of those elements and factors identified by the participants in all three different parallel groups that can act as barriers or facilitators in developing just transitions towards new circular economic models.

- **Barriers:**

a. **Lack of understanding** both at a consumers and producers' level of the relationship between the social, environmental and economic impacts of the current production model. Generally speaking, it was pointed out on several occasions that there is a **notable absence of awareness and training at all levels of society on the social and environmental impacts of production chains**. This leads to a disconnection between the producer, consumer and waste manager, and also leads to a lack of understanding of the real costs of the linear economy.

b. Entities and companies are often **unable to integrate the three pillars** (social, environmental, economic) **into their future strategic planning**. Many initiatives have interesting ideas, but after a short period of time they fail to integrate these concepts due to the great complexity involved and elevated costs.

c. **Greenwashing** of companies or entities can ultimately have a negative impact on the circular economy concept and hinder the development of truly circular and socially just entities. Throughout the workshop, it was pointed out on several occasions how the national collection schemes managed by some private companies in Spain are developing greenwashing campaigns.

d. The **lack of regulation** and the laxity of EU directives limiting the linear economy may hinder the emergence of alternative models that eliminate or reduce waste generation. As an example, it was indicated that collective systems of extended responsibility are not sufficiently binding and are not appropriately standardised. The need to regulate practices such as planned obsolescence was repeatedly mentioned.

e. **EU taxonomy** may prove to be a double-edged sword for the development of Just Circular Economy scenarios when it comes to determining which practices or products can be classified as circular or not, or whether this includes social justice parameters.

f. **Deficit of knowledge and lack of clear certification on the socio-environmental impacts of the costs of producing a new product**.

g. The public sector currently lacks adequate **indicators** to benchmark fair circular economy practices.

- **Enablers and Opportunities:**

a. There are currently **experiences of circular economy** that integrate aspects of social justice and that can represent a good starting point to extend its practice, such as consumer cooperatives, cooperative supermarkets, resource banks, living labs, product sharing activities, among others.

b. There is a **growing culture of cooperation** between sectors and new companies that are more aware of environmental and social issues.

c. **Increasing reporting on activities and their impacts at different levels** from companies, governments and organisations, in the context of Next Generation Funds for instance, is a good element that improves accountability and makes visible the environmental, social and economic impacts of certain activities at the EU level.

Foresights and policy recommendations

Throughout the workshop, some proposals and action points were put forward and identified among participants to facilitate the development of fair circular economy scenarios. The main policy proposals and recommendations gathered in the framework of the different parallel working groups are summarised below:

a. Encourage and support the emergence of fair circular economy initiatives through **sustainable public procurement and service acquisition** that prioritises the acquisition of socially fair and environmentally sustainable and services.

b. There is a need to promote a **multidisciplinary perspective** and develop **multi-stakeholder synergy spaces** (such as Hackatons, Living Labs or Circular product markets) as well as to foster **knowledge transfer programmes and industrial symbiosis projects** among national stakeholders.

c. Deploy **green taxation systems** to promote the internalisation of environmental and social costs through taxation for entities that operate in linear production models. At the same time, **fiscal benefits** should be given to those entities and initiatives that incorporate circular economy practices and integrate aspects of social justice in their daily activities.

d. Promote **eco-innovation and eco-design approaches** at all stages of the design, manufacturing and production processes.

e. EU and national regulators should develop a comprehensive set of **public policies and rules** to make linear production models less economically competitive, as well as topics such as **planned obsolescence** should be addressed by EU regulators in future Circular Economy Action Plans.

f. **Creation of a public body** dedicated to identifying and denouncing **greenwashing practices** and corporate social and environmental abuses.

g. Promote public initiatives that gather key stakeholders and citizens as a means to develop **shared and joint roadmaps and indicators** for the fair development of circular economies.

h. Integrate **informal workers** in the waste management sector, such as urban collectors, and **promote public initiatives to incentivise the formal economy of circular activities.**

i. Invest in **interdisciplinary research** in research centres, universities, companies, administration and citizenship aimed at visualising and raising awareness on the social and environmental impacts linked to certain production and economic processes along the entire value chain, from the resource extraction phase to its disposal and treatment as waste.

j. Encourage **collaboration between different actors** operating in same value chains to meet specific environmental and social justice objectives.

k. **Identify successful cases of entities that integrate social and environmental elements** in their business model at national level and give them greater and public recognition.

l. Improvement of the **current practice around the labelling of products**. Producers should add information on the environmental and social cost of their production and transportation to the final consumer.

m. Develop **targeted raising-awareness and educational activities** that promotes the benefits of the circular economy among the youth in schools, high schools and universities while promotes a change in the consumption models of citizens.

n. Define **clear and comprehensive indicators of circular and fair economy** in order to establish clear references and targets to be achieved by citizens and private sector.

o. Financially **support workshops and awareness-raising activities for companies** on the benefits of circular economy practices and sustainable consumption and production models.

Comments and Conclusions

Apart from the results, outcomes and main findings already highlighted above, a key and truly innovative aspect of this workshop was the **multi-stakeholder or cluster approach** that guided the different sessions and discussions.

Several participants acknowledged the valuable aspect of this type of gatherings and workshops where representatives of various sectors of activity, and especially public and private representatives, gather to discuss, debate and assess common challenges and opportunities in the field of circular economy. Given the fact some representatives form the Catalan Government and the Catalan Waste Agency were present, participants from private sector, academia and civil society were able to discuss and interact first-hand with policy-makers and implementing bodies on the current state of the circular economy at the local and regional level while discussing different policy actions. From these conversations, and together with the other proposals already mentioned, participants acknowledged the need to further promote public-private collaborations in the field of eco-innovation and sustainable production and consumption and to better connect academia, research institutions and civil society organisations with policy-makers through the creation of co-decision spaces.

Undoubtedly, the truly positive aspect of this workshop in terms of the results obtained was the high representativeness of the various activity sectors of circular economy at national and regional level, as well as the active involvement of participants in the debates and co-creation sessions. The creation of synergy spaces and forums where it is possible to speak, dialogue and assess the steps to be taken towards a just transition to the circular economy is deeply in line with the objectives of the JUST2CE project.

5. The workshops in South Africa

The South African workshops took place in Cape Town (14/03/2023) and in Johannesburg (30/03/23), organised and implemented by the African Circular Economy Network (ACEN). Different sectors were represented during the workshop and in total 56 stakeholders including facilitators were present during the workshops.

Framing South Africa's Context: Purpose of the workshop

The circular economy is increasingly gaining popularity across South Africa, where policies and legislation are being developed to promote it. However, the circular economy is widely seen as a waste management and recycling approach rather than a holistic tool that might productively break silos and connect stakeholders across communities, sectors, and government departments. While the concept of a just transition is common in other related contexts such as the energy sector, the social dimension of the proposed circular transition, which plays a particularly important role in a country with one of the world's highest Gini Indexes (63 in 2021), are currently given little attention in relation to the country's circular economy agenda.

The country has a below global average circularity of 7% and is dominated by an extractive economy, whereby raw materials are mined and then exported, which has also led to a low stock-build up hampering the development of required infrastructure (von Blottnitz et al., 2021). Further the economy is heavily dependent on fossil fuels mostly locally mined coal and imported oil (von Blottnitz et al., 2021). The activities of the informal waste sector in the collection of specific packaging materials lends itself towards more circular practices. The country also has a large part of bio-based flows however production and all the steps leading up to the end-of-life stage are challenging (e.g., unsustainable agricultural practices, food waste, inadequate bio-cycling at end-of-life) (von Blottnitz et al., 2021).

The Council for Scientific and Industrial Research (CSIR) has identified five sectors that have a great potential in transitioning to a circular economy (Nahman et al., 2021). While mining, agriculture, manufacturing, mobility and human settlements are economic sectors, two cross-cutting sectors namely water and energy were also identified (Nahman et al., 2021). In the latest light of permanent and daily rolling black-outs which affects water supply, stable and sustainable energy has become a permanent challenge to the country. Each sector was addressed in briefing notes which can be accessed online.

Even though the briefing notes speak to the development opportunities that can be enabled through a circular economy, a deeper dive, especially into the just aspect of the circular economy within the South African context has not been investigated. The aim of the workshop was to explore which political, technological and other actions are required to transition to a just circular economy in South Africa.

Overview of the workshop structure

The in-person, half-day co-creation workshops invited an extensive and diverse set of stakeholders using ACEN's database and advertising through the ACEN network. The program can be found in Annex A and a list of participating organisations and their respective sectors can be viewed in Annex B. Arriving participants were registered and could freely chose on which round table they wanted to sit (Photo 1). This section summarises the workshop content.

Opening Remarks and Introduction

In the introduction, the participants were welcomed and introduced to the facilitators stationed at each of the tables. ACEN's project partner, the University of the Western Cape's DSI/NRF/CSIR Chair in Waste and Society was also acknowledged and Professor Rinie Schenck, who leads the chair, was present during the Cape Town workshop. Before contextualizing the JUST2CE project, the aim of the workshop, process and ethical guidelines were explained. Attendees were informed that information and feedback gathered from the workshops would be used to draft a report, policy brief and a Master's Thesis. An additional outcome of the workshop included the drafting of a paper for the Trade and Industrial Policy Strategies (TIPS) Forum (01/08/2023-02/08/2023).

Session 1: Overview of JUST2CE (recorded)

Dr Andrea Jimenez from the University of Sheffield provided an overview of the JUST2CE project, introducing the motivation behind the project, all consortium members as well as the different work packages. The recording can be made available upon request.

Session 2: Circular Economy in South Africa

Katharina Gihring, the project lead from ACEN, gave a brief overview of the circular economy and its progress in South Africa. The circular economy was explained as a concept first before connecting its potential on how it can address some of South Africa's most pressing challenges, while also questioning the current narrative. Key outcomes of the presentation were that the circular economy needs to integrate the social dimension, especially in a developing country context, where development is crucial to also create socio-economic development e.g., building of infrastructure, while at the same time applying sustainable practices. Creating awareness and understanding of this concept is of high importance, while also creating a space for critical discussions on what the circular economy can and cannot do.

Introduction to Decision-Support Tool (recorded)

Professor Andrea Genovese presented on the decision-support tool to raise the participants awareness of this deliverable and to gauge interest to test and provide feedback on the prototype once developed.

Roundtable Discussions

The roundtable discussions had a duration of nearly 3 hours and were structured according to an adapted emerging transition design approach by Irwin (2018). The aim was to actively engage the participants. Firstly, reframing was conducted which was split up into two exercises. Secondly, back casting was conducted to create a transition pathway to a just circular economy.

Reframing – Step 1: Creating a problem map

The aim of the first step was to get participants to think about the just dimension and map out current challenges by creating a problem map. The leading question was posed on 'how do we achieve a just Circular Economy transition in South Africa?' within the following dimensions:

- Political

- Economical
- Sociological
- Technological

Participants would note down challenges on sticky notes and put them down on paper sheets (Photo 2). It was quickly noticed that even though dimensions were provided that most challenges overlapped and could fit into multiple dimensions. The intention was that participants discovered shared and opposing understandings.

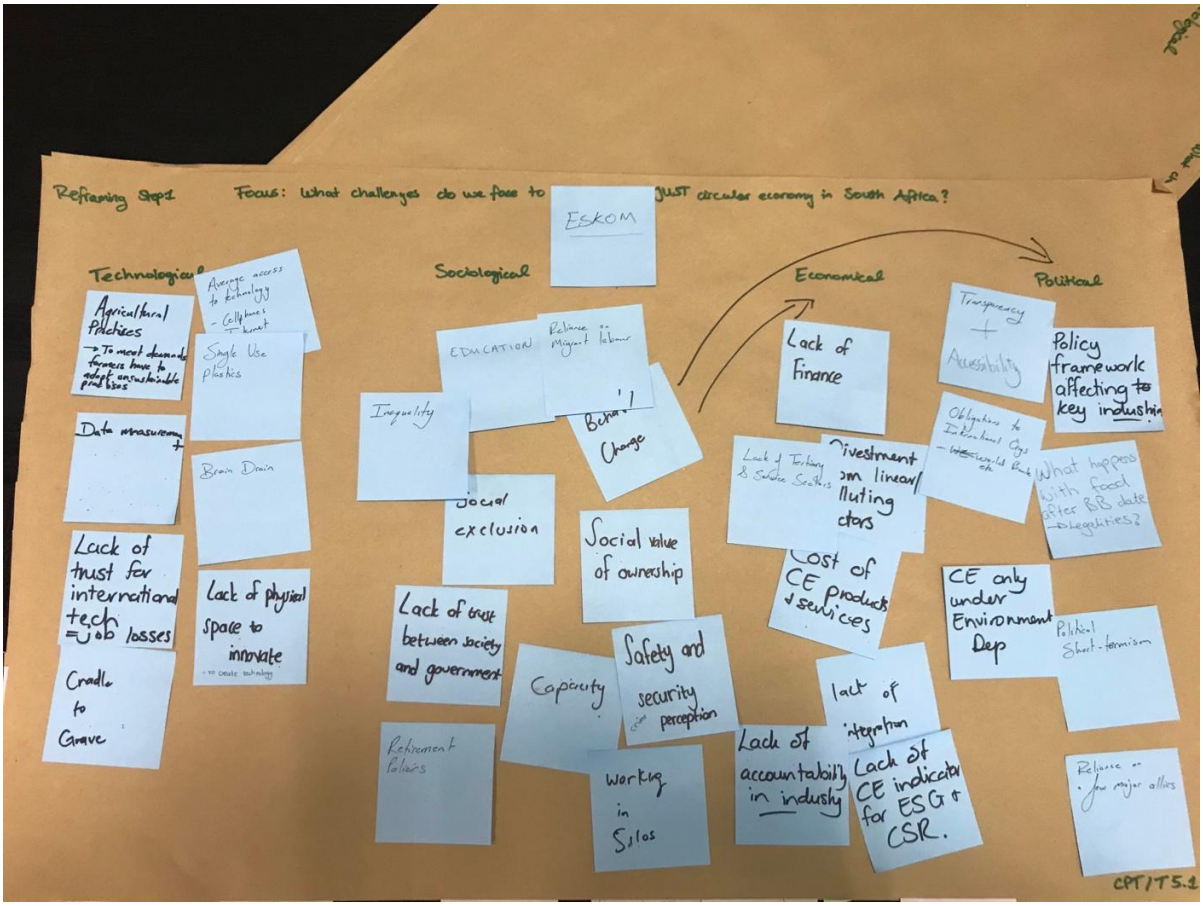

Photo 27 - A problem map from one round table.

The collected data was digitalised and then analysed according to content analysis (Bengtsson, 2016). Table 1 gives an example of grouped categories for each dimension.

Table 1 - Content analysis based on the first step of the reframing exercise.

Technological Challenges (In total: 13 categories)		**Economic Challenges** (In total: 14 categories)	
Access / Enabling environment e.g., Access to technology	**Availability of Resources** e.g., Access	**Research/ Data** e.g., Lack of metrics, measurements,	**Labour** e.g., majority of population not active

and digital divide fed by geographical divide (urban vs rural).	to energy and availability of skills	monitoring and evaluation and wrong indicators to measure prosperity	in economy, informal economy and lack of taxes
Sociological Challenges (In total: 16 categories)		**Political Challenges** (In total: 10 categories)	
Attitudes, beliefs, behaviour, values e.g., Resistance to change and change is a long-time process.	**Collaborations** e.g., Lack of collaboration especially between public and private sectors and lack of communication.	**Collaborations** e.g., Lack of unity in SA and silos between departments and governments	**Corruption, crime and violence** e.g., nepotism and unstable governance (e.g., CoJ has a constantly changing mayor)

However, as the technological, economic, sociological and political challenges were overlapping it was decided to present them rather in their respective categories instead of the dimensions (Annex C).

Reframing - Step 2: Mapping stakeholders' fears/concerns, hopes/desires and assumptions

The next step was drilling down on a more subjective level, where stakeholders were asked to map out their fears/concerns, hopes/desires and assumptions by asking the question 'How do we understand a just circular economy transition the South African context?'. Like with the previous step hopes/desires, fears/concerns and assumptions were grouped according to overlapping categories (Annex D).

Backcasting

Backcasting is used to create long-term future visions. The idea is to define the desired future and then apply backcasting to the present, which should lead to a transition pathway along which projects, initiatives and programmes are placed which should ultimately lead to the long-term vision (see Figure 1).

Figure 29 - Transition pathway, from long-term vision, actions, projects, programmes etc are envisioned to the present.

For the workshop the long-term vision of having achieved a just circular economy transition in South Africa in 2050 was chosen. The mid-term vision was then developed by the participants for 2035. Participants were asked to focus on political and technological interventions, however they were also asked to think about other interventions.

This exercise was the most difficult one because it required participants to focus on very specific projects/programmes, goals and indicators. Hence, looking for a solution to the challenges that were identified during the reframing exercises. The transition pathways also looked quite different for each group (Photo 3).

Workshop Outcomes

General outcomes

The workshops demonstrated that the CE as a concept is present in the South African context, however understood in different degrees and frequently still seen as a waste minimisation or recycling exercise. The just transition is also not a new concept to South Africa, because it is prominent in the energy sector of the country due to its fossil fuel dependency. The CE is viewed as a development opportunity to create alternative work opportunities for the country, but further discussion on how some of the most critical social-economic issues are addressed by the concept have been neglected.

Stakeholders found the first two exercises (reframing step 1 and 2) rather easy to follow. However, developing concrete projects that can address the ongoing challenges as well as hopes, fears and assumptions which were put down by stakeholders was perceived as rather difficult. Due to the multitude of complex challenges more than a day could be spent exploring one of the challenges such as water or lack of skills. For the short duration participants put down a considerable amount of information, shared experienced, listened to other stakeholders and co-created potential projects that can shape a just CE transition for South Africa.

Groups were asked to sit with people from other institutions, and groups that had diverse institutional composition and insightful experiences and ideas to share. The workshops also allowed for an open dialogue and the feedback received by the participants was positive. To deepen the research a key recommendation would be to speak to labour associations / trade unions as well.

Key outcomes by session

Key outcomes based on each of the three interactive sessions have been summarised below.

Reframing – Step 1: Creating a problem map

In total 38 categories were developed from the content provided by the participants. Key findings are presented below and the extensive list that summarises the outcome by having removed duplicates and similar inputs are listed in Annex C.

Historical Legacy

- *Apartheid ended officially in 1994 with the first democratic election in South Africa; however, its legacy still plays out in today's society. Structural socio-economic issues from the past have not been overcome e.g., a large part of the country's wealth may be in monetary terms or land is held by a small elite. Citizens find it hard to navigate this system where the historical context still plays out. The historical context is often not considered in debates.*

Demographics - Limiting Accessibility

- *Even if CE solutions are available not everyone has access and if the goal is to make an impact all segments of the population must be reached. However, this is challenging since SA is the most unequal society in the world. The costs of implementation outweigh solutions as financial barriers and crime to invest in technologies limits communities to make use of sustainable solutions. Innovation and ideas are present, in particular in townships, however accessing technology such as cell phones, laptops, mobile data etc is difficult to e.g., market a business.*

Corruption

- *Corruption is a massive issue in South Africa especially in the government, which only increases mistrust between society and the government. Due to nepotism, favouritism, selfish acting, politicians are perceived as power hungry, careless and selfish. Incompetent leadership is hampering the socio-economic development and the benefitting of the most vulnerable in the country and society at large, which is also reflected in the lack of service delivery. Further, accountability and consequences for abusing power is rarely happening.*

Unity

- *A sense of unity among South Africans is lacking due to the historical past. This means that shared values, vision and trust is missing. Crime and violence, which lead to a lack of safety, reinforce the social divide and missing trust.*

Labour

- *Not many people are actively participating in the formal economy, which contributes to other issues such as crime and creating an unsafe society. CE might also lead to job loss, while new jobs will be created. There will be a shifting of sectors where labour with CE skills will be required.*

Knowledge/Awareness/Education about CE

- *Decision-makers do not have the required knowledge about CE, but discussion on CE is taking place in government, hence high-level knowledge must exist.*

Policies

- *Having a comprehensive suite of policies to transition to a CE is currently missing (lack of policies, inconsistency and dispersion of policies). However, policies can help to unlock a circular economy and support SMEs. Implementation of policies is a massive challenge.*

Reframing – Step 2: Mapping stakeholders' fears/concerns, hopes/desires and assumptions

The second step delivered 24 categories of which the extensive list can be found in Annex D. Key categories and findings have been summarised below:

Urgency

- *Urgency was both put into the concern, assumption and hope group. On one hand participants were concerned that too much damage has already been done to deal with the socio-economic and environmental crisis. On the other hand, participants also communicated their hope that for a circular economy transition a critical mass must be reached, which will in turn facilitate and demand the transition.*

Inequality & access to services and resources

- *The assumption was made that the circular economy is not seen as a priority in a country where fundamental human needs are not being met as access to services and resources is not delivered. A clear concern was that South Africa would not even start the transition within the next 5 to 10 years. However, the hope is that the circular economy is a tool to address the most pressing issues of inequality and access to services. Further, the circular economy should work for all and not be merely seen as a resource focused concept but one that includes wellbeing and sufficiency for the country's citizens.*

Rethinking the current economy

- *The CE concept cannot be copy and pasted into the current linear economy. The entire system needs to be rethought and is different in each context. The CE in Europe will look different to the one on the African continent and also different in each country. There might not be one definition of the CE and SA cannot blindly apply policies, technologies, business models that work in another context to the country.*

Circular Washing

- *The concept will also be abused and instead of green washing, circular washing takes place and the concept just becomes another concept replacing the previously so-called green economy. The fear is that the CE becomes a box-ticking exercise.*

Local Context, Culture and African Pride

- *The CE has to fit into the South African context, including traditional practices, even if these are not considered as circular by the Global North. A just CE also requires that stakeholders connect to their African identity. High tech is not the sole solution and CE needs to be practical and local.*

Backcasting

The knowledge and insights generated during the backcasting exercise were used to develop nine categories (Figure 2). Each category includes projects, programmes and/or policy recommendations to transition South Africa to a just CE until 2050.

Figure 30 - Nine categories that would support a just CE transition in South Africa.

Participants also developed aims for the present, 2035 and 2050, of which some ended up as guiding principles, which should guide the projects, programmes and policy development and implementation of each category. A few of these guiding principles are listed below:

- Take socio-geographic context into account by tailoring solutions to the local context
- Create trust in social institutions, build citizenry, make people proud and invest in communities
- Learn by doing: create, do, learn, adapt, re-do, succeed (Create the space and policy to allow this)
- Education at all levels focus on inner development goals

Foresights and policy recommendations

Key small to large-scale projects, programmes and policies which have been developed by the participants are presented in each category. All proposed initiatives can be found in Annex E.

Governance

- Corruption is a massive barrier to drive socio-economic development and a just CE transition in South Africa. The aim is to decease and ultimately eradicate corruption as much as possible by creating transparency and accountability. Servant leadership should be embedded and implemented in all governmental spheres. Importantly, active participation by citizens is required.

Education and Capacitation

- Revise education by reviewing the curriculum to integrate the CE and systems thinking at all levels from early childhood development centres to tertiary education including vocational training. Revising and re-developing the curricula must go beyond teaching about the CE but needs to be linked to future skills and the type of leadership that is required in the public and private sector to allow for a just CE transition. The curriculum should integrate inner development goals and needs to be developed alongside the private and public sector to create applicable skills and knowledge.

- Develop graduation adoption programmes similar to a trainee program for graduates to gain experience and to prepare them for work which should reduce in youth unemployment.

- Develop skills training to empower small and medium-sized Enterprises (SMEs) on appropriate CE business models.

- Develop and capacitate government officials to fulfil their mandate and integrate CE into strategies, policies, tenders etc.

Awareness and Engagement

- ‘Build back better’ and 'build back trust': National awareness campaign through social media and traditional media to reach most citizens around a just CE. Leaders need to walk the talk, which links back to servant leadership.

- Science communication is required to move the CE from a theoretical to a practical framework, where consumers are properly informed. The suggestion was made to develop a sustainable consumer framework with citizens alongside experts. It is important to connect theory to implementable projects, between research, public and private sector, which also requires to connect potential innovations to the right sector.

Research

- Large cross-sectored quantitative study which identifies sectoral and cross-sectoral CE interaction opportunities. This would include mapping current and ongoing projects, programmes, knowledge and resources.

- Increase investment in research to benefit South Africa's just circular development.

- Collect and create accessible databases that contribute to a just CE acceleration to measure 'true' circularity of all products and services to inform evidence-based decisions/strategies. This would require developing social, environmental and economic indicators, which are applicable to South Africa. Data could be used for example in material passports.

- Research on CE driven public procurement to identify the opportunities to drive the CE through public procurement.

Roadmaps, Strategies and Policies

- Develop an evidence-based inclusive South African CE roadmap based on a just CE framework, which has been adopted by all SA government and is building on the forthcoming Science, Technology and Innovation (STI) led cross-sectoral Circular Economy Roadmap, National Development Plan 2030, Operation Phakisa and other ongoing initiatives such as Eco-Industrial Parks Programme and Circular Innovation South Africa, Circular South Africa etc. The roadmap should be inclusively developed and needs to be implemented alongside the public and private sector.

- Example of current initiatives and potential action points which should be integrated into the just CE roadmap are:

    - STI integrated into all industries and government to inform strategy

    - Policy that public procurement is CE based

    - Expand the Extended Producer Responsibility (EPR) policy to other materials

    - Initiate and implement the STI-led cross-sectoral Circular Economy Roadmap of the Department of Science and Innovation.

    - Implement the Waste Picker Integration Guidelines.

    - Develop policy on compulsory and electronic voting to ease voting and increase youth voting (assuming people have access to technology). The aim is that every South African is engaged during elections. Voters need to register and submit a blank or filled ballot. Ease of registration and voting has to be achieved.

Economic Sectors and New Business Models

Built Environment

- Existing, underutilised or unused infrastructure to be reviewed to assess which can be revived for accommodation and schooling etc, which may require the revising of regulations or local bylaws.

- Upgrade the informal settlements in terms of housing but also nodes of community upliftment including social and economic opportunities with nature at the centre of design, with circular and just centered approached (green building guidelines and sustainable urban development).

- Creation of material banks where construction and demolition waste are being reused.

Transport

- Creating mobility for all and moving freight from road to rail. This requires reliable, safe, accessible and affordable infrastructure.

Food Systems

- Advancing a sharing economy in the agricultural sector to enable access to technology for small to large scale farmers, which will also require capacitation.
- Creation of resilient and decentralised food systems that make nutritious food accessible.
- Increased locally sourced products in retailers.

Finance

- Develop appropriate financing and support mechanisms to enable the transition.

Healthcare

- Produce and provide affordable and effective medicine available that can draw on indigenous knowledge and medicinal plants.

Development and piloting of new CE business models

- Create business models that drive a just CE transition. For example, refill products as services, allow for bulk refill and develop chemical leasing. Energy can be exchanged as a currency.

Communities and Municipalities

- Identify a clear vision of what a circular SA city looks like such as neighbourhoods with renewable energy, circular water systems, community gardens, open spaces and parks that are safe. Such a vision could be implemented through community projects that focuses on urban greening including urban agriculture, water, recycling and maintenance of infrastructure.
- Each metro is developing its circular city roadmap based on the circular SA city vision and the CE roadmap.
- Create safe and accessible co-working space for citizens including product libraries and product swopping places.

Partnerships and Collaborations

Create strong collaboration between the public and private sector to transition to a just CE.

Reduce conflict and achieve more global cohesion and reduce risk of significant conflict by defusing geopolitical risks, which requires better international cooperation.

Standardisation and Accreditation

- Engage global best practice and conceptualise CE Standard with South African Bureau of Standard (SABS) to measure circularity of all products and services. It is important to note that standards and definitions might also be counterproductive as these might not be applicable to each context and sometimes create loop-holes for circular washing.
- Accelerate and enhancing the work of the South African Plastics Pact by standardising interchangeable reusable packaging; product packaging (makes recycling easier), and phasing out of problematic packaging.

Comments and Conclusions

The workshops overall were well received by the participants. However, it was felt that more time was needed to unpack what a just CE means in the South African context. From the discussion and engagements, it is clear that fulfilling fundamental human needs must be made a priority and has to be integrated into any CE discussion going forward. The discussion should be decoupled from the waste or the informal sector and rather be integrated taking into consideration cross-cutting sectors such as water, energy and materials as well as enabling environments such as good governance and participatory planning. A just transition cannot be just if its strategy and implementation is developed and implemented top-down only. Both, a bottom up and top-down approach will be needed, which requires the active engagement and participation of different stakeholders, addressing power imbalances. Circular Economy hubs and platforms can support the facilitation through multi-stakeholder engagements.

Mainly projects and programmes were developed that are supporting a just CE transition in South Africa, even though participants were prompted to focus on technological and political interventions. This might also reflect the experience with country policies particularly where they are lacking or slow in implementation. For example, the constitution of the Republic of South Africa is futuristic and already integrates the definition of sustainable development. Unfortunately, the reality for many people in the country looks different and actions are desperately required in a country which struggles with high inequality and unemployment rates.

Travelling the road of a just transition also requires trustworthy and strong collaboration and partnerships within the country, the African continent and internationally. From the workshops it was clear that the Global North's agenda is critically viewed, as the assumption and fear of using a just agenda as a 'trade-as-usual pacifier' was raised. Global supply chains and sector specific lock-ins also require the restructuring and development of international trade agreements, which should be centred around a just CE.

The just element embedded into a CE means that the discussion starts to go beyond a resource focus and opens up fundamental questions for South Africa. From the two reframing exercises it became clear that shared values, vision and trust need to be built to create unity in a torn country. Trust in the South African government needs to be rebuilt and lived, not only spoken; servant leadership was proposed. Even though only a few economic sectors were mentioned during the workshops, participants did see that sectors are interconnected; working in one sector alone is not going to bring about the required transformation. Decision-makers in private and public organisations need to be further capacitated around the just CE, while context specific solutions that can be linked to traditional practices need to be created.

A just CE roadmap for South Africa is proposed, which can be built on existing frameworks, research and strategies such as the Presidential Climate Commission's Framework for a Just Transition in South Africa and forthcoming STI4CE Strategy. The roadmap needs to be developed in collaboration with each national department, taking regional and local governments, private sectors, and citizens along. Implementation of the roadmap becomes key, where tangible actions need to be carved out and priorities need to be set.

6. The workshop in the UK

The University of Sheffield (USFD) team initially met in October 2022 to discuss the scope and format of the Sheffield workshop. A key consideration at this meeting was the expertise and interests of the team, as well as our limited resources, and how we might deliver a meaningful participatory workshop within the guidelines set by JUST2CE. We were also mindful of the industrial action taking place in the UK Higher Education sector and how this might impact our timeline and ability to deliver an event. At this meeting it was agreed that the repair economy would make a good central subject for the Sheffield workshop.

Over the subsequent months we met several times to sketch out a plan for the workshop. In exploring possible formats, we were keen to deliver something community focused which would ideally provide tangible benefits for attendees. We reached out to Reyt Repair, a community repair shop and social enterprise based in the Pitsmoor area of Sheffield to gauge their interest in working together on an event that would be mutually beneficial. This led to the format of a 'community repair open day' that took place on the 27th April 2023.

Community Repair

Repair activities have a fundamental role to play in the transition to a CE, given their potential to extend product lifecycles and reduce demand for new items. Attention to the role of repair in a CE is growing (Llorente-González & Vence, 2020); however, to date, there are no specific targets being set at a country level. Also, country-specific data shows that availability of repair services for consumer products can be challenging, due to a lack of both repair enterprises and technicians (van der Velden, 2021).

van der Velden (2021) describes community repair in contrast to commercial repair: "volunteer repairers and people with things to fix meet in a local, non-profit setting. Together they explore the problem and try to solve it… community repair is about building community around issues of consumerism, sustainability, learning together, and sharing" (p1). Organised community repair activities thus offer a potential model for scaling up circular activities in a manner that naturally incorporates aspects of social justice with their focus on community building, as well as minimisation of waste and primary production, rather than accumulation and profit.

Community repair activities in this form can be seen as a North American and Western European phenomena, arising in the aftermath of the 'Global Financial Crisis', with independent endeavours springing up in Brooklyn, the San Francisco Bay area, and Amsterdam in 2009 (van der Velden, 2021). Collective organisations such as Fixit Clinics which hosts regular events across the US, as well as hosting Zoom clinics, and Repair Cafés, which claim to have over 2500 venues worldwide, offer blueprints and guidance for setting up community repair initiatives. The Restart Project, launched in London in 2013 takes a similar model sharing open source resources, as well as campaigning around the Right to Repair, and developing a data standard for logging individual item repairs.

The *'Right to Repair'* refers to both a broad movement taken up by consumer activists, and various legislative proposals that would combat existing barriers created by manufacturers that prevent consumers repairing electronic and mechanical products (Grinvald & Tur-Sinai, 2020; Perzanowski, 2021). Such barriers, primarily introduced for reasons of profit maximisation, include limits on authorised commercial repair, intellectual property, planned obsoletion, and design which inhibits repair. Various legislation has been proposed in national contexts, including within the USA, and within the EU's Circular Economy Action Plan, both formally and across the academic literature in contexts such as China and Canada (Fillman, 2023; Quan & Zhang, 2023). To date however, little has been passed formally into law across the globe.

The repairing economy in the UK context is therefore small. A European Environment Agency report (Manoochehri et al., 2022) lays the foundation for accounting the formal repair sector, and categorises three key product groups: electrical and electronic equipment, clothing/textiles, and furniture. The report estimates 150,000 full-time equivalent jobs in the EU27 repair sector in 2019, around 0.3% of all employees. Estimates of home repair activities, as well as community, and volunteer-led repair are more difficult to account for, and it is likely that there is a moderate sized informal sector here.

Bradley and Perrson (2022) discuss how community-based repair serves a different, more socially inclusive role beyond corporate repair. Nevertheless, existing academic literature has pointed out that community repair spaces can be contested (Schägg et al., 2022; Smith & Raven, 2012), with inconsistencies between stated aims and actions potentially becoming apparent. In particular, Schägg et al (2022) point out that while Repair Cafes ask for mass participation, internal power dynamics might discourage the involvement of women and lower social classes, pointing to the disconnect between the environmental goals of these facilities and their ability to achieve wider just transition objectives. The interaction between community demographics and levels of repair activity engagement therefore seems an important area of research interest.

Research Design

The primary USFD research team consisted of Ben Purvis, Tim Else, Andrea Genovese, Andrea Jimenez, and Ram Venkataraman Guru. Through deliberation, analysis of the literature on community repair, and consideration of the JUST2CE aims and WP3's goals, a series of research questions were elaborated.

Research questions

The desire to better understand barriers is a key driver of the WP3 national workshops; this is also an area of active interest within the literature on repair (Kurisu et al., 2021; Rogers et al., 2021; Terzioğlu, 2021). A recurrent theme across this literature also relates to the demographics of both volunteer fixers, and those who bring items for repair, with employment status and gendered dimensions frequently coming to light (Rogers et al., 2021; Schägg et al., 2022). Such elements relate to the theme of gendered justice within JUST2CE's WP1, in particular the nature of voluntary and unpaid work, and unrecognised social reproduction. These issues led to the formulation of the first two research questions:

RQ1) What are the barriers that prevent individuals routinely engaging in community repair activities?

RQ2) Does the background and identity of individuals affect their perceptions and engagement with community repair activities?

In a similar fashion to Schägg et al.'s (2022) study, which prompted participants to articulate the narratives of change conceived in relation to the role of repair cafes within a sustainable transition, a further RQ question was formulated to explicitly probe the link between repair activities and their link to the circular economy or normative transition to a sustainable society as conceived by the actors engaged within these activities. As such, RQ3 is formulated as follows:

RQ3) How do individuals conceive of community repair fitting into the transition to a sustainable society?

Finally, RQ4 circles back to the technical and political responses that might be considered in order to mainstream community repair activities. This is a question for data analysis and embedding findings within the wider UK policy context.

RQ4) What policy recommendations (both governmental and organisational) might be helpful in addressing these barriers?

A Case Study: Reyt Repair

Reyt Repair is a social enterprise based within the Pitsmoor area of Sheffield in the United Kingdom. Situated within the public green space of Abbeyfield Park, it opened its doors as a community repair shop in October 2022. The building itself was the former home of a local colliery owner and has since been used for various enterprises, such as a school, office, public library, and community space for several initiatives over the past few years, such as the Burngreave Messenger, a local newspaper. In contrast to other community repair initiatives, which tend to operate weekly, monthly, or on an adhoc basis, Reyt Repair is open from 10am to 4pm each week on Tuesday through to Saturday. The operations are powered by a team of volunteers, who help customers requiring repair, covering items such as torn clothing, broken furniture, and

damaged electrical items. Depending on the availability and expertise of staff, the item may be looked at immediately with advice offered and repair attempted. Otherwise, the item and customer details are logged on Reyt Repair's repair database, and a repair is scheduled for a later date. A small fee is charged for each repair to cover the running costs of the space.

Figure 22: Reyt Repair logo. [copyright Reyt Repair]

The enterprise is embedded within the local Pitsmoor community, with both organisers and volunteers having strong associations with the local area. Typical customers also tend to come mostly, but not exclusively, from the immediate area. Pitsmoor is located within the Burngreave ward of Sheffield, which ranks low in indices of deprivation, with high unemployment and income deprivation. Indeed, 50% of the population are classed as economically active, and 50% are seen as economically inactive. Drawing from the 2021 census data, the ward appears to be ethnically diverse, with 49% of residents born outside of the UK, and Islam and Christianity being the main religious beliefs at 50% and 29% of the population respectively (Office for National Statistics, 2023).

Figure 31: Abbeyfield Park House. Gregory Deryckère CC BY-SA 3.0 via Wikimedia Commons

Reyt Repair was selected for a case study for our work both due to its proximity, and being somewhat atypical as a community repair initiative in a deprived area, that is also open on a regular daily basis. We reached out to the organisers of Reyt Repair to discuss how we could co-create an event that was mutually beneficial for us both.

Overview of the Sheffield Workshop: A Community Repair Open Day

After discussion with Reyt Repair, and consideration within the USFD research team as to the feasibility of various workshop formats, we settled on a 'community repair open day' held at Reyt Repair's residence in Abbeyfield Park House. We initially pursued the USFD Students' Union as a venue, but ran into difficulties with the necessary paperwork that needed to be completed before such an event could go ahead. The event was a full day schedule, consisting of interactive workshops on basic repair skills and free repairs of personal items offered to any attendees. Whilst the open day was taking place, the research team collected information through three primary means: qualitative surveys, unstructured interviews and observations. These techniques were chosen specifically to complement each other and ensure the collection of a rich set of data. The perspectives of both those volunteering for the open day, and those attending for either the workshops or free repair, were sought and captured through these methods.

Timings	*Description of events*
10am – 4pm *[Throughout the day]*	*Free electrical, furniture and clothing repairs and advice provided all day by experienced Reyt Repair volunteers.*
11am – 12.30pm	***Repair skills workshop 1****: Learn to fix a leaking tap, a damaged cable and replace a plug (for women and gender minorities)*
12.30pm – 2pm	*Lunch and refreshments served*
2pm – 3.30pm	***Repair skills workshop 2****: Learn to fix a hole in your pocket, replace a missing button and turn up your trousers*

Table 2: Schedule of the event.

The schedule for the day is displayed in Table 1. This includes repair activities being carried out throughout the day, the two skills workshops and a buffet lunch. Activities took place in four core rooms within Abbeyfield House, the entrance hallway where participants were greeted and asked to fill in consent forms, the repair room where repairs were undertaken, the art room, where child care was provided and lunch took place, and the workshop room where the skills sessions were held. Data collection took place across these locations.

Figure 32: Advertising flyer for the event. [copyright Reyt Repair]

Data Collection Methods

Following a preliminary literature review which allowed us to pin down the research questions outlined above, our methods of data collection consist of a survey, observational data from the event, and semi-structured/unstructured interviews conducted both during the event, as well as several follow up conversations. These techniques were chosen to complement each other and ensure the collection of a rich set of data.

The Survey

To capture the thoughts and opinions of volunteers and attendees throughout the day, a paper-based qualitative survey was developed by the research team and issued to individuals as they arrived at the open day alongside consent forms. Whilst as many people as possible were spoken to and observed, the large number of individuals engaging with the open day motivated the research team to create an instrument that was able to facilitate collection of viewpoints without direct researcher involvement. This ensured that any outlooks that were missed through other data collection means could still be captured and analysed. With an awareness of participant fatigue that could set in through an oversaturation of topics (Braun et al, 2021), questions asked were kept succinct and to a minimum. Given their distinct roles within the social enterprise, attendees and volunteers were issued with different surveys. These surveys sought the same topical information but through adapted question wording. The questions asked in the qualitative survey, and their links with each other, are shown in Table 2 below.

Topic	Volunteers questions	Attendees questions
Background and identity for engagement with repair	Why do you volunteer here at Reyt Repair?	Why are you here today? Do you see yourself as someone who could be frequently involved in community repair activities? Why/why not?
Barriers for engagement with repair	In your opinion, what would prevent people from engaging in community repair activities? What could be done to increase engagement?	Do you feel like you are more likely to engage with community repair activities after attending today's event? Why/why not? What might prevent you from engaging in community repair activities in the future again?
Insight into the link between repair and sustainable futures	Do you think community repair is important for a sustainable future? Why/why not?	Do you think community repair is important for a sustainable future? Why/why not?

Table 3: Questions asked in the qualitative surveys

Observational Data

A key element to the data collection over the open day was to observe the community repair process and those who engage in it. Participant observations have been shown to effectively collect data in similar repair-related research (Bradley and Persson, 2022; Schagg et al, 2022; van der Velden, 2021). The research team went into the setting as 'observers as

participants', meaning that the researcher's identity is revealed to those at the location, but rather than fully participating in the activities, the research team took a less active role in the activities and observed them instead (Saunders et al, 2019). A certain degree of participation was necessary to gain an appreciation of the activities and to facilitate interaction with the participants, but researchers were not fully taking part with the open day workshop and activities. From arriving to set up the open day until leaving, the research team were recording observations through written notes and photographs. Having the entire research team observing, instead of one researcher, encouraged a wider scope for capturing more data, as well as drawing on the different identities of the research team to capture detail others in the team might overlook (Jorgensen, 1989). Whilst anything of interest was to be noted, a prior discussion took place to establish what kinds of topics should be specifically considered when making observations, drawing from previous literature and the research questions. These topics were written up and distributed to the research team beforehand, and are shown in Figure 4.

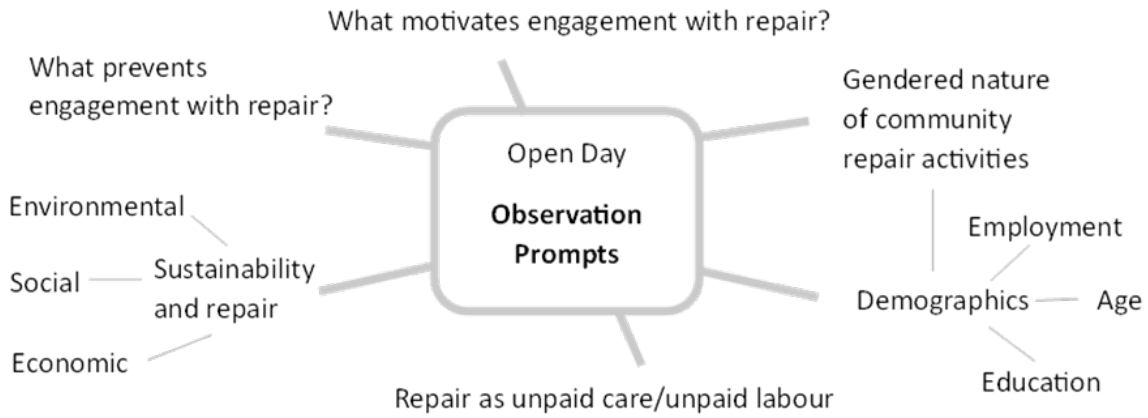

Figure 25: Observation prompts used by the research team throughout the open day

Interviews

Given the level of flexibility of the day required to facilitate attendee demands, formal interviews were not scheduled with participants, who were either preoccupied with repairing items or were taking part in the workshops and other activities. However, unstructured interviews were able to take place on an adhoc basis, when participants found themselves with a free moment, or conversed with the research team. Given their informal and organic nature, as well as the busy setting of the open day, the interviews were not formally recorded for transcription. Instead, notes and quotes were written down during and after the conversations for later analysis. Whilst being unstructured in the questions asked, interviews remained focused around the same topics that were sought through the qualitative surveys and observations, as shown in Table 2 and Figure 4. As such, they provided an effective means to discuss and clarify observations as they emerged throughout the day.

Data Analysis & Ethics

Data analysis was an iterative process and began whilst data collection was still happening, via conversations of emerging themes between the research team. Group conversations, both in person and online, took place between the research team, and written up notes, quotes and survey responses were all collated and shared electronically. Data reduction consists of indexing and coding, meaning relationships are made from the raw data with established a priori themes and emerging themes respectively (DeWalt and DeWalt, 2011). This data reduction took place through group conversations and categorising of data under suggested and emerging themes. Direct participant quotes and observations categorised under these themes are used as evidence throughout the findings of this study.

Informed consent was sought through the provision of an information sheet and consent form provided to the volunteers and attendees on arrival. Members of the research team were always available to clarify and answer any questions that

arose. Whilst the setting of the case study has been revealed due to the importance placed on organisation idiosyncrasies within this research, every effort has been made to ensure the confidentiality of individual participant responses in the findings. As no private matters are disclosed, nor any disparaging remarks made, regarding Reyt Repair, the research team can foresee no potential harm in identifying the organisation in this work. Instead, Reyt Repair is portrayed as a successful template that could inspire policy and other organisations as they develop.

Workshop Findings

Multiple viewpoints from the open day are covered in this section, with the notable distinction being drawn between attendees and volunteers. Attendees are those who participated in the open day, either taking part in a repair workshop or bringing in an item to be fixed. As such, attendees are seen as the customers of the repair enterprise. The volunteers are those who are formally associated with the repair enterprise, and are present either to run the workshops or to undertake repairs for customers. Leadership and management are also discussed, which is in relation to the individuals who began, and now oversee, the repair enterprise. All these groupings were classed as participants in this study, and their perspectives are explored and compared alongside each other.

Initially, barriers to community repair engagement will be considered, alongside some emerging drivers. The distinctiveness of the enterprise, in terms of location and management, appeared vital to understanding engagement of the local community with the repair activities, and as such has been afforded its own section. Issues around community identity, such as income, gender and politics, are then explicitly discussed, after which the results are drawn together to explore narratives around a transition towards a circular future.

Barriers to engagement in community repair

The institutional environment primarily aligned towards a ‘take-make-dispose’ model demands repair cafés to navigate a complex web of barriers. On the regulative front, there seems to be a negligible amount of support through laws and regulations that can facilitate repair-friendly design of products. This came up during the workshop when a participant brought an electronic item (a computer mouse) to be repaired. The repairers used their ‘trial and error’ method to locate the source of fault and rectified the faulty connection between the battery and the circuit board within the mouse (faulty /twisted rings near battery holders were rectified). However, that was not the end of it as the mouse still did not function properly. The participant was then advised that trying to repair this item will prove futile owing to the miniaturised design of the circuit board and limited availability of spare parts as quoted by the repairer below:

> *“Oh gosh, it seems like the item has more than one problem. Now, even if we get into the circuit board and identify where the other problem lies, we may not be able to secure a spare part to change it and sometimes it might be very difficult to fix it owing to the design miniaturisation as we have no clue as to how many items did the manufacturer (OEM) pack in a tiny dot that is visible to us.”*

An extended discussion with the repairer revealed the increasing complexity of this problem over the years as the size of the electronic components have shrunk tremendously. The repairer remarked about the poisonous effect that Moore’s law has had over the people and how it has impacted repairability of electronic devices as quoted below:

> *“I have worked fixing computers for 20 years, I’ve observed components becoming smaller and smaller; you need microscopes and specialised equipment to repair now; It feels like we’re at a transition stage, computers are getting so small, so cheap and so ubiquitous that they become disposable; Moore’s Law; life expectancy is short, repairability falls away as a need as replacing is cheap and models get outdated - not like a fridge that could last decades, you don’t want an old computer; people like things to last, but also they become obsolete”*

It was also learnt that the older products were easier to repair as compared to the newer ones reinforcing the need for government interventions. However, repairers felt that there is lobbying against repair laws by the manufacturers. The

fragmented nature of repair groups with community interest in mind, as well as uncertainty on restrictions on campaigning placed on social enterprises within the UK, has been observed to be restricting them from being overly political about this situation. Thus, while design miniaturisation has improved the utility of products, it also has led to consequences which impact repairability. Therefore, there is a need to reflect on the laws and regulations concerning design of products with a life cycle perspective to facilitate repair and increase products' longevity.

Figure 33: Volunteers and participants within the repair workroom

The complexity of design also impacts community repair operations by posing challenges in finding volunteers, especially with the right kind of skill to repair products. For those wishing to attend and make use of community repair facilities, lack of time was identified by a number of participants as a barrier. This could be due to "commitment to work", especially when "such activities are organised during… working hours", or simply because individuals are "already very busy". The convenience of buying new was also highlighted, with a participant saying they just "do not want to spend time doing such things [repair]". Cost of repair was also linked to buying new, as "if [repair] is too expensive and buying a brand-new product makes more sense, [an attendee] would not just bother" with the repair process. Whilst high cost to repair can be a barrier, a low cost could encourage attendance, as attendees could "avoid paying extra fees" of buying new if they can repair the item themselves. Some also expressed confusion over not knowing what constituted a reasonable price for repair, making it difficult to judge whether value for money is being achieved or not.

Lack of wider knowledge relating to the existence of community repair facilities emerged as a barrier for attendance and volunteering. Publicity looks key to addressing this issue; for instance, "more images [could be put] online to show what can be done and repaired". However, increasing the level of publicity of the repair enterprise is not the superficially simple solution it appears to be. As one organiser of the repair enterprise points out, there is a reluctance to advertise as to not exceed the capacity of the facilities, ensuring the right level of volunteers to match attendee demand. This leads to another barrier, which is the recruitment of volunteers. As reflected on earlier, repair activities can take place during working hours, where skilled workers are usually engaged in employment. As skilled workers are needed to offer effective repair services, talent is sought from those outside of normal working patterns, such as individuals with disabilities or who have retired. To add further complexity, given the variety of items that can need repair, a broad and diverse skill base is required for effective repair services to be offered.

Issues around embarrassment were discussed as a reason to not engage with community repair activities. Individuals might be embarrassed about bringing in something for repair as it might be seen as simple or something that people should be expected to know how to repair themselves. As a volunteer pointed out, “It’s not silly, because it saves something that would otherwise have been thrown away”. Others at the workshop discussed how people are beginning to associate repair with green credentials, and as such are overcoming their repair embarrassment and are keener to engage.

The ability to gain new skills and learn was seen as a motivation for both attendance and volunteering, as by “learning about fixing things”, a volunteer “feels [they are] contributing to the project”. Education of repair skills certainly plays a role in the transition to a sustainable future and is discussed in more detail in Section 4.4. Being able to contribute to the repair project through using skills, and to wider society in a meaningful way, appears key to deciding to volunteer at the enterprise. The social benefits of volunteering identified in this study are plentiful: making new friends, speaking to like minded people, mental health benefits, and having something to do were particularly noticeable amongst volunteers. These benefits appear to outweigh the obstacles to some, with one volunteer saying how much they enjoy their work, “although [they] need two buses to get here” as there is “nothing similar to [the repair shop] near home”. The idiosyncrasies of the repair location and the community it is based in was seen as affecting many of the barriers and drivers already discussed, and this interaction will be explored in its own section.

Heterogeneity of the repair location

In the case under study, the repair enterprise is physically located in a small council-owned park in a large, detached building. The flowers nearby in the park are beginning to bloom, and the aesthetic nature of the location is evident. Due to wages not being offered by the enterprise, it was seen as important for the space to be as attractive as possible for the volunteers, so they enjoy being there. Due to recent incidents, security concerns around the building are paramount at present, but there is a reluctance to put a security fence up as this may create an unwelcoming site, so CCTV is being considered as a less visible alternative. In terms of physical accessibility, the building has some challenges. Attention was drawn to accessibility in terms of public transport, absence of a car park and issues for those with mobility problems. Both volunteers and attendees spoke about the rarity of the place, which subsequently involves the need for people to travel if they wish to engage with the services offered, from other Sheffield suburbs and beyond. A tool bank is also offered on site, where both customers and volunteers can rent out a wide range of tools for personal use.

Affordability to the local population was also discussed by several participants, given the deprived location compared to other areas in Sheffield. A link between lower income and repair was made by an attendee, saying that they “wonder if this service is more for someone who needs it, and who doesn’t have money for new things”. Cost was identified in Section 4.1 as a factor to consider when encouraging engagement and this is acknowledged by the management, who are trying to devise a fair price strategy. This can be difficult, as several communities beyond the immediate locality are being served by the repair shop. Ideas discussed to address this include paying by postcode, or pay as you can, but these do not always end up being equitable or fair payment methods. Publicity was also previously identified by participants as a way of addressing the lack of knowledge barrier about the services offered by the repair shop. As a way of adapting to the audience within the community, volunteers emphasised how effective advertising in different languages would be in increasing engagement. “[The repair shop] needs multilingual world of mouth” and “currently, messaging only in English, [creates a] language barrier” are two quotes from volunteers that exemplify this point.

Beyond the physical building location itself, the leadership of the enterprise emerged as critical to the success around growth and engagement. Many volunteers were quick to praise those in charge, saying they are “great, friendly, community minded and very well motivated”, as well as being “a godsend”. The leaders also played a pivotal role in establishing the enterprise by pooling together resources, requesting volunteers’ equipment and leveraging existing networks to keep the start-up costs as low as possible. Support is also given by the council in terms of rent, but this has a state of precariousness regarding permanence of residence attached to it. Whilst the leadership appear fundamental to the success of the enterprise so far to the volunteers, they are in turn complemented by the attendees, who said “it felt good interacting with the volunteers who have been helping people here, and the vibe is amazing” and “everyone has been very friendly”.

Figure 34 A workshop participant learns how to wire a plug

The general importance of the local community in relation to repair featured through several conversations with attendees and volunteers alike. This was also related to cost of repair by ensuring the service was affordable to the local population by "having a low-cost option for those on low income or benefits" or helping "people budget better and have their money to spend on other things, such as food and utilities". As one attendee said, "in a community like ours, with high levels of poverty, it is good to extend the life of things that people are using". There is a positive impact on health in the community too related to community repair activities. One volunteer discussed how community repair is "one small thing that can improve people's quality of life. Also, [repair] can improve the health and wellbeing of volunteers involved as it adds purpose, encourages skill share, passes on new skills that could make people more employable." An attendee felt a similar sentiment, saying that "Community repair groups can empower small groups around different localities and regions to bring about the much-needed change in our own unsustainable and linear lifestyles". What becomes clear here is that community repair can be inextricably ingrained within the locality it finds itself in, doing both an economic and social

good. The power of repair bringing communities together can be summed up in an observation by a volunteer: “I could be fixing stuff alone in my basement, or I could be with the community making friends”.

Identity of the community

The influence that community identity has on engagement with repair activities has just begun to be explored in the previous section, covering issues around welfare and income of the local population. Age was also discussed by participants as a factor relating to volunteering at the repair enterprise, primarily in the context of retired individuals having both the time to spare and the skills having been developed throughout their working life to draw on in their volunteering roles. However, two factors relating to identity that were noticeable from the participants are issues around gender and the political nature of repair.

Figure 35: A volunteer prepares for the women’s plumbing workshop

When organising the open day, it was apparent that there was a desire to run a women's only session as part of the programme. Through planning discussions, the motivation for this appeared to emerge from the religious background of the local community, where attendance might have been seen as more attractive if a woman's space was offered. This belief was proved to be accurate, with an attendee reflecting that she “came here for the women’s workshop. [She] lives locally and saw [the open day] advertised. [She is] new to the area and wanting to get involved in things in the local community”. When reflecting on repair activities in Iran, an attendee said it is common for women to fix clothes and textiles, and that everyone in Iran, especially men, knows how to fix things, whether by themselves or knowing where to take it to. Another attendee exclaimed to a male attendee that they “need to learn how to sew, don’t rely on your wife!”. When in the women's only workshop, an issue arose around the teaching of fixing electrical wires, but no female electrician volunteers were available, which presented the issue of having to ask a male volunteer to come and help, thus invalidating the women-only nature of the workshop. Evidently, gender and repair activities are shown to be linked here, and proactively recruiting female volunteers and running womens only workshops appear to increase engagement within the local community.

Repair as a political activity was also an aspect that emerged from the data collection. From the first conversations and visits on site, volunteers appeared passionate about multiple political and environmental causes, noticeable through conversations, clothing, posters, and flyers around the building. Frustration at the "powers that be" and how items are manufactured now, in a smaller unrepairable form are preventing the consumers "right to repair". Planned obsolescence, and the ubiquitous nature of cheap, disposable items, remain points of concern for participants. As was said by a volunteer, "the right to repair is very important to reduce use of virgin resources". Participants called for interventions from both the government, on encouraging the right to repair, and private companies, to actively move away from planned obsolescence. Steps that companies could take were succinctly captured by an attendee, who said that "repair activities are one of the main circular practices [that] should be considered in every stage of production plans".

Narratives of Change: Transition to a sustainable future

Whilst the research team conceived drivers relating to sustainability as a core element of interest, as derived from the literature and informing our research questions (see Table 2 and Figure 4), environmental concerns were not as prominent as we had anticipated. Most of the discussion that was had with participants relating explicitly to sustainability or environmental issues came directly from the prompts built into our interview rubric. A recurrent response to the prompting of the importance of repair for a transition to a sustainable future related to waste, the prevention of 'landfilling', and the reduction of resource use. Multiple participants also mentioned the problem of fly-tipping and how it negatively impacted the local area.

The reduction of waste is a core concern within the CE discourse, it is also something that seems for various reasons to be at the forefront of consideration from participants as consumers, members of communities, and 'planetary citizens'. Here, waste arose as both a direct community problem, i.e. flytipping, a broader societal/environmental problem in relation to landfilling and resource extraction, as well as the complex values and norms relating to what it means to be 'wasteful'. The slogan 'reduce, reuse, recycle' which can be traced to 1970s environmental discourse, was articulated by a number of participants, as a normative, 'common sense' waste hierarchy. Here repair becomes a way by which reduce and reuse may be realised. Several participants articulated that such practices were necessary and "good for the planet". As discussed above, general discontent with practices of planned obsolescence and barriers to repair built into production processes were voiced.

Discussion amongst the research team following the event revealed that none of us felt that the environmental theme was as prominent as a motivator for engagement within the activities at Reyt Repair as we had anticipated. Instead, the community aspect seemed a core driver for almost all the volunteers and participants. It is here that it is useful to reflect on the social dimension of sustainability, and how social goals such as building community and addressing deprivation might lead to positive environmental impacts.

Comments and Conclusions

Returning to our initial research questions articulated in Section 2.1, we may summarise our preliminary findings as follows. Whilst the research team are still considering and framing these findings in relation to existing academic literature, with the intention to revisit the case and perhaps engage in further data collection, these preliminary findings represent a work in progress.

Various barriers to the routine engagement with repair activities were identified, many of which have been articulated in previous literature on community repair. The following themes are articulated relating to barriers for community repair 'customers':

- Time: many participants articulated that they didn't have the time in between other daily commitments to routinely engage in such activities.
- Cost: with some items it seems cheaper to buy new than to repair.
- Access: to some participants the site wasn't accessible for regular visits in terms of distance and ability to physically bring a large item for repair.
- Knowledge: relating to both that community repair initiatives exist, but also skills to repair items.

The following barriers were also uncovered relating to the participation of volunteers and the institutional set up of community repair initiatives:

- Time: many volunteers had to fit their voluntary activities around existing commitments including childcare, and employment. Additionally, several volunteers articulated that they were limited in the number of hours they could volunteer due to regressive state policies relating to social welfare payments.
- Start up costs: whilst Reyt Repair has benefited from reduced rent and the networks of its volunteers to acquire equipment at low or no cost, significant start up costs exist which must be confronted for replicating this model.
- Running costs: these can also be significant, even with labour provided on a voluntary basis, including site related costs such as bills, rent, and security, as well as costs related to acquiring new tools, equipment, and parts.
- Advertisement: as articulated above, many potential customers don't know the service exists, though there are also difficulties in building and maintaining the right mix of volunteers. Language barriers and the gendered nature of the space were also identified as issues here.

In terms of the background and identity of participants and how this shaped their engagement with community repair, the following themes were noted:

- Gender: This presented itself in terms of how participants reacted to and challenged perceived norms relating to the gendered nature of certain repair activities.
- Local area: the enterprise served as a hub for the local community, and the specificity of this community in terms of its deprivation and diversity was a core factor in terms of outreach.

The way in which participants conceived of community repair linking to the transition to a sustainable society presented some challenges to the preconceived notions of the research team here. Whilst when prompted participants were happy to articulate such a link, sustainability didn't appear to be a primary driver. This led to the following reflections:

- A focus on environmentalism may ignore community practices that may indirectly lead to positive environmental impacts.
- Reduction in waste was a motivator among volunteers and participants, but drivers are more complex than purely environmental reasons. The picture is complex with links relating to the values surrounding 'wastefulness', and economic drivers at a household level.

Emerging Policy Recommendations

A more detailed articulation of policy recommendations will be articulated in the subsequent policy briefs. A preliminary set of emergent policy recommendations are detailed below:

- Accessibility of repair to the local community is a key policy recommendation: making services available outside of usual Monday to Friday working hours may encourage participation. Also, keeping the cost of the repair as low as possible, ensuring income is not a barrier to repair.
- Development of repair skills education: important for encouraging people into the building/awareness, but also to train up potential willing volunteers who lack relevant skills.
- Flexibility in guidance when starting up a repair shop - acknowledgement of the local community and be willing to adapt to conditions.

- Development of accessible channels to repair for those from disadvantaged backgrounds, through financial support and the provision of space for communities to meet and develop
- Advocacy of women only repair skill workshops and spaces
- Governmental and industrial action plan on tackling planned obsolescence and fostering the consumers' "right to repair"

7. The workshop in Italy

The National Workshop organized in Naples (Italy) at the University of Parthenope has been articulated in two sections: one dedicated to the e-waste management in the Campania region (coordinated by Prof. Renato Passaro, Research Unit of the Parthenope University of the JUST2CE project) and the other one to the industrial contaminated site of Taranto. (Coordinated by Prof. Stefania Barca, Research Unit of the University of Santiago de Compostela of the JUST2CE project). This report documents the first section of the Workshop dealing with the e-waste management in Campania region.

Purpose of the workshop

The main purpose underlying the organization of the workshop was to bring together all the most important stakeholders of the Italian and regional WEEE management system of Campania Region in order to share and discuss the results of the Uniparthenope case study.

Therefore, a further aim was also to enrich the results with the opinions of the participants. In the case study, the Campania WEEE management system has been investigated by means of face-to face interviews and a questionnaire survey. The main barriers and drivers to the collection and recycling have been the main object of analysis in the interviews face-to-face while the questionnaire survey was aimed to elicit the opinion of the consumers about their awareness, consumption and disposal of WEEE.

Overview of the workshop structure

The workshop has been organized in two roundtables of discussion about the WEEE management system of Campania region. In the roundtables, each one of the participants has been invited to provide his/her opinion about the main weaknesses of the regional WEEE management system in the collection and recycling stages and suggest solutions.

Therefore, the two round tables have been developed over the following major themes/weaknesses of the investigated WEEE system:

- the low collection rates of Campania region compared to other Italian Regions;
- the lack of treatment plants in Campania;
- the lack of data about the illegal trade of WEEE and the cannibalization phenomena;
- the low attention dedicated to circular economy practices such as eco-design, repair and reuse of EEE products in the current WEEE management system of the European Union;
- the scarce communication actions and other bottom-up initiatives to expand both consumers awareness about WEEE collection.
- the consumer responsibility and community value of consumers' collecting/recycling behaviour.

Opening Remarks and Introduction

The workshop has started with the presentation of the main goals of the JUST2CE project and its contribution to the implementation of a CE model in the economy and society that is more environmentally and socially just and inclusive of the aspects related to gender and cultural diversity of the stakeholders of the society.
The presentation proceeded by remarking the main reference framework of the JUST2CE project (applied to our case study) based on the identification of the humility pillars (context, vulnerability, distribution and learning) the leading questions (e.g. for the context: which visions of the world influence the way of interpretation and application of CE?) and the related research approaches (e.g. Science & Technology Studies).
The main theme of the workshop has been introduced deepening on the WEEE research context, the international trend of WEEE as a waste flow, the current collection rates in Italy and the EU, the importance of collecting WEEE as a valorisation opportunity for the European economy and society. The social context of Campania Region has also been outlined recalling the past problems in urban solid waste management of Campania including a severe waste crisis from 1994 to 2012, the emergence of the "land of fire" phenomenon and the effects on the health of local communities and natural environment. These events have left many perplexities in the local population (especially in peripheral areas) causing a strong reduction in citizens' trust in public administrations and a diffidence towards interventions on the waste system with effects to all kind of waste including WEEE.

The results in terms of main barriers and drivers to the collection and management of WEEE in Campania Region have been summarised as in the following:

Barriers

- **Infrastructural**: the absence of certified WEEE treatment plants in the regional context;
- **Cultural**: the negative perception of the citizens to the opening of new plants;
- **Operational**: the problem of cannibalization of WEEE by the informal sector;
- **Behavioural**: the low WEEE collection rates of Campania Region (and the southern regions) compared to Italy when caused by a low awareness by citizens
- **Ethical**: the lack of information about the illegal trade of WEEE;
- **Social**: the perplexities, mistrust and diffidence of the citizens toward institutions and public administrations caused by the mismanagement of the waste system and the related impacts on environment and human health.

Drivers

- **Informative/socio-cultural:** Improvement of information to increase the attention of citizens/consumers: constant and massive national communication campaigns on the media that favour the transparency of the processes, education programs in schools associated with economic and non-economic incentives and other forms of rewards (such as that provided in the WEEE school project). Highlight the economic, social and environmental aspects by favouring bottom-up initiatives that involve citizens on a motivational level (environmental reporting).
- **Infrastructural:** Improvement of the territorial distribution of the collection channels (greater proximity of the collection points to citizens) to avoid negative environmental and social impacts, "Smart" containers for the collection of WEEE available 24 hours a day able to provide information on environmental impacts and any related economic incentives (ENEA Inno-WEEE Project); Mobile eco-stops for the collection of small WEEE, additional to the collection points available and also able to carry out communication campaigns) (promoted by Legambiente);
- **Legislative**: Legislative Decree 49/2014 that favours the end-of-life management of PV panels; Legislative decree 140/2016 supporting the product design of Electrical and Electronic products more in line with the principles of the CE; the regulated participation of CE-oriented actors in the formal WEEE management system.

The introduction has also presented the concept of decolonization and its application within the JUST2CE project highlighting that the latter is an opportunity of co-production of knowledge about common themes between partners from the Global South and the Global North and in particular with the Team Kumasi Hive & University of Cape Town involved in the case study of Agbogbloshie. Besides these aspects, the attention to decolonization also means open up to ethical considerations in research taking into account all the affected stakeholders and their values.

It has also remarked that the colonial relations of European countries with the African context are evident both in the existing trade links and in hidden economies, including the illegal trafficking of European electronic waste (about 50% of the total). Therefore, Illegal trafficking could reveal that colonial routes still greatly affect relations between countries in the international arena.

The introduction session also summarised the results of the questionnaire survey delivered to a sample of about 300 citizens of Campania belonging to different professional categories. The questionnaire was focused on investigating the awareness of the consumers towards consumption and disposal of WEEE. Its main results showed that:

- 54% of the participants in Campania region know the term WEEE while 73% do not know the EU legislation for WEEE management;
- 40% know the phenomenon of illegal exports and 68% have knowledge of the WEEE transfer channels;
- 59% are in favour of purchasing regenerated EEE and 48% of them of reusing EEE;
- The majority of the respondents have more than 10 EEE and 2 phones/smartphones changed every 3-4 years;
- About 21% of the respondents deliver the smartphone at the end-of-life in a suitable municipal collection centre while 34% of them keep the smartphone at home and 36% donate it;
- 78% of the respondents is aware that WEEE materials contain hazardous substances that could generate serious social and environmental impacts;
- The information about WEEE collection and disposal is obtained from the media (45%) or independently (23%);
- For the majority, the planning of a WEEE treatment plant should take into account the economic, social and environmental aspects;
- About the tools useful to increase WEEE collection, 57% of the respondents propose economic incentives while 41% more information campaigns through the media.

Finally, the main conclusions have been outlined with the main research questions for the panels of participants of the two roundtables:

1. The formal WEEE management system of the EU is mainly guided by the economic and market efficiency even if it is based on the principle of producer and consumer responsibility. In which way such a system can be more environmental and socially just? Can this be understood as a case bordering on market failure?
2. How such system can be more participative towards the involvement of citizens? Which bottom-up initiatives/actions to implement? Which actors to involve?
3. The EU system currently fails to intercept and treat all WEEE generated in the EU. Is illegal trade a consequence of this inefficiency? Is it therefore a source of social and environmental injustice?
4. Moving beyond recycling with circular initiatives (repair, reuse) to limit the generation of waste. How to intervene on the production-consumption model to prevent waste generation? What patterns/consumption habits should be adopted?

5. Which role of institutions, companies and individual citizens? How the responsibilities can be shared between them? However, responsibilities cannot be shared equally between consumers and institutions: single action weighs less than institutional solutions, limited initiatives undertaken (e.g., communication campaigns) to increase awareness of the citizens. The role of institutions is required: entrepreneurial support actions for new plants, rapid authorizations, but also greater security/legality); entrepreneurial initiatives (creation of circular startups, repair cafés, support for circular and eco-design); community involvement (sharing of reports/information /choices, educational interventions for young people/families/schools). The companies and subjects of the formal WEEE system require rapid certification processes of the plants, creation of a favourable environment. They are required to report social/environmental initiatives and a massive/frequent communication actions.
6. Importance of the adoption of a multistakeholder approach: can everyone contribute?
7. The lack of local treatment plants generates a negative social impact in terms of avoided job opportunities. WEEE is a rich waste stream source of important metals and other materials with an economic value (reverse supply chain). What proposals? Is it just a problem of financial incentives?
8. The lack of systematic information on illegal trafficking and cannibalization has negative impacts, affects choices and creates uncertainty. What solutions?
9. The EU is reviewing the WEEE directive. What suggestions could be made?
10. Hypothesis of Incremental Innovation: improvement of the existing system. What emerges? Hypothesis of Radical Change: design of a system based on different logics. Is it possible?

Session 1.

The following Figure 1 is a snapshot of the participants to the first roundtable. Some participants were also connected on-line.

Figure 36 First roundtable.

Session 2.

The following Figure 2 is a snapshot of the participants to the second roundtable. Some participants were also connected on-line.

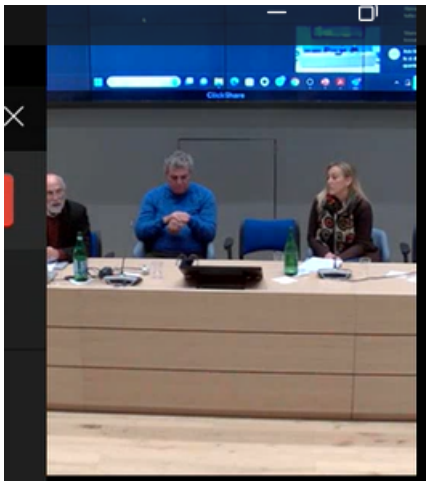

Figure 37 Second roundtable.

Ethics

The ethical aspects have been handled by providing a short summary of the following aspects to the participants in the introductory remarks at the beginning of the workshop as follows:

1. Brief description of the JUST2CE project;
2. The main purpose behind the organization of the workshop;
3. The voluntary nature of their participation to the workshop as well as let them know that as participants could have decided to withdraw from the workshop at any time;
4. The contact information for the local PI of the project (Prof. Renato Passaro);
5. Explanation of how the data will be collected and shared, e.g. by means of video recordings of the workshop and taking notes on the sessions;
6. The codification of their interventions in anonymous form. However, the participant have been informed that their names along with their organizations will have appeared in the list of the participants of the Workshop programme.

Workshop Outcomes

General outcomes

From the interventions of the participants in both roundtables emerged that:

All the stakeholders currently operating in the WEEE reverse supply chain should be part of the formal WEEE management system (including those involved in the repair, reuse and remanufacturing that are not yet part of it) and play their role in reducing the e-waste generation. For sure, the actors of repair could contribute to improve the product design of WEEE given their know-how in the repair as well as the orientation of the WEEE formal systems towards the environmental and social aspects and justice, cultural shift of current lifestyle;

The creation of a conducive environment in particular in Campania Region with a key role played by the public administrators will be important to overcome the current weaknesses of the WEEE system and improving it. Moreover, information for the citizens about how to correct handle WEEE and their value as well as the spread of knowledge of the current legislation within all the actors of the reverse supply chains (in particular municipalities, retailers) in assuring their proper management are key factors;

The correct collection of WEEE in municipal collection centres and their treatment in certified plants avoids external costs to the environment and citizens preventing their dumping and the associated health issues concerning the hazardous substances contained in WEEE. Moreover, it contributes to the maximum valorisation of the metals, components and materials of which they are made.

The adoption of all circular economy principles (repair, reuse, remanufacturing, recycling) in combination with the diffusion of the concept of life cycle of a product is essential to escape the “natural resources trap”. The case of electric vehicles is rather meaningful since electric cars have environmental benefits due to the lower emissions in the use stage but also environmental costs for the extraction of the materials needed for their production including lithium batteries. For this reason, it is important to reuse/recycle materials and products again and again as natural resources are limited.

The dissemination of the concept of life cycle with that of “shared responsibility” among citizens/consumers in order to reduce the extraction of natural resources and favour their better use and management in the whole life cycle.

Key outcomes by session

Session 1:

The main results from session 1 (roundtable 1) can be summarised as follows:

- The current WEEE management system of Campania is not effective in both collection and recycling of WEEE if compared to other Italian regions that collect and treat higher quantities of WEEE. Similarly, at UE level the formal system collects less than the half of the generated WEEE (48% in 2019; 45.9% in 2020)

- Collection rates should increase by means of different actions promoted by all the stakeholders with a key role played by formal system actors;
- Policy actions, leaded by administrators, to support the investments in new treatment plants in the Region are needed;
- A conducive environment must be built between the WEEE management system, institutions and citizens starting from bottom-up initiatives;
- The formal WEEE management system is manly designed to be governed by means of economic and market mechanisms while the environmental, and especially social aspects are often neglected;
- Systematic data collection is needed to understand critical phenomena such as cannibalization and the illegal trade of WEEE.

Session 2:

The main results from session 2 (roundtable 2) can be summarised as follows:

- The concept of programmed obsolescence for EEE can be overcome by the adoption of repair as it provides with the opportunity to extend the service life of EEE, retain most of their value and prolong the latter.
- The case of ASTELAV show that it is possible to industrialize the "repair" activity in a set of predefined operations, balance economic efficiency, promoting environmental resources' savings, social justice and cultural change, for all these reasons it is important to open the formal system to actors practicing circular options. Moreover, the case of REWARE also show that the reuse of WEEE promotes economic efficiency, environmental and social well-being;
- The natural resources' trap (natural resources are finite) requires the repair, reuse and recycling again and again of products, materials and components for the purpose of reducing the demand of natural resources;
- The adoption of the concept of life cycle in policy planning is essential to reduce the environmental impacts as well as the dissemination of concepts of shared responsibility of consumers and producers' responsibility.

Foresights and policy recommendations

WEEE flows are expected to grow worldwide due to the increasing digitalization of the global economy and society (+32% in the period 2021-2030). Therefore, the collection and recycling rates must improve in particular in developed countries along with the adoption of waste prevention measures to avoid the continuous accumulation of WEEE over the years.

Integration of the repair/reuse/recycle actors in the formal system is relevant to improve the effectiveness in managing WEEE and its sustainability as well as in better addressing the current environmental and social justice concerns. The market mechanisms and logics that oversee the WEEE system are not consistent with a system that should focus on environmental and social well-being.

It is necessary to promote the opening of treatment plants in Campania region to generate positive social effects (jobs); limit the impacts of transport and encourage the self-responsibility of local communities.

Comments and Conclusions

The National Workshop has been an opportunity to discuss on the results of the case study focused on Campania region as well as in general on the main environmental and social aspects linked to WEEE as a waste flow and on the effectiveness of the formal WEEE management system of the EU.

The introduction of the latter by means of the two EU WEEE directives has certainly contributed to reduce the environmental and social costs of WEEE management for the society. The formal WEEE management system of the EU requires that WEEE are collected in specific collection sites preventing their abandonment in the environment as well as are treated in industrial processes set up on the basis of environmental and certification schemes that assure the proper handling of WEEE reducing the risks for the health of workers and environment as well as the illegal trade of e-waste.

However, after twenty years of the introduction of the WEEE system, the latter is still source of environmental and social justice concerns also discussed in the workshop. The formal WEEE system being focused on recycling, does not promote WEEE prevention and reduction, the dissemination of the importance of reuse and repair and a cultural shift of consumers towards more sobriety lifestyles. At the same time, being the WEEE system based on a regulated system centred on market mechanisms, it appears to be a system that must be fed by an increasing amount of e-waste generated (about half of which ends up not being collected and) constituting a driving force of EEE production instead of striving to reduce its consumption, lengthen its life cycle and reduce e-waste.

8. General Outcomes of the Co-Production workshops

The following table sums up the main policy recommendation that emerged from the national co-production workshops.

Policy Recommendations	Context/Location
Improvement of regional WEEE collection rate through Communication campaigns, Education programs, Cultural events and bottom-up initiatives	Italy
Opening of certified treatment plants in the region and creating a conducive environment for entrepreneurial activities	
Integration of CE-related actors in the formal WEEE system	
Dissemination of the concept of life cycle and raising citizens' awareness about WEEE recovery	
Systematic data collection to understand critical phenomena such as cannibalization and illegal trade of WEEE	
Financial support and subsidies for community repair activities	UK
Inclusion of repair skills education in formal education	
Governmental and industrial action to embed Right to Repair principles in production	
Integration of informal waste workers into the waste management sector	Spain
Development of new indicators to measure social justice in circular economy activities	
Development of a National Just Circular Economy Roadmap	South Africa
Education and skills development for just circular economy	
Employment creation and social equity in the transition to a circular economy	
Conducting research on sectorial and cross-sectorial circular economy interaction opportunities	
Creation of zero-emission urban bubbles, increase in green spaces, and improvement of public transport	Greece
Integration of marginalized groups in the public and private sectors with increased quotas	
Financial benefits and incentives for entrepreneurs following sustainable and innovative practices	

Table 4: General recommendations per each country.

References

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, *2*, 8–14. https://doi.org/10.1016/j.npls.2016.01.001

Irwin, T. (2018, June). The Emerging Transition Design Approach. *Design Research Society 2018 Catalyst*.

Max-Neef, M. A. (1991). *Human scale development: conception, application and further reflections*. The Apex Press.

Nahman, A., Godfrey, L., Oelofse, S., & Trotter, D. (2021). *Driving economic growth in South Africa through a low carbon, sustainable and inclusive circular economy* (No. 1).

Statistics South Africa. (2023). *Media Release Quarterly Labour Force Survey (QLFS) – Q1:2023*. Statistics South Africa . https://www.statssa.gov.za/publications/P0211/Media%20release%20QLFS%20Q1%202023.pdf

von Blottnitz, H., Virag, D., Wiedenhofer, D., & Haas, W. (2021). *Challenging but promising: South Africa's transition towards a circular economy*. https://wasteroadmap.co.za/wp-content/uploads/2021/07/024-UCT_Final_Briefing-Note.pdf

Bradley, K., & Persson, O. (2022). Community repair in the circular economy – fixing more than stuff. *Local Environment*, 27(10–11), 1321–1337. https://doi.org/10.1080/13549839.2022.2041580

Braun, V., Clarke, V., Boulton, E., Davey, L, & McEvoy, C. (2021) The online survey as a qualitative research tool. *International Journal of Social Research Methodology*, 24 (6), 641-654. doi: 10.1080/13645579.2020.1805550

Dewalt, K., & Dewalt, B. (2011). Participant observation: a guide for fieldworkers. 2nd ed. Lanham: *Altamira Press*.

Fillman, E. (2023). Comprehensive Right to Repair: The Fight Against Planned Obsolescence in Canada. *Dalhousie Journal of Legal Studies*, 32(1), 123.

Grinvald, L. C., & Tur-Sinai, O. (2020). The Right to Repair: Perspectives from the United States. *Australian Intellectual Property Journal*, 31, 98–110.

Jorgensen, D., (1989). Applied Social Research Methods. Thousand Oaks: SAGE.

Kurisu, K., Ikeuchi, R., Nakatani, J., & Moriguchi, Y. (2021). Consumers' motivations and barriers concerning various sharing services. *Journal of Cleaner Production*, 308, 127269. https://doi.org/10.1016/j.jclepro.2021.127269

Llorente-González, L. J., & Vence, X. (2020). How labour-intensive is the circular economy? A policy-orientated structural analysis of the repair, reuse and recycling activities in the European Union.

Resources, Conservation and Recycling, 162, 105033. https://doi.org/10.1016/j.resconrec.2020.105033

Manoochehri, S., Schluep, M., Dams, Y., Mehlhart, G., Lingås, B., Marin, G., Nicolau, M., & Colgan, S. (2022). ETC/CE Report 6/2022 An overview of Europe's repair sector. *European Environment Agency.* https://circulareconomy.europa.eu/platform/sites/default/files/2022-12/Repair%20sector.pdf

Office for National Statistics. (2023). Burngreave and Grimesthorpe Census 2021 map. Retrieved from: https://www.ons.gov.uk/census/maps/choropleth?msoa=E02001632

Perzanowski, A. (2021). Consumer Perceptions of the Right to Repair. *Indiana Law Journal*, 96(2), 361–394. https://doi.org/10.31228/osf.io/v48zc

Quan, Y., & Zhang, X. (2023). Outlook on the right to repair: How will it find its way into China's Copyright Law? *Journal of Intellectual Property Law & Practice*, 18(5), 382–385. https://doi.org/10.1093/jiplp/jpad016

Rogers, H. A., Deutz, P., & Ramos, T. B. (2021). Repairing the circular economy: Public perception and participant profile of the repair economy in Hull, UK. Resources*, Conservation and Recycling*, 168, 105447. https://doi.org/10.1016/j.resconrec.2021.105447

Saunders, M., Lewis, P., & Thornhill, A. (2019). Research methods for business students. 8th ed. *Harlow: Pearson Education Limited.*

Schägg, E., Becker, S. L., & Pradhan, P. (2022). Thwarted visions of change: Power and demographics in repair cafes and urban sustainability transitions. *Urban Transformations*, 4(1), 1. https://doi.org/10.1186/s42854-022-00031-x

Smith, A., & Raven, R. (2012). What is protective space? Reconsidering niches in transitions to sustainability. Research Policy, 41(6), 1025–1036. https://doi.org/10.1016/j.respol.2011.12.012

Terzioğlu, N. (2021). Repair motivation and barriers model: Investigating user perspectives related to product repair towards a circular economy. *Journal of Cleaner Production*, 289, 125644. https://doi.org/10.1016/j.jclepro.2020.125644

van der Velden, M. (2021). 'Fixing the World One Thing at a Time': Community repair and a sustainable circular economy. *Journal of Cleaner Production*, 304, 127151. https://doi.org/10.1016/j.jclepro.2021.127151

Annexes

ANNEX A – Greek Workshop

Participants list

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ANNEX B – Spanish Workshop

Agenda of the workshop

8:30 - 9:00 - **Registration of participants**

9:00 - 9:15 - **Welcoming remarks**

- ***Isaac Peraire**, Director of the Catalan Waste Agency, Department of Climate Action, Regional Government of Catalonia, and interim director of MedWaves*

9:15 - 10:00 - **Opening plenary**

The event agenda and the JUST2CE research project will be presented. In addition, the most relevant elements and data collected during the research and surveys conducted prior to the workshop will be shared to provide context for the day.

- *Moderator: **Magali Outters**, Team Leader, Policy Area, MedWaves*
- ***Mario Pansera**, Project Coordinator of JUST2CE: Presentation of the project and the concept of Just Circular Economy (9:15 - 09:30).*
- ***Núria Sau,** Project Manager, Andròmines:Ppresentation of the social entity Andròmines and their activities in waste management, training, intermediation, and inclusion (09:30 - 09:45)*
- ***Jeremie Fosse**, Co-founder and President, Eco-union: Presentation of survey results from key stakeholders and explanation of the workshop's functioning and organization (09:45 - 10:00)*

10:00 - 10:30 - **Coffee break**

10:30 - 12:30 - **Parallel Working Groups**

Parallel work in 3 thematic groups with the participants. Each thematic group will address the following questions:

- *Concept of Just Circular Economy*
- *Scenarios for transitioning to a Just Circular Economy in the medium and long term*
- *Identification of barriers and facilitators for this transition*
- *Proposed initiatives and actions to be carried out.*

12:30 - 13:00 - **Closing Plenary**

A concluding session that will facilitate the sharing of content and conclusions drawn by the different workgroups.

- *Representatives from each workgroup: **Matías Ibañez,** Project manager JUST2CE; **Jeremie Fosse**, Co-founder and President, Eco-union: Presentation of event conclusions; and Carolin Massen, researcher, Autonomous Univeristy of Barcelona*
- *Concluding remarks: Magali Outters, Team Leader, Policy Area, MedWaves*

13:00 - 14:30 - **Lunch**

Participants:

- ***Francesc Magrinyà**, Researcher and professor, Research Institute for Sustainability Science and Technology – Polythecnical University of Catalonia (UPC)*
- ***Raúl Velasco-Fernández**, PhD and researcher, Institute of Environmental Science and Technology / Instituto de Ciencia y Tecnología Ambientales (ICTA), Autonomous University of Barcelona (UAB)*
- ***Sergi Rovira i Pérez**, Researcher and professor, - Department of Materials Science and Engineering, Polythecnical University of Catalonia (UPC)*
- ***Alexandra Farbiarz**, Environmental Communicator, DeepDrop System. Professor Polythecnical University of Catalonia (UPC)*
- ***Alexandra Lucia Popartan**, PhD and professor, Climate Institute / Institut de Medi Ambient, University of Girona*
- ***Carolin Clara Massen**, Researcher, Autonomous University of Barcelona (UAB)*
- ***Oriol Segarra**, Founder and CEO, Bumerang*
- ***Marta Hernández**, Institucional Manager, Gremi de Recuperació de Catalunya*
- ***Josep Canals**, Secretary General, MedCities*
- ***Clara Campos Alberdi** , Officer , ZICLA*
- ***Frederic Clarens Blanco**, Director of the Waste, Energy and Environmental Impact Unit, Centro tecnológico EureCat*
- ***Maria José Pedragosa**, Co-founder and social entrepreneur, POPSICASE / NETVIVA*
- ***Lucille Giheneuf**, Communications Manager, PRIMA Foundation*
- ***Laura Ronquillo**, Project Officer, CONAMA*
- ***Miquel Vidal**, Circular Economy Coordinator, Fundació Formació i Treball*
- ***Núria Sau**, Project Manager, Andròmines*
- ***Rosaura Serentill**, CEO, Fundació Banc de recursos*
- ***Claudia Dakhil Carcovich**, Founder, Meet & Map*
- ***Xavi Comas Mora**, Senior Advisor, Ship2B*
- ***Enric Coll Gelabert**, Project Officer, Xarxa Ciudad i Pobles cap a la Sostenibilitat - Diputació de Barcelona*
- ***Yanina Kowszyk**, Senior Technical Advisor on Circular Economy in Peru, GIZ*
- ***Mireia Grifoll Cañellas**, Sustainable Development Manager, Directorate General of Environmental Policies and the Natural Environment – Regional Government of Catalonia. REsponsible of Circular Catalonia*
- ***Nati Yesares**, Representative of the Environment Area, Els Encants de Viladecans*
- ***Isabel D'Orto Altuna**, Environmental and outreach manager, Barcelona Activa*
- ***Maria Jose Tomas Sánchez**, Director, Department of Institutional Promotion and Territorial Cooperation – CDTI*
- ***Chaimae Essousi Oueld El Hadj**, Project Officer, Economic Strategy Area - Secretariat of Economic Affairs and European Funds, Regional Government of Catalonia*
- ***Laura Martínez Tribó**, Project Manager, TERSA Group, Matropolitan Area of Barcelona*
- ***Mairilia Acosta Dávalos**, Project Manager, FelizEsPoco*
- ***Karine Causse**, Socio-Environmental Systems consultanbt, Water, Environment and Business for Development*
- ***Ignasi Mateu** , Project Manager, Waste Catalan Agency / Agència de Residus de Catalunya (ARC)*
- ***Isaac Peraire**, Director, Waste Catalan Agency / Agència de Residus de Catalunya (ARC)*
- ***Jeremie Fosse**, Director and CEO, Eco-Union*
- ***Gerard Codina**, Project Officer, Eco-Union*
- ***Matías Ibáñez**, Project Manager JUSt2CE, Policy Area, MedWaves*

- ***Ramón Tormo**, Communications Officer JUST2CE, MedWaves*
- ***Octavi Domingo**, Project Manager, MedWaves*
- ***Giorgio Mosangini**, Team Leader, Green Entrepreneurship & Civil Society, MedWaves*
- ***Ana Ibáñez**, Project Manager, MedWaves*
- ***Mario Pansera**, Project Coordinator JUST2CE, University of Vigo / UAB*
- ***Magali Outters**, Team Leader Policy Area, MedWaves*
- ***Alessandro Miraglia**, Team Leader Networking & Communications Facility, MedWaves*
- ***Marta Casanovas**, Community & Engagement Officer, MedWaves*
- ***Jesús Maestro**, Coordinator of Operations, MedWaves*
- ***Hichem Salem**, Project Manager, MedWaves*
- ***Cristina Villalba**, Administration Officer, MedWaves*
- ***Kimberly De Miguel**, Project Manager, MedWaves*
- ***Samia Bentekaya**, Administration Officer, Medwaves*
- ***Pedro Fernández**, Project Manager, Policy Area, Medwaves*
- ***Clara Alberola**, Communication Officer, Medwaves*
- ***Joanna Grodzka**, Communication Officer, Medwaves*

Results of the Survey (Pre-Workshop activity):

Invited participants to the workshop - this includes both those who were able to attend and those who were invited but could not attend - from different sectors of the circular economy cluster were identified and were encouraged to answer an online survey (approximately 60 people). Over three weeks, the online questionnaire was kept open via an online formulary.

- **Key elements of the survey**

These are some of the key elements of the online survey:

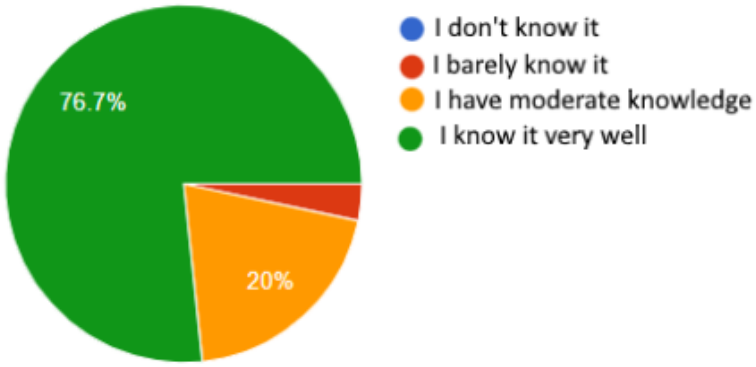
- A total of 30 participants answered the survey.
- Balanced gender ratio on the responses.
- 63% (19) of the respondents represented organizations located in Catalonia, the rest from other areas of Spain.
- Slight imbalance at sectoral level:
  - Private sector (companies): 27%.
  - Academia/research: 23%.
  - Third sector: 30%.
  - Public administration: 13%.
- 23% (7) of the organizations represented by the people who responded to the survey are active locally, 8 (27%) are active in Catalonia, another 8 at national level and 37% (11) of them are active internationally.
- Slight disparity in relation to the sectors of activity of the entities represented by the respondents. Most of the respondents belonged to recycling or waste management organisations (37%), followed by organisations from the agri-food and textile sector (23%), industry, water treatment/supply (23%) and electronics (10%). In addition to a number of activities other than those mentioned above, such as education, finance, consultancy, hotel and

catering.

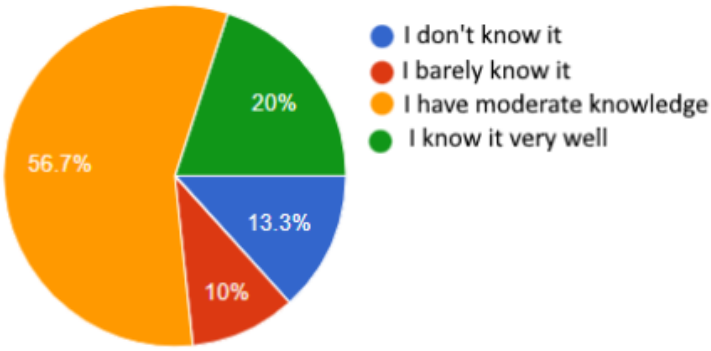
- **Overview of the survey**

The respondents' answers to following questions are presented below:

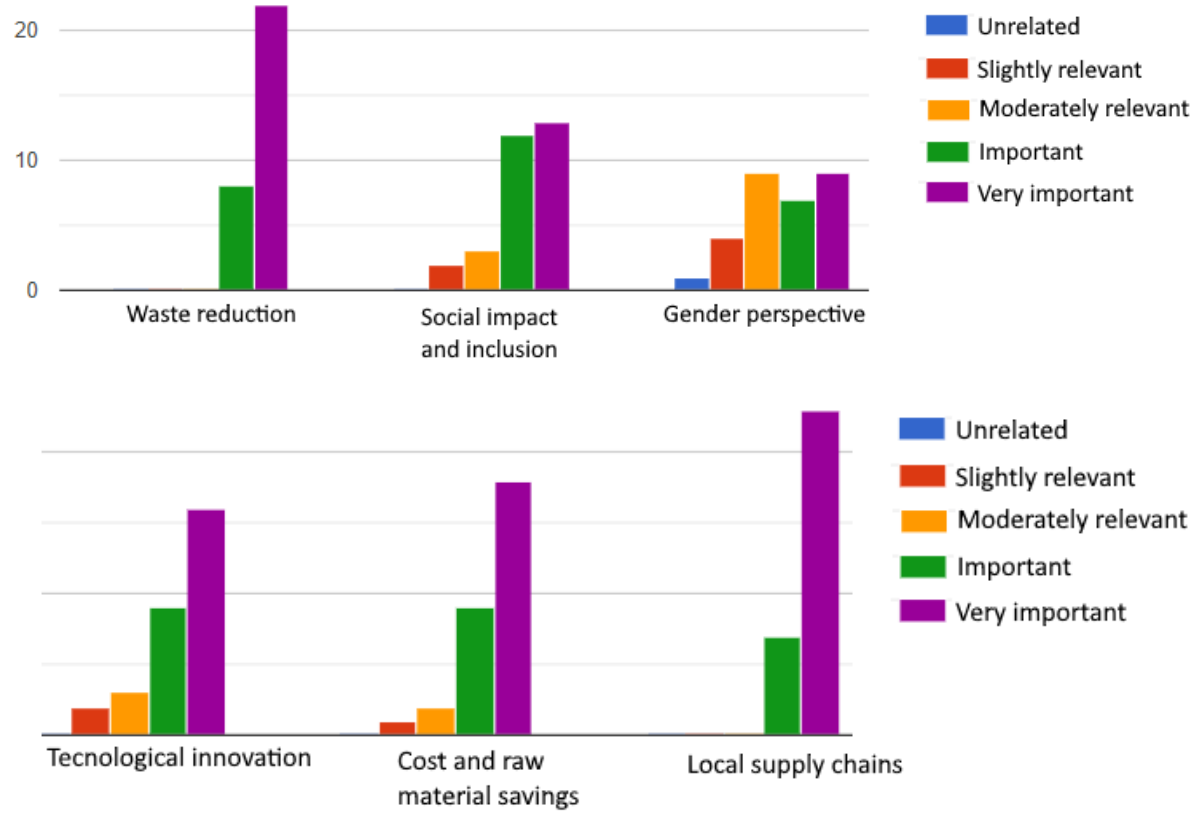
Are you familiar with the concept of Circular Economy?



Are you familiar with the concept of Just Circular Economy?



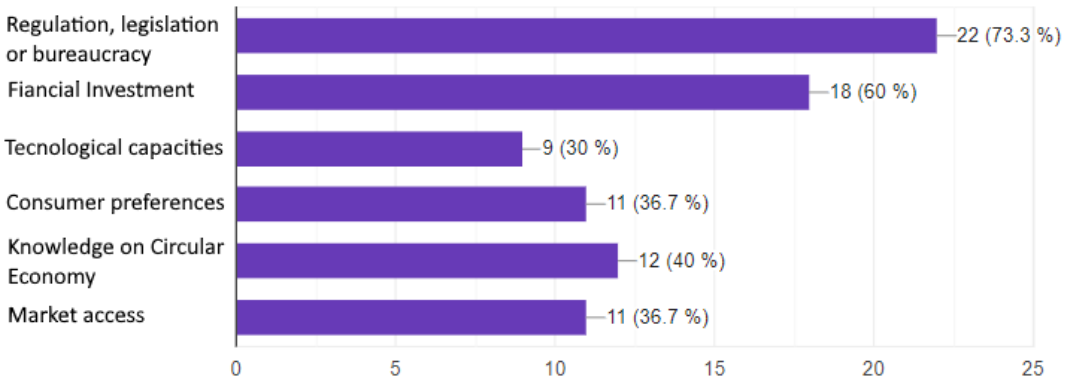
How relevant are the following elements for Economic Circularity?



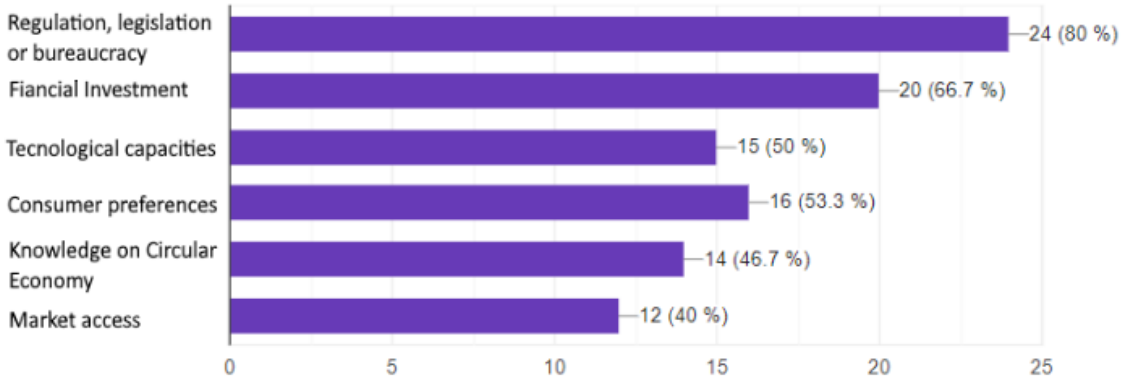
Additionally, respondents mentioned other elements with significant importance for the circular economy concept:

- Changes in consumption patterns, de-growth, relations with the global south, reduction of overproduction.
- Eco-design, producer responsibility, right to repair, etc.
- Bio-economy/materials and organic matter
- Corporate social responsibility
- New holistic, symbiotic, collaborative, circular business models,
- Policy/regulation
- Ecosystem regeneration
- Environmental and social aspects of the value chain integrated in circular design
- Corporate accountability
- Political will and intervention

Which of the following do you consider to be the main barriers to the implementation of a Circular Economy?



What do you consider to be the main enablers for the implementation of a Circular Economy?



Additionally, respondents pointed out to other barriers and enablers with significant importance for the development of fairer circular economy models:

- New production models, use and optimisation of resources
- Financial support for start-ups, SMEs and innovative companies
- Shortage of materials
- Green taxation
- Synergies of services, entities and sectors
- Consumer awareness
- Enhancing and exploiting local knowledge
- International collaboration and information sharing
- European regulation
- Greenwashing
- Lack of competitiveness of the circular economy compared to the linear economy
- Lack of public and political leadership
- Classical economic models of extraction and continuous growth

- **Overall conclusions**

In general, respondents had a high knowledge of the concept of Circular Economy, while they have a medium-low knowledge of Just Circular Economy. In addition, technical, technological and material aspects tended to be associated with the concept, yet a high level of importance was attributed to economic and political issues in relation to the development of circular economy and/or fair circular economy approaches in the near future.

ANNEX C – Workshop Programme Cape Town & Johannesburg

List of participating Institutions

Time	Programme
08:00 - 09:00	Registration and Morning Refreshments
09:00 - 09:10	Welcome by Katharina Gihring (ACEN)
09:10 - 09:25	Presentation of JUST2CE project by Dr Andrea Jimenez (University of Sheffield – recording)
09:25 - 09:45	Circular Economy in South Africa by Katharina Gihring (ACEN)
09:45 - 09:55	Introduction to Decision Support System User Perception by Professor Andrea Genovese (University of Sheffield – recording)
09:55 - 10:10	Framing the roundtable discussions by Katharina Gihring and Facilitators (ACEN & UAB)
10:10 - 10:20	Introduction by stakeholders on each roundtable
10:20 - 12:30	Roundtable Discussions by stakeholders with facilitators
12:30 - 12:55	Consolidation by stakeholders with facilitators
12:55 - 13:00	Closing and next Steps by Katharina Gihring (ACEN)
13:00 - 14:00	Lunch

Cape Town	
Institution	**Sector**
University of Cape Town	Academia and Research
Taking Care of Business	Social Enterprise
CSIR	Government
ICLEI Africa	Not for profit
African Circular Economy Network	Facilitator
City of cape town	Government
FoodForward South Africa	Civil Society
African Circular Economy Network	Civil Society
University of Cape Town	Academia and Research
ACEN	NPC

Utrecht University/ACEN	Academia and Research
WWF South Africa	Non Governmental organisation
Afrcan Circular Economy Network	Civil Society, Not-for-profit
ACEN	Academia and Research, Industry
Circular-Vision	Consultant
Muizenberg Community Kitchen	Food Security
V&A Waterfront	Industry
University of the Western Cape	Academia and Research
UWC	Academia and Research
University of Western Cape	Academia and Research, Government
University of the Western Cape	Academia and Research
University of Cape Town, Graduate School of Business	Academia and Research
The Autonomous University of Barcelona	Academia and Research
SOLVE@Waterfront	Industry
GreenCape	NPO
ACEN	NPO
Stellenbosch University/ACEN	Academia and Research
Universiry of the Western Cape	Academia and Research
University of Cape Town	Academia and Research
University of Cape Town	Academia and Research
University of Cape Town	Academia and Research

Johannesburg	
Institution	**Sector**
Extrupet	Industry
EU Delegation to South Africa	Government
CSIR	Academia and Research
WWF South Africa	Civil Society
Slow Textiles, Startup Kasi	Industry, Civil Society
Big Circle Studios	Civil Society
Embassy of the Netherlands in South Africa	Government
ACEN	Academia and Research
University of Johannesburg	Academia and Research
United Nations Industrial Development Organization (UNIDO)	Intergovernmental Organization
Faded Black Innovations	Civil Society
City of Johannesburg Municipality	Government
GDARD	Government
GDARDE	Government
Institute for Security Studies	Civil Society
Department of Science and Innovation	Government
City of Johannesburg	Government
Utrecht University/ACEN	Academia and Research
ACEN	NPO

Tshikululu Social Investments	Industry
Earthlife Africa	Civil Society
AFD	DFI
City of Johannesburg Municipality	Government
Pikitup	Government
Pikitup	Government

The below table lists projects, programmes and policy recommendations from the backcasting exercise. However these are merely suggestions and would need to be further developed. For example, to create regenerative food systems more than upskilling and capacitation as well as accessibility of technologies are required. This will also require a change in how food is produced, harvested, processed, packaged, transported, consumed and taken care of if any waste has been created along the value-chain. The agricultural sector needs to be made more inclusive for small-scale farmers for them to access markets, while food needs to be redistributed in a different manner. Additionally, all embedded resources like water, energy, nutrients need to be accounted for. Projects, programmes and policies marked with an asterisk were not included in the main body of the report.

Project/Programme/ Policy Description	**Aim**
Governance	
Corruption is a massive barrier to drive socio-economic development and a just CE transition in South Africa. Servant leadership should be embedded and implemented in all governmental spheres. Importantly, active participation by citizens is required.	The aim is to decease and ultimately eradicate corruption as much as possible by creating transparency and accountability.
Education & Capacitation	
Revise education by reviewing the curriculum to integrate the CE and systems thinking at all levels from early childhood development centres to tertiary education including vocational training. Revising and re-developing the curricula must go beyond teaching about the CE but needs to be linked to future skills and the type of leadership that is required in the public and private sector to allow for a just CE transition. The curriculum should integrate inner development goals and needs to be developed alongside the private and public sector to create applicable skills and knowledge.	The South African educational system has integrated the CE, where the all educational intuitions are mandated to incorporate CE content and pedagogy in their teaching curriculum. Specific CE degrees/vocational trainings are being developed.
Develop graduation adoption programmes similar to a trainee program for graduates to gain experience and to prepare them for work	Reduction of youth unemployment
Develop skills training to empower small and medium-sized Enterprises (SMEs) on appropriate CE business models.	Enable local businesses to develop and implement new business models.
Develop and capacitate government officials to fulfil their mandate and integrate CE into strategies, policies, tenders etc.	Supporting the public sector in achieving it's constitutional mandate.
Research	
Large cross-sectored quantitative study which identifies sectoral and cross-sectoral CE interaction opportunities.	This would include mapping current and ongoing projects, programmes, knowledge and resources. Biggest CE opportunities and risks areas have been identified and quantified (focus areas for intervention in SA)

Project/Programme/ Policy Description	Aim
Increase investment in research to benefit South Africa's just circular development.	To further a functional national system of innovation systems where funds are strongly redirected towards sustainability and impact of society.
Collect and create accessible databases that contribute to a just CE acceleration This would require developing social, environmental and economic indicators, which are applicable to South Africa. Data could be used for example in material passports.	Measure 'true' circularity of all products and services to inform evidence-based decisions/strategies.
*Conduct research to better understand human behaviour around engagement with resources e.g., plastic waste	Better understanding human behaviour (drivers and barriers) in the South African context.
Research on CE driven public procurement	Identifying the opportunities to drive the CE through public procurement.
Roadmaps, Strategies and Policies	
Develop an evidence-based inclusive South African CE roadmap based on a just CE framework, which has been adopted by all SA government and is building on the forthcoming Science, Technology and Innovation (STI) led cross-sectoral Circular Economy Roadmap, National Development Plan 2030, Operation Phakisa and other ongoing initiatives such as Eco-Industrial Parks Programme and Circular Innovation South Africa, Circular South Africa etc. The roadmap should be inclusively developed and needs to be implemented alongside the public and private sector. Example of current initiatives and potential action points which should be integrated into the just CE roadmap are: STI integrated into all industries and government to inform strategy Policy that public procurement is CE based Expand the Extended Producer Responsibility (EPR) policy to other materials	Develop South African just CE roadmap and integrated into NDP 2030, build by and for South Africans based on evidence. All governmental procurement is CE led
Initiate and implement the STI-led cross-sectoral Circular Economy Roadmap of the Department of Science and Innovation.	Appropriate and context specific STI solutions for the private and public sector which accelerates and enables a CE in South Africa.
Implement the Waste Picker Integration Guidelines.	Acknowledging of reclaimer's contribution and creation of a decent work environment with fair compensation.
*Policy on taxes to accelerate a just CE transition.	National Treasury to direct environmental taxes to the CE transition. Tax reduction/incentives for companies that incorporate CE in products/services.
*Policy on materials passports, right to repair and planned obsolescence policies linked to National Waste Management Strategy 2020.	Achieving zero landfilling
Policy on compulsory and electronic voting > ease of voting > youth voting (so assuming everyone has access to technology)	Every South Africa is participating during elections. Voters need to register and submit a blank or filled ballot.
Awareness and Engagement	
Build back better' and 'build back trust': National awareness campaign through social media and traditional media to reach most citizens around a just CE. Leaders need to walk the talk, which links back to servant leadership.	Creating back trust of the government.
Science communication is required to move the CE from a theoretical to a practical framework, where consumers are properly informed. The suggestion was made to develop a sustainable consumer framework with citizens alongside experts. It is important to connect theory to implementable projects, between research, public and private sector, which also requires to connect potential innovations to the right sector.	Enable for everyone to participate in the debate and make evidence-based decisions.

Project/Programme/ Policy Description	Aim
Economic Sectors and New Business Models	
Built Environment Existing, underutilised or unused infrastructure to be reviewed to assess which can be revived for accommodation and schooling etc, which may require the revising of regulations or local bylaws. Upgrade the informal settlements in terms of housing but also nodes of community upliftment including social and economic opportunities with nature at the centre of design, with circular and just centered approached (green building guidelines and sustainable urban development). Creation of material banks where construction and demolition waste are being reused.	Create a circular build environment, for resilient, liveable and safe cities and places of living.
Transport Creating mobility for all and moving freight from road to rail. This requires reliable, safe, accessible and affordable infrastructure.	Create a sustainable transport sector for South Africa.
Food Systems Advancing a sharing economy in the agricultural sector to enable access to technology for small to large scale farmers, which will also require capacitation. Creation of resilient and decentralised food systems that make nutritious food accessible. Increased locally sourced products in retailers.	Creation of regenerative food systems through indigenous and sustainable farming practices, combined with accessibility in technology and capacitation.
Finance Develop appropriate financing and support mechanisms to enable the transition.	Support the finance sector to realise the opportunities of a just CE and enable new financing tools.
Healthcare Produce and provide affordable and effective medicine available that can draw on indigenous knowledge and medicinal plants.	Make health care actual human care, which is accessible to people.
***Waste** Roll our separation at source in urban areas Construction of Material Recovery Facilities	Separation at source should be implemented in each metropolitan area, where the waste picker integration guidelines are embedded. Diversion of waste from landfills and extraction of materials for secondary use.
***Water** Create new water opportunities Clean-up of existing waterways and tackle acid mine drainage	SA has decoupled development from water consumption
Development and piloting of new CE business models Create business models that drive a just CE transition. For example, refill products as services, allow for bulk refill and develop chemical leasing. Energy can be exchanged as a currency.	Develop and implement new CE business models which take humans into account.
Communities and Municipalities	
Identify a clear vision of what a circular SA city looks like such as neighbourhoods with renewable energy, circular water systems, community gardens, open spaces and parks that are safe. Such a vision could be implemented through community projects that focuses on urban greening including urban agriculture, water, recycling and maintenance of infrastructure.	Develop a circular SA city vision.
Each metro is developing its circular city roadmap based on the circular SA city vision and the CE roadmap.	Metropolitans are actively engaged in implementing the circular SA city vision.
Create safe and accessible co-working space for citizens including product libraries and product swopping places.	Make cities places of connection, creativity, innovations, where engagements are facilitated and spaces for sharing, repairing of goods and knowledge is pursued. Community ownership should be driven.

Project/Programme/ Policy Description	Aim
Partnerships and Collaborations	
Create strong collaboration between the public and private sector to transition to a just CE	Strengthen Public-private partnerships.
Reduce conflict and reduce risk of significant conflict by defusing geopolitical risks, which requires better international cooperation.	Achieve more global cohesion.
*Create a circular fashion pact	Transitioning the textile sector to a circular one
Standardisation and Accreditation	
Engage global best practice and conceptualise CE Standard with South African Bureau of Standard (SABS) to measure circularity of all products and services. It is important to note that standards and definitions might also be counterproductive as these might not be applicable to each context and sometimes create loop-holes for circular washing.	Standards can support in measuring 'true' circularity.
Accelerate and enhancing the work of the South African Plastics Pact by standardising interchangeable reusable packaging; product packaging (makes recycling easier) and phasing out of problematic packaging.	Support the work of the South African Plastics Pact: Target 1: Taking action on problematic or unnecessary plastic packaging through elimination, redesign, innovation or alternative (re-use) delivery models Target 2: 100% of plastic packaging to be reusable, recyclable or compostable* by 2025 Target 3: 70% of plastic packaging effectively recycled Target 4: 30% average recycled content across all plastic packaging

ANNEX D: UK Workshop

The initial text for the day as agreed by USFD and Reyt Repair is below:

Community Repair Open Day @ Reyt Repair

JUST2CE
A Just Transition to Circular Economy

The JUST2CE project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101003491

Thursday 27th April 2023 10:00-16:00

Abbeyfield Park House

S4 7AT

Reyt Repair is a community repair shop based in Pitsmoor, Sheffield, powered by a team of volunteers who are on hand to repair clothes, furniture and electricals. In collaboration with researchers from the Sheffield University Management School, Reyt Repair will be hosting an ***open day of repair*** *on Thursday 27th April.* ***The event is free and open to all*** *on a drop-in basis, featuring two structured repair workshops where attendees can learn how to repair common household items, as well as volunteers on hand throughout the day to provide repairs and expert consultation.*

10am – 4pm *[Throughout the day]*	*Free electrical, furniture and clothing repairs and advice provided all day by experienced Reyt Repair volunteers.*
11am – 12.30pm	***Repair skills workshop 1****: Learn to fix a leaking tap, a damaged cable and replace a plug (for women and gender minorities)*

12.30pm – 2pm	*Lunch and refreshments served*
2pm – 3.30pm	***Repair skills workshop 2****: Learn to fix a hole in your pocket, replace a missing button and turn up your trousers*

Bring along your items for repair or come and join one of the workshop sessions! Refreshments and lunch will be provided! Workshops are open to all and ***we particularly encourage attendance from those who may feel discouraged from engaging in repair activities*** *such as women, and people from marginalised backgrounds. Places will be allocated on a first come first serve basis. Workshop 1 is led by Ange Droz and this session is for women and gender minorities.*

The event is funded through JUST2CE, an EU Horizon 2020 funded project that is exploring just transitions towards a circular economy. The research team will be collecting data throughout the day and you may be asked if you would like to participate in a short interview or survey.

For any queries, please contact Dr Ben Purvis (b.purvis@sheffield.ac.uk), or get in touch with Reyt Repair directly.

The event was described in the participant information packs as follows:

Community Repair Open Day @ Reyt Repair

27th April 2023 10:00 - 16:00

Volunteer Pack

On behalf of the research team, thank you for taking part in the Community Repair Open Day, organised by Sheffield University Management School and Reyt Repair. However long you are here throughout the day, we hope you find the event both enjoyable and insightful. The structure of the day is given below.

Timings for the Day

JUST2CE
A Just Transition to Circular Economy

10am – 4pm *[Throughout the day]*	*Free electrical, furniture and clothing repairs and advice provided all day by experienced Reyt Repair volunteers.*
11am – 12.30pm	***Repair skills workshop 1****: Learn to fix a leaking tap, a damaged cable and replace a plug*
12.30pm – 2pm	*Lunch and refreshments served*
2pm – 3.30pm	***Repair skills workshop 2****: Learn to fix a hole in your pocket, replace a missing button and turn up your trousers*

This workshop is funded through JUST2CE, an EU Horizon 2020 funded project that is exploring just transitions towards a circular economy. ***We would be interested in capturing your opinions on what role community repair could play in the transition to a sustainable future by filling in and returning the following form****.*

You do not have to take part, or you could withdraw at any time if you wish. Any data collected would be used to inform future outputs from the research team, including reports from the workshop, publications, and presentations. Any information collected about you will remain confidential, be anonymised, and will be stored in an encrypted form on a password-protected computer. If you have any questions or concerns, please do raise these to the research team, who are identifiable by their lanyards and ID cards.

If you have any further queries related to today's workshop, or the research project, please speak to any member of the research team today, or contact later using the following details:

Prof Andrea Genovese *a.genovese@sheffield.ac.uk*

Dr Ben Purvis *b.purvis@sheffield.ac.uk*

Dr Tim Else *t.else@sheffield.ac.uk*

Dr Andrea Jimenez *a.jimenez@sheffield.ac.uk*

Sheffield University Management School, Conduit Road, S10 1FL, Sheffield

Thank you again for attending today's workshop and we hope you find the session enjoyable.

List of Participants

Several categories of participants were present which included the core research team, USFD volunteers, Reyt Repair coordinators and volunteers, and research participants from the general public. We note the following named individuals.

Core research team:

Prof Andrea Genovese, Sheffield University Management School

Dr Ben Purvis, Sheffield University Management School

Dr Tim Else, Sheffield University Management School

Dr Andrea Jimenez, University of Sheffield Information School

Dr Ram Venkataraman Guru, Sheffield University Management School

USFD Volunteers:

Azar Mahmoumgonbadi, Sheffield University Management School

Tommaso Calzolari, Sheffield University Management School

Jai Verma, Sheffield University Management School

Dr José Bruno Fevereiro, University of Sheffield Information School

Reyt Repair:

Gareth Coleman, Coordinator

Individual participants and volunteers have not been named individually.

ANNEX E – Italian Workshop

Please tick the appropriate boxes	Yes	No
Taking Part in the Project		
I have read and understood the attached information sheet, or the project has been fully explained to me		
I have been given the opportunity to ask questions about the project.		
I agree to take part in the project.		
I agree to featuring in any photographs taken throughout the workshop. These may be featured in reports on the findings, such as project deliverables and journal articles.		
I understand that my taking part is voluntary and that I can withdraw from the study at any time. I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.		
How my information will be used during and after the project	**Yes**	**No**
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.		
I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.		
I understand and agree that other authorised researchers (from the JUST2CE project) will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.		
I understand and agree that this interview will be transcribed on a word processing file, encrypted with a strong password. This will not be stored on individual researchers' computers, but on a protected University server. The data will be kept till the end of the JUST2CE project (31/08/2024), plus an additional two years. After this time interval, data will be destroyed.		
So that the information you provide can be used legally by the researchers	**Yes**	**No**
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.		
Consent to record the interviews	**Yes**	**No**
I agree that my interview can be recorded and agree that this data will be preserved as specified in the above section "How my information will be used during and after the project"		

Name of participant	Signature	Date
Name of Researcher	Signature	Date

Workshop Programme

As evidenced before, the National workshop held in Naples at the University of Parthenope has been articulated in two sections: one dedicated to the e-waste management in the Campania region (coordinated by Prof. Renato Passaro, Research Unit of the Parthenope University of the JUST2CE project) and the other one to the industrial contaminated site of Taranto. (coordinated by Prof. Stefania Barca, Research Unit of the University of Santiago de Compostela of the JUST2CE project). Each section developed a dialogue with a multiplicity of actors - institutional, research, civil society, local communities - on the implications of the results emerged in the case studies useful for the orientation of policies, planning and management of transition processes to a JUST circular economy.
The Programme of the Workshop 1 about e-waste management in Campania Region has been the following:

ITALIAN NATIONAL WORKSHOP 1 - Programme
8:30 – Welcome coffee;
9.00 – Welcome address, **A. Garofalo**, Rector of the Parthenope University of Naples;
9.10 – Presentation of the JUST2CE project, **A. Genovese,** University of Sheffield, JUST2CE research unit;
9.20 – Presentation of the Research report "The WEEE management system in Campania region", **R. Passaro**, Parthenope University Naples, JUST2CE research unit;
9.40 – **11.30** Opening of the first roundtable;
11.35 – 13.00 Opening of the second roundtable;
13.00 Concluding remarks: emerging scenarios and policy implications (UNIPARTH JUST2CE research unit);
13.30-14.30 - Lunch Break.

List of Participants to the two roundtables

Roundtable 1 (09.40 - 11.30)
The formal WEEE management system in Campania: lights and shadows.
Panel coordinated by Prof. Renato Passaro
E.Armentano, Director of Balvano treatment plant - Riplastic SpA
A.Barretta, Head of Direction of Integrated Water and Waste Cycle - Campania Region
N.Corretto, Operations Director - A&C Ecotech srl
L.Fasolino, Director of ECOEM Consortium - Weee Collective Scheme
A.Grosso, Arpac - Regional Agency for Environmental Protection – Campania Region
F.Longoni, Director of the WEEE Italian National Coordination Center
R.Madonna, Founder of Remade in Sanità, citizens association
L.Pucci, National Scientific Board - Legambiente
V.Solari, ex Project Manager of the WEEE@school Project (ANCI)
M.Tammaro, Head of the Laboratory of Technologies for the Reuse, Recycling, Recovery and valorisation of Waste and Materials - ENEA research centre

Roundtable 2 - (**11.35-13.00)**
Is a model that better supports circularity for the management of e-waste possible?
Panel coordinated by Prof. Sergio Ulgiati.
N.Denis, Manager of Reware, Cooperative and social company
F. Matrone, Zero WasteItaly (citizens association)
M.Odasso, Head of the Ri-generation project, Astelav srl
E.Somalvico, Director of the Master Executive "Environmental Crime & Terrorism Intelligence" (Carabinieri corps)