

**H2020 Coordination and Support Action
Grant Agreement 730313**

Synergic CE across European Regions

SCREEN

Deliverable D4.2

PROCEEDINGS OF WORKSHOP 2:

“Barriers and shortcuts to CE”

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This deliverable has been peer reviewed by: VELTHA (Carlo Polidori)

Table of Contents

1. Executive Summary	3
2. List of Participants	4
3. Agenda.....	8
4. Minutes.....	12
4.1. Welcome speech – <i>Ana Abrunhosa</i>	12
4.2. Introductory speech – <i>Inês Costa</i>	13
4.3. CE and European projects – <i>Keti Medarova</i>	15
4.4. Project SCREEN – <i>Carlo Polidori</i>	16
4.5. SCREEN Synergies.....	17
4.5.1 From local to cross regional synergies – <i>Marcello Colledani</i>	17
4.5.2 Self Assessment Tool for the investment readiness of EU regions – <i>Timoteo de la Fuente</i>	19
4.5.3 Round Table with <i>Bart Volkers, Marisa Almeida, Nillo Halonen, Marcello Colledani</i> and <i>Timoteo de la Fuente</i>	20
4.5.4. Q&A.....	23
4.6. Barriers and shortcuts to CE – <i>Inês Costa</i>	26
4.6.1 Round Table with <i>Inês Costa, Jarno Laitinen, Bernd Janson</i> and <i>Carlos Vieira</i>	33
4.7. The use of article 70 of ESI Funds – <i>Katja Reppel</i>	39
4.8. Q&A.....	44
4.9. Final remarks – <i>Carlo Polidori</i>	46
5. SCREEN Policy Lab Meeting.....	48

1. Executive Summary

This document reports the proceedings of the third International Workshop (“Barriers and shortcuts to CE”), held on the 22nd of February 2018 – Portuguese Permanent Representation to the European Union, Brussels.

The aim of the workshop was to ensure an exchange of information among project partners and external public and private stakeholders on how to overcome barriers to the development of trans-regional CE initiatives and find targeted shortcuts.

As a priority, the workshop also aimed at stimulating the preparation of future collaborative projects and synergies aligned with the strategic areas identified by the SCREEN partners (within the Agriculture & food, (Smart) Packaging, (Resources from) water and wastewater, Biobased materials & biotechnology, Manufacturing and re-manufacturing, (Bio)Waste management and Construction domains).

Finally, the SCREEN Policy Lab had also a dedicated session addressing the project’s Memorandum of Understanding, which has the aim of paving the way to the future synergic application of funds for cross regional projects dealing with CE.

2. List of Participants



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No730313



Participants

3rd SCREEN International workshop
Barriers and shortcuts to Circular Economy
Brussels, 22 February 2018

	Surname	Name	Organization
1	Abrunhosa	Ana	CCDRCC (PT)
2	Aizpurua	Nerea	RTD European Commission
3	Alakerttula	Johanna	Council of Tampere Region (FI)
4	Albering	Hama	Province of Limburg (NL)
5	Alkan	Cansu	EURADA
6	Almazán Sotillos	Irene	Delegation of Castilla y León to the EU
7	Almeida	Marisa	CTCV (PT)
8	Almeida	Carlos	Fibrenamics - University of Minho (PT)
9	Arends	Genevieve	Provincie Noord-Holland (NL)
10	Astiz	Fermin	Government of Navarre (ES)
11	Avila Maldonado	Fernando	FINNOVA
12	Barreiros	Marta	CELPA (PT)
13	Bergamin	Sara	Veltha (BE)
14	Bigey	Gaston	Nexa (RE)
15	Bobeanu	Gabriela	North-East Regional Development Agency (RO)
16	Caimi	Valentina	Regione Lombardia (IT)
17	Caldeira	João Carlos	LNEC (PT)
18	Canuti	Leonardo	EURADA
19	Cardigos	Frederico	Azores EU office (PT)
20	Catgiu	Chiara	AFIL (IT)
21	Cavka Luciani	Metka	CEPI



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Participants

3rd SCREEN International workshop
Barriers and shortcuts to Circular Economy
Brussels, 22 February 2018

	Surname	Name	Organization
22	Colledani	Marcello	AFIL (IT)
23	Costa	Inês	Ministério do Ambiente (PT)
24	Dastoli	Pier Virgilio	European Movement Italy (IT)
25	De la Cerda	Mónica	Regional Directorate for Science and Technology - Government of the Azores (PT)
26	De La Fuente	Timoteo	DG GROW
27	De Vega Fernández	Isabel	Junta Extremadura (ES)
28	Deligiannakis	Michail	Region of Crete (GR)
29	Di Padua	Irene	ECRN
30	Di Filippo	Alfredo	Università della Tuscia (IT)
31	Dries	Maes	Vlaamse Overheid (BE)
32	Ferreira	Victor	Cluster Habitat (PT)
33	Fitzsimons	David	European Remanufacturing Council
34	Franca	Margarida	CCDRC (PT)
35	Gabryelak	Ewa	Regional Office of the Lodzkie Region in Brussels (PL)
36	Gallina	Giorgio	Regione Lombardia (IT)
37	Giannisi	Silvia	Veltha (BE)
38	Gonçalves	Rui	REPER (PT)
39	Gredis	Panos	European Public Law Organization (EPLO)
40	Grzelczak	Bogumiła	Regional Office of the Lodzkie Region in Brussels (PL)
41	Halonen	Nillo	Tampere University of Technology (FI)
42	Hay	Viola	KTN (UK)



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Participants

3rd SCREEN International workshop
Barriers and shortcuts to Circular Economy
Brussels, 22 February 2018

	Surname	Name	Organization
43	Hazenberg	Tjeerd	Provincie Fryslan (NL)
44	Irujo	Mikel	Government of Navarra (ES)
45	Jason	Bernd	ZENIT (DE)
46	Jorge	Teresa	CCDRCC (PT)
47	Klimek	Wojciech	EC DG RTD
48	Lagarto	Vasco	Cluster TICE (PT)
49	Laitinen	Jamo	Centre for Economic development, transport and the environment (FI)
50	Lembo	Francesco	ACR+
51	Lepore	Alessandra	DG REGIO
52	Lopez Piñero	Francisco	Junta Extremadura (ES)
53	Marques	Ivânia	Instituto Pedro Nunes (PT)
54	McInnes	Christopher	European Association of Development Agencies
55	Medarova-Bergstrom	Keti	EASME
56	Mena	Carmen	EASME
57	Micheaux Naudet	Philippe	ACR+
58	Miguelsanz Villanueva	Irene	Delegation of Castilla y Leon to the EU (ES)
59	Musso	Marco	Regione Piemonte (IT)
60	Pelayo	Esteban	European Association of Development Agencies (EURADA)
61	Plees	Dirk	Province of Limburg (NL)
62	Podgórski	Marcin	Regional Office of Lodzkie Region (PL)
63	Polidori	Carlo	VELTHA ivzw (BE)



Synergic Circular
Economy across
European regions



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Participants

3rd SCREEN International workshop
Barriers and shortcuts to Circular Economy
Brussels, 22 February 2018

	Surname	Name	Organization
64	Quintais	Ana	CCDR (PT)
65	Rama	Mathieu	RREUSE
66	Recchioni	Marco	European Commission - EASME
67	Reppel	Katja	European Commission, DG REGIO
68	Rodrigues	Alexandra	CCDR (PT)
69	Rossi	Ferdinando	Regione Lazio (IT)
70	Rotili	Emanuele	Regione Lazio (IT)
71	Salanueva	Raúl	Government of Navarre (ES)
72	Silva	Natalia Susana	FRCT - Regional Fund for Science and Technology (AZORES, PT)
73	Tanasa	Ramona	North-East Regional Development Agency (RO)
74	ten Wolde	Arthur	Ecopreneur.eu
75	Tocha	Rui	CLUSTER Eng. & Tooling (PT)
76	Tuffs	Richard	ERRIN
77	Van Ermen	Raymond	European Partners for the Environment
78	Vieira	Carlos	CELPA (PT)
79	Volkers	Bart	Province of Friesland & WaterAlliance & Circulair Friesland (NL)
80	Von Weikersthal	Louisa	Representation of the Free State of Bavaria to the EU (DE)
81	Vos	Eric	Province of Fryslân (NL)
82			
83			
84			

3. Agenda



SCREEN - Synergic Circular Economy across European Regions

3rd SCREEN International workshop

“Barriers and shortcuts to Circular Economy”, Brussels, 22 February 2018

SCREEN is an H2020 coordinating and supporting action participated by 17 European regions, aiming at the definition of a replicable systemic approach towards a transition to Circular Economy in EU regions within the context of the Smart Specialization Strategy. The project also deals with the identification and implementation of operational synergies between investments in research and innovation under Horizon 2020, the Structural Funds and the European Investment Funds.



Besides developing a common agreed approach to support a transition to a circular economy and to enhance existing smart specialization strategies of the involved regions, the project intends to develop some policy support advisory services to enable regions to invest EU funds in transnational value chains. Furthermore, the identification and implementation of operational synergies between investments in research and innovation under Horizon 2020, the Structural Funds and the European Investment Funds is also an important task of the project, addressed within the SCREEN Policy Lab.

Workshop Objectives

This third SCREEN International Workshop is organized by CCDRC Centro (Regional Coordination and Development Commission – Centro of Portugal), and aims at ensuring an exchange of information among project partners and external public and private stakeholders on how to overcome barriers to the development of trans-regional circular economy initiatives and find targeted shortcuts.

As a priority, the workshop will also aim at stimulating the preparation of future collaborative projects and synergies aligned with the strategic areas identified by the SCREEN partners (within the Agriculture & food, (Smart) Packaging, (Resources from) water and wastewater, Biobased materials & biotechnology, Manufacturing and re-manufacturing, (Bio)Waste management and Construction domains).

Finally, the SCREEN Policy Lab will have a dedicated session addressing the project's Memorandum of Understanding, which has the aim of paving the way to the future synergic application of funds for cross regional projects dealing with circular economy.

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International Workshop

Barriers and shortcuts to Circular Economy

Agenda

Date: 22 February 2018

Venue: Portuguese Permanent Representation to the European Union, Avenue de Cortenbergh N 12 – 1040 Brussels

The event will be in english only.

09h00 Registration

Registration of the participants

09h30 - 10h00 Welcome and introductory speech

Ana Abrunhosa (President of CCDR Centro Portugal)

João Pedro Matos Fernandes (Portuguese Ministry of Environment)

10h00 Circular Economy and European projects

Keti Medarova (EASME)

10h10 Project SCREEN

Carlo Polidori (Project Manager; VELTHA, ivzw, BE)

10h15 SCREEN Synergies

From local to cross regional synergies

Bart Volkers (Province of Fryslan; WaterAlliance, NL)

Marcelo Colledani (Intelligent Factory Lombardy Region Cluster, IT)

Self Assessment Tool for the investment readiness of EU regions

Timoteo De La Fuente (DG GROW)

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Round table

Marisa Almeida (CTCV – Technological Center for Ceramics and Glass, Centro Region, PT)

Nillo Halonen (Tampere University of Technology, FI)

Marcello Colledani (Intelligent Factory Lombardy Region Cluster, IT)

Timoteo De La Fuente (DG GROW)

Moderator: **Bart Volkers**

11h15 Q&A

Questions from the public to be answered by the round table speakers

11h25 Coffee break

Refreshments and food from the Portuguese cuisine

11h40 Round table

Barriers and shortcuts to Circular Economy

Inês Costa (Coordinator of the Portuguese Action Plan for Circular Economy; Ministry of Environment, PT)

Jarno Laitinen (Project Manager for the Finnish Contaminated Land Demonstration Program; Centre for Economic Development, Transport and the Environment Pirkanmaa, FI)

Bernd Janson (ZENIT - Zentrum für Innovation und Technik - Regional agency for R&D in North Rhein Westphalia, DE)

Carlos Vieira (CELPA – Association for the Paper Industry, PT)

Moderator: **Inês Costa**

12h40 Q&A

Questions from the public to be answered by the round table speakers

12h50 Conclusion remarks

Carlo Polidori (Project Manager; VELTHA, ivzw, BE)

13h00 Lunch break

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14h00 The use of article 70 of ESI Funds

Katja Reppel (DG Regio)

14h15 Q&A

Questions and answers regarding the previous presentation

14h25 – 15h00 SCREEN Policy Lab Meeting I (open to external audience)

Development of regional policies for Circular Economy

Tjeerd Hazenberg (Policy officer; Province of Fryslan, NL)

Research gaps and other issues raised during the SCREEN project: open discussion

Moderator: **Carlo Polidori**

15h00 – 16.00 SCREEN Policy Lab Meeting II (open to external audience)

Circular economy projects: additional assessment criteria proposed by SCREEN and availability of regional statistics

State of the art of the Memorandum of Understanding

Preliminary information about the next Policy Lab meeting

Moderator: **Carlo Polidori**

16h00 End of the meeting

The event is free to attend but registration is mandatory.

To make the registration follow the link: <https://goo.gl/forms/FwKxLLVvw2MtB0Ar1>

For more information contact:

Ana Quintais – ana.quintais@ccdrp.pt

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4. Minutes

Margarida Franca from CCDR Centro welcomes the delegation and introduces the first speaker of the meeting. She then leaves the floor to the opening speech.

4.1. Welcome speech – Ana Abrunhosa, President of CCDR Centro Portugal

The President of CCDR Centro acknowledges the presence of the other speakers, all DGs that are present, as well as SCREEN Advisory Board, the project manager – Carlo Polidori, and all participants, including Centro work team and SCREEN partners with whom Centro has been developing a very interesting collaborative approach to this important theme.

In Portugal, the importance of CE has been highlighted over the last few years as much in the national as in the regional level. It is the subject of one of the Thematic Agendas of Research and Innovation in Portugal and a major topic in the agenda of the Portuguese Ministry of Environment. As a clear sign of this importance, one of the speakers present here, today, is Inês Costa who is representing the Ministry (not able to come, as initially scheduled, due to last minute agenda problems) and who is the Coordinator of the Portuguese Action Plan for CE.

The Portuguese Action Plan for CE was approved last December and aims at the transition to CE, with all regions of the territory having an important role in the implementation of this plan. In fact, all regions have been summoned to be part of this work, having been assigned with the task of developing Regional Agendas, which include specific measures to apply CE principles, to mobilize strategic sectors in their territory and increase best practices in CE. In this way there is a guarantee of involvement of all relevant stakeholders setting up an inclusive governance model of these strategies.

Centro is one of the regions deeply involved in the work for the transition to CE. In the definition of the Region's Smart Specialization Strategy (RIS3), the principles of CE were explicitly included among the priorities. Within the RIS3 processes, it is foreseen the creation of a thematic group, transversal to the four innovation hubs, in order to discuss concrete actions and projects and to operationalize the circular transition.

CCDR Centro is also involved in a pilot project, which addresses Scientific Social Responsibility. This project aims at the promotion of an interaction between different entities. Entities from the Scientific and Technological System and the regional, sub regional and local entities (city counties). One of the objectives is to identify the good practices and projects where there is a collaborative and shared interaction within the scope of CE.

Centro has been selected, together with other five regions, in a total of 64 candidates, to be part of a pilot programme "Boosting the CE amongst SMEs in Europe" – a DG Environment initiative, which aims to help promoting and stimulating the SMEs of Centro Region in the transition to CE.

Finally, CCDR Centro is a partner in project SCREEN, whose consortium is gathered here, today, in the project's third international workshop. It was decided that the event should be organised in Brussels, in the same week of CE Stakeholders Platform Conference and of Industry day. This allowed the inclusion in the Programme of the third Policy Lab meeting, which will be open to the public.

After her speech, the President of CCDR Centro made a brief overview of the Workshop's agenda for the day.

4.2. Introductory speech – Inês Costa, Coordinator of the Portuguese Action Plan for CE - Ministry of Environment, Portugal

On behalf of the Portuguese Ministry of Environment Inês Costa read his speech:

"Ladies and Gentlemen,

The report on Global Risks launched by the World Economic Forum was clear: the global economic recovery has underlying structural problems - it grows, but less, and is increasingly unequal. Geopolitical and cybernetic risk increases, the result of an increasingly digital society and the mercy of so-called "populist" political currents.

But the biggest risks facing humanity (the first three, in fact) and which, according to the World Economic Forum itself, continue to grow from year to year are precisely environmental risks.

The year 2017 was the worst in extreme weather events; carbon dioxide emissions increased for the first time in 4 years; species extinction rates increased; the agricultural system is under strain; and the pollution continues in "business as usual" mode, harvesting 9 million lives and carrying a cost of billions of euros annually.

In Davos, world leaders - rulers, managers, thinkers - came together to discuss how to "Create a Shared Future in a Fractured World."

They talked about reinventing globalization. Of better financing. Of how technology will shape Humanity. They spoke of migrants and of economic and gender inequality. About capitalism. And, of course, we talked about climate change.

It took 40 years for environmental concerns, brought to the public first by MIT in 1972 and then by Brundtland in 1987, to take the stage in Davos. The centre is undoubtedly climate change: renewable energies, decarbonisation of financial assets, and a call for fighting perverse policies.

[Did they know, for example, that at global level consumers pay subsidies for fossil fuels a rate 38 times higher than the subsidies granted to renewables? (Al Gore dixit)]

It is very likely that we will continue to talk about more investment in renewable energy, energy efficiency, batteries and electric mobility.

And we understand the attractiveness: as the president of Renault said, "I have 200 million customers that will have to change cars, I do not know of a bigger business opportunity than this".

Money talks.

But MIT and Brundtland did not just talk about emissions of greenhouse gases. I recall the title of the report: The Limits to Growth.

And it is here that Davos (and we, to some extent) fail. We fail because we ignore the "elephant" in the room, referring it to parallel sessions (but it is there). The "elephant" is that the approach to decarbonisation remains (for now) hopelessly tied to solutions and an economic system that has given us the problem in the first place - we continue on solving problems using the same linear arguments and solutions.

The demand for energy in 2050 will be twice what we have today; and to achieve the renewable transition we will need 10 times more installed capacity. More demand, more production, more growth – more materials.

Materials whose known reserves are limited. That are in countries like China, America, and Africa. Extracted with a social and environmental over-cost that is rarely reflected in its price, and which still needs to be transported and processed. Materials whose recovery rate is extremely low - for if it is cheaper to "open mines" and buy anew!

This will not guarantee us a future.

Ladies and Gentlemen,

Decarbonisation and CE go hand in hand. And we cannot afford to wait for "turnkey" solutions from Davos, COP or even the Commission! For this problem - that of our survival as a species, because that is what it is about - the will and the solutions will have to come from us. From us consumers, from us researchers, from us companies, and from us public entities, together and in consonance with our context.

It was with this recognition that Portugal launched its own exercise on developing its take on an Action Plan for the CE, approved last December.

It was an interministerial effort, which forced us to engage in internal dialogue and with other peers - in Europe, in companies, with the regions themselves, with universities and with citizens. We did workshops, roadshows, public discussions: and we want to continue to do so. Because such a fundamental transition cannot be approached in "boxes" – it is a process that needs to be transversal, engaging and evolutive.

And it is this involvement that we want to see also, and especially, at the regional and local level. And we are already seeing it: for example, in the enthusiasm around the development of the Portuguese Regional Agendas for the CE – an important area of our Action Plan – in which CCDD-Centro is taking part and applying the knowledge gathered in projects such as SCREEN.

And Smart Specialization is of particular importance in this equation. Because if regions want to face a challenge such as climate change, their competitive assets – companies, knowledge, community – must understand they need to be smarter in how they produce, how they use and how they regenerate materials - responsible for 67% of global GHG emissions.

Today, the world is 9% circular. And, unlike renewable energy technologies, these 9% are made up of heterogeneous technologies, of dispersed efforts, generally unknown or limited to the reverse cycle of least economic value: recycling.

If we want a systemic change, we must know and accelerate - in the value chains of economic activities, and in the regions with the communities. And the Regional Agendas for the CE are the "provocation" that consolidates this effort, learns from it and, hopefully, multiplies it.

We want to learn from the cycle closure efforts that the textile industry is making in the north of the country, of which Riopelle and Valérius are examples. Of bioeconomy in the Central region, valuing and enhancing its natural assets, with the support of startups at Instituto Pedro Nunes and BLC3. We want to manage urban metabolism in big cities and how to foster industrial symbiosis, with projects such as FORCE in Lisbon and the Eco Park of Relvão.

We want to know about the maintenance, remanufacturing and recycling projects around the aeronautical sector, as we see emerging investments of this sector in Alentejo. And we want to know how to foster the symbiosis between short cycles of production and consumption, supported in traditional industries and the tourism sector in the Algarve.

Ladies and Gentlemen,

Like our Action Plan, the Regional Agendas are only the kick-off of the work that, inevitably, regions must do. It will certainly contribute to the application of the guidelines set forth in our Plan, along with other efforts such as our financial support to CE through the Portuguese Environmental Fund. But, to address one of the common barriers in this transition, we need to showcase and communicate the good examples of CE and the champions of this transition in each region.

Because, after this Government, another will come but the champions and the examples remain. Because we do not have 30 years for the CE to be understood as necessary: we cannot waste more time.

I will end, as I began, with Davos and the words of Al Gore: "The will to act is in itself a renewable resource".

I hope to see this will always renewed.

Thank you very much.

João Pedro Matos Fernandes

22-02-2018"

4.3. CE and European projects – Keti Medarova, EASME

Keti Medarova introduced herself as Project Advisor from EASME – the Executive Agency for Small and Medium Enterprises -, and responsible for all H2020 instruments targeting the CE.

In her presentation, Keti Medarova started by giving an overview of EASME and explained the different areas of work in which they are involved. She then talked about the new CE Package adopted by the European Commission to help European businesses and consumers to make the transition to a stronger and more CE where resources are used in a more sustainable way.

The proposed actions will contribute to "closing the loop" of product lifecycles through greater recycling and re-use, and bring benefits for both the environment and the economy.

Circular economy



The CE makes both environmental and business sense. But it also needs more than a piecemeal approach to technologies: it needs changes in entire systems and joint efforts by researchers, technology centres, industry and SMEs, the primary sector, entrepreneurs, users, governments and civil society. It needs enabling regulatory frameworks, additional public and private investments. Research is also important to find new business models, governance structures and new technologies.

This transition is supported financially by the European Structural & Investment Funds (ESIF), which include €5.5 billion for waste management.

In addition, support is provided by €650 million under Horizon 2020 (the EU funding programme for research and innovation) and investments in the CE at national level.

Referring to SCREEN, Keti Medarova highlighted the great expectations and the specific requirements to have partners who represent the regions. The very promising mapping tools of regional innovation capabilities based on RIS3 strategies and the methodology for cross-regional value partnerships. A methodology for exploiting cross-regional potentials via mobilising H2020 and ESIF in a synergic way, and the very practical tools, replicable beyond the participating regions in the consortium.

Afterwards, Keti presented the European Commission's final Work Programme for Horizon 2020, covering the budgetary years 2018, 2019 and 2020, which represents an investment of around €30 billion euros. Here, she talked about the main funding opportunities for CE projects, namely in Focus Area 'Connecting economic and environmental gains – the CE and all the calls that could interest workshop's participants.

Before ending her presentation, Keti stressed the need for more independent experts giving a link for the concerned call: <http://ec.europa.eu/easme/en/call-experts-climate-action-environment-resources-management>

4.4. Project SCREEN – Carlo Polidori, Project Manager – VELTHA

Carlo Polidori introduced the SCREEN Project, the partners involved, its objectives and background. He talked about the main steps of the project and SCREEN's methodology. Carlo made an overview of the work already done, stressing the mapping of local value-chains which will contribute to the setup of synergy grids - A guideline to identify cross regional potential synergies.

The SCREEN Policy Lab, composed by 16 Participating regions and representatives of DG REGIO, DG ENV, DG RTD, DG GROW, EASME, ERRIN, EURADA, ACR+, has been having the foreseen physical meetings plus continuous discussion via mail and on a specific LinkedIn Group.

The meetings already taken place have addressed several important issues regarding the progress of SCREEN, namely the analysis of existing instruments and their practical applicability, discussions on practices already in use in some regions (e.g. Centro), the need of a bottom-up approach and the need to simplify and harmonize the evaluation procedure.

The current discussion in the Policy Lab has been around the Memorandum of Understanding (MoU) already signed by five Regions: Centro, Lazio, Extremadura, Crete and Navarra.

MEMORANDUM OF UNDERSTANDING

for a synergic use of regional and European funds targeted to circular economy projects

THE SIGNATOIRES OF THIS DOCUMENT,

Having regard to the EU action plan for the Circular Economy¹

Whereas:

- (1) The transition to a more circular economy is an essential contribution to develop a sustainable and competitive economy, as well as an opportunity to generate new and sustainable competitive advantages for the European Regions.
- (2) Regional authorities have a key role to play in the transition towards Circular Economy and greater synergies; nevertheless, fragmentation of resources and implementation difficulties obstruct progress towards achieving common objectives.
- (3) The European Commission publication “*EU Funds working together for jobs & growth*”² shows how some funds synergies are possible and encourages their implementation
- (4) At the level of a comprehensive program, synergies between the European Structural and Investment Funds (ESIF) and H2020 is possible and visible, even if not yet completely tested in real cases.
- (5) Specific actions already initiated by some regions are good examples of best practices and could also be implemented at European level.
- (6) Article 70 of the ESIF regulation allow operations implemented outside the programme area, but within the EU, up to 15% of the allocated funds; however, there is no evidence of its actual application.

Carlo also presented the draft table of the assessment criteria for CE projects and its correlation with the CE criteria published in January by the European Commission. He also stressed out that SCREEN's circular criteria are currently in public consultation until May, and the results from the questionnaire will be discussed in the next Policy Lab meeting, hosted by the European Economic and Social Committee (EESC) on the 30th of May in Brussels.

4.5. SCREEN Synergies

4.5.1. From local to cross regional synergies – Marcello Colledani, AFIL, Lombardy Region cluster on Intelligent Factory

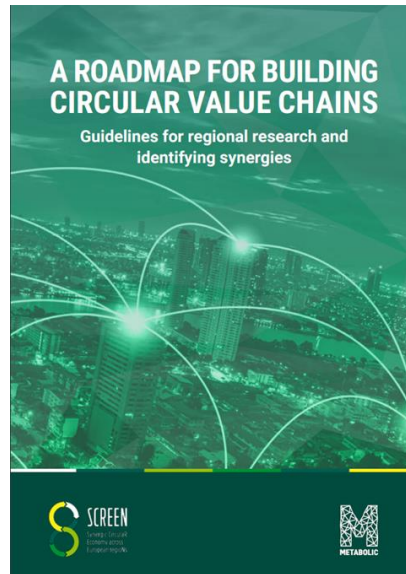
Marcello starts presenting the four main steps of SCREEN's project:

1. How to identify local CE potential and existing Value Chains (Regional level);
2. How to identify cross-regional CE Synergies (Operational synergies);
3. How to finance projects raising from cross-regional synergies (Funding synergies);
4. How to assess the “circularity” of one project with respect to another one (Assessment criteria).

He then explains with some detail every step taken from local to cross-regional value-chains. The first step was creating a tool for collecting data about existing capabilities in the Screen Regions, also considering the Smart Specialization Strategies and the key industry sectors. Then, a twofold data-driven and interaction-driven approach has been followed in order to analyse the existing capabilities and identify the existence of regional hotspots and cross-regional opportunities and emerging ideas. Finally, the existing cross-regional value-chains have been formalized and specific opportunities that can potentially result in actions to be implemented through cross-regional cooperation have been formalized.

These steps have been formalized within the SCREEN tool. All Regions have compiled data to fulfil the tool and this has been the basis for the local and cross-regional analyses. The mapping tool is publically available.

Fryslan was responsible for creating a methodology to be used by the Regions in local workshops.

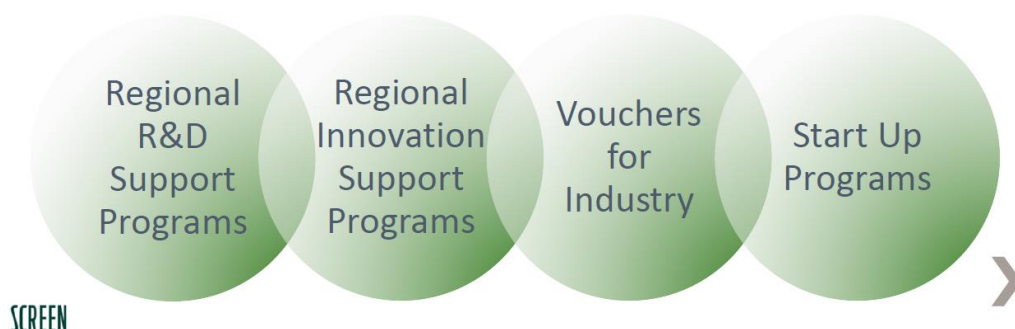


Starting from the regional inputs and data analysis, value-chains have been further analysed through these workshops and potential synergies with other Regions have been highlighted. This leads to cross-regional value chains: starting from the tool inputs, local and consortium workshops, the cross-regional synergies were identified. Regarding this, Marcello gave the example of a cross-regional value chain for the “Manufacturing and Remanufacturing” sector among Tampere (Finland), Lombardy (Italy) and Navarra (Spain).

Until now, the most relevant value-chains identified and analysed were material-driven value-chains and business driven sectorial value-chains:

- **Material-driven value-chains**
 - Agriculture
 - (Smart) Packaging
 - Water and wastewater
 - Biobased materials & biotechnology
 - Manufacturing & de-manufacturing
 - (Bio)waste management
 - Construction/Build Environment
- **Business driven sectorial value-chains**
 - Electrical and Electronic Equipment
 - Energy
 - Paper and forest-based industry
 - Textile
 - Transport and mobility
 - Food and beverage

Marcello spoke also about the mapping of the existing funding instruments, which are the current subject of SCREEN.



The project is gathering the funding instruments existing in each region in order to develop further the emerging ideas, stemming from the results of the previous steps within Screen, and gather best practices and hints, which can fuel the Policy Lab, created within the project.

4.5.2. Self-Assessment Tool for the investment readiness of EU regions – Timoteo dela Fuente, DG GROW – Chemicals Unit

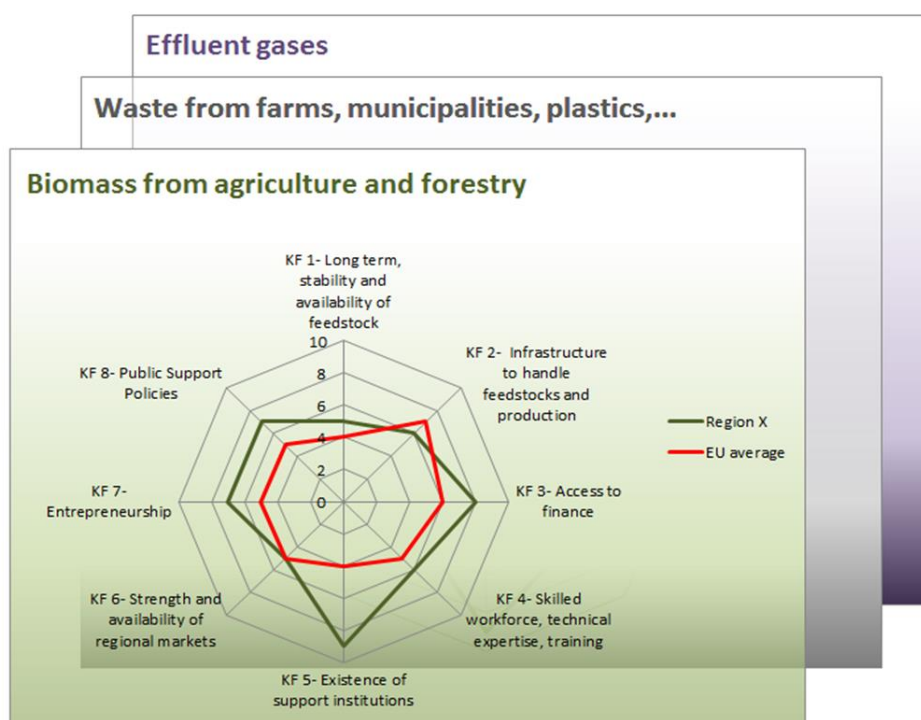
Timoteo dela Fuente presents the Self-Assessment Tool (SAT) which is a methodology to perform a first assessment of investment readiness level of a region regarding chemical production. It serves as a starting point for regional discussion on how to design better regional strategies.

'Sustainable chemical production' is the usage of alternative raw materials to produce chemical products. These alternative raw materials are different from traditional fossil-based ones. Specifically, the following 3 types of feedstock are considered:

Biomass from agriculture and forestry: this is mainly to be processed in high capital and energy intensive installations (e.g. integrated biorefineries);

Waste from farms, municipalities, sewage sludge, agro-food industry and paper & pulp industry: this feedstock is mainly to be processed in decentralised installations with a certain degree of industrial symbiosis;

Effluent gases, such as CO₂ and CO: these gases are mainly to be processed in conglomerates (in a typical industrial symbiosis).



The tool addresses Feedstock availability, GIE availability, Infrastructures, Skilled workforce, Knowledge base, Regional markets, GIE usage, Political support, Access to finance, Support institutions, Entrepreneurship, Thriving business community and Industrial Symbiosis.

The SAT consists of an online questionnaire for each type of feedstock. It amounts to approximately 60 to 70 questions (around 8 per key factor). Once the questionnaire is filled, a spider diagram is delivered with the result marks in each of the factors. The marks range

from 0 to 10. They show in which areas the region is strong and which could use improvement. It is possible to compare the result average marks with those of other EU regions that have already used the tool. This will help clarify where the region stands in a European context. The SAT will also produce a document with the main conclusions and recommendations. This will help to the interpretation of the spider diagram.

The questionnaire is available for public use, for the regions at: <https://ec.europa.eu/growth/tools-databases/escss>

4.5.3. Round Table

Bart Volkers (Province of Fryslan, WaterAlliance, NL) will be the moderator for the first round table of the day.

He introduces Nillo Halonen and starts by addressing some characteristics of Tampere region regarding CE, namely the existence of some interesting cases: the ECO3 park, an industrial area.

Taking this in mind, Bart asks Nillo to talk about local initiatives and the incentives that Tampere has to reach inter-regional collaborations.

Nillo Halonen (Tampere University of Technology, FI)

Nillo starts by explaining that he has been involved in SCREEN project in establishing a kind of a base line, mapping the local ecosystem and identifying cross regional synergies regarding industry projects.

In Tampere the CE works through incentives towards cross regional collaborations. In this region, CE is done through the growing of these industrial parks. There is an important example of such, the ECO3 - an eco-industrial park, where there is a link between industry, bio and water system in an industrial scale pilots and businesses. The objective is also trying to look for new markets and new business partners among SCREEN's partner regions.



ECO3 bio-CE business area

Throughout the massive processes of what has been done in SCREEN, Tampere region is doing some exhaustive work in finding out some kind of base analysis that matches the same kind of analysis. Nillo says that SCREEN project has given Tampere region a real starting point of what are the opportunities for the region.

The general discussion in a national level, and this is how Finland deals with CE in many cases, is about recycling - which has a very limited spectrum. In a local analysis is possible to see the dimension of these limitations and the aim is to go further. Tampere region is working in a collaboration basis with the University and other sectors. In the whole there are 100 people that were already interviewed in more than thirty meetings and workshops trying to promote things like reuse, main productive services, sharing and other processes that have in mind also the own region's characteristics. Thereby, the SCREEN project has been a very important model and has had a special contribution to the region's results.

Bart asks Nillo if SCREEN can contribute, as well, to the ECO3.

Nillo explains that in ECO3 there are about 20 different organizations involved, a waste management organization, a water management organization, a bunch of different SMEs that are doing symbiosis with each other by using, for instance, the waste of other companies in their processes. Therefore, when they used the synergies with ECO3 towards other SCREEN's regions, they have identified, for example, a shared interest in the water technology theme. This shared interest in doing research, in finding industrial symbiosis or partnerships and hopefully more than only partnerships (for example, developing chemicals and raw materials like cellulose out of waste water). This is something that has been identified through the project. And also looking into different ways of promoting nutrition cycle. These are all common themes that Tampere region has been sharing with SCREEN's partners, in order to achieve cross-regional synergies.

Bart thanks Nillo for his intervention and asks Marisa Almeida to come forward. He then introduces Marisa and asks about her perspective regarding both mapping tools presented earlier. In what way can these kind of tools promote richer networks for the regions?

Marisa Almeida (CTCV – Technological Centre for Ceramics and Glass, Centro Region, PT)

Marisa says that it is a pleasure to be in the workshop and thanks the kind invitation from Centro. She explains that in CTCV there is some experience with CE. For instance, they have been incorporating different materials in the making of ceramic, because ceramic's products are like chemicals, there are all over the world. Looking at this building, for instance, we can say that, perhaps, is made of brick, here we have wood tile, but we could have ceramic tiles. Ceramic materials have a long span of life, like the buildings they integrate.

Ceramic can also incorporate waste from other industries. For instance, in CTCV they already tried with success to incorporate sludge from waste water treatment plants, but also sludge from celluloses, waste from pulp and paper industry into bricks. Besides this, there are also examples of incorporating saw dust and also other forest wastes in building materials with success. There have been trials also to incorporate the same material into the glass successfully. There are many examples on how to incorporate by-products and other products from other industries and sectors.

Although CTCV has many examples of mixing materials, not many are in field because of the many constraints related to bureaucratic issues. And also because when industry does some experiments and something goes wrong they always think that the fault is in the recycled water/product or that the poor quality of the result resides in the incorporation of the by-product, or in the incorporation of waste water.

In Marisa's perspective, industry really needs good examples and good demonstration actions to increase their potential. In the day-to-day routine industry is always focused on the business, not always thinking broadly and not thinking in what other sectors do and what others sectors can contribute to their value chains.

Bart asks Marisa if the mapping tool of SCREEN can be of any value to this issue.

Marisa agrees that SCREEN's mapping tool is of value, because the mapping is a need in the region and an important thing to have. Seeing all resources in one place can promote the talk about production factors and about CE. From here is a small step to thinking about extending factors, the resources, the costs, the energy, the water, and in adding value.

Bart asks Marisa about the level of attractiveness that Centro region has for business and for growth.

Marisa explains that Centro region is very attractive because it has everything that could interest business. There are many kinds of industry – a strong technological industry, several relevant sectors like pulp and paper, ceramics, glass, agriculture industry, agro-food sector, water. There is the sea nearby which facilitates exportation, transport, logistics, and potential synergies between all the value chains.

Bart thanks Marisa for her contribution and asks Timoteo dela Fuente to share his point of view on circular potential and readiness for investment in these two regions (Tampere and Centro). What advice could he give to these regions?

Timoteo dela Fuente (DG GROW)

Timoteo points out that regions compete, particularly when they have many similar characteristics. How the regions can cooperate? This is something to analyse. He gives an example of a region that made an investment of a million of euros for a biorefinery. However this region found out that they didn't have enough biomass to feed the biorefinery, so now they need to cooperate with other regions nearby, from neighbouring countries, because they need desperately of biomass to make the investment properly done. So there are different situations.

Regional cooperation is not a name in itself. Regional cooperation will come as long as regions find a common benefit. Why, for instance, Andalusia which has residues of olive oils is going to cooperate with Tampere, in Finland? Probably because their analyses show that the oil can be applied in a certain industrial process in Finland. And in that moment the cooperation takes place.

Bart states that Timoteo is introducing, with his presentation as well, some new dimensions to the SCREEN project and maybe that can have a place in the Policy Lab discussions. He then asks Marcello his point of view about these new dimensions introduced by Timoteo and how they can contribute, and add value to SCREEN's mapping.

Marcello Colledani (Intelligent Factory Lombardy Region, IT)

Marcello acknowledges that there is an important dimension that was not so reflected in SCREEN's methodology. Although it is implied, the analysis of the investment attractiveness is not worked yet.

He says that investments are related to infrastructures, processing infrastructures, also, and important investments in terms of capital, and probably this is why the axis of the problem is

not the only axis because investment can be more generally applied to different areas boosting CE investments of skills, for example, which is an important aspect too.

Marcello points out that there is a big discussion going on and he has been invited to some events about synergies. Finding synergies for supporting investments, prioritising investments, more landscapes investments. Vanguard Initiative is working on this idea on creating open infrastructures for enabling small to medium enterprises to test their possible solutions in CE, before their industrial uptake and implementation in order to minor the risk in product investments.

He thinks that this is an important step to consider once we want to boost businesses in CE and the two tools proposed are useful in other areas, about the chemical and in other manufacturing ring areas. They try to understand what the level of readiness of the region is, in order to attract similar investments. There is also the open platform approach, like the Vanguard approach.

Marcello says that these reflections should be welcome in SCREEN and that the project's methodology can highlight areas of investments in different regions coming from the needs that the tool has highlighted. He adds that the two methodologies, the two tools that were presented are complementary in the target and can benefit from each other.

Bart tells that he is very glad in seeing this discussion as maybe a starting point for a new dimension also in the SCREEN tool. He then asks the audience if there are questions to put to the speakers.

4.5.4. Q&A

Wojciech Klimek from DG Research & Innovation asks Timoteo about the complementarities discovered in the analyses of neighbouring regions.

Timoteo says that he will try to answer with examples, as this is probably the best way to illustrate how he sees sectorial cooperation and cross-regional cooperation. He talks about a case in his studies, in how to valorise CO₂. Which is something that is on the interest of many industries, not only the chemical industry, because if something can be done with the CO₂ instead of putting it in the geological spot and be there for the rest of the life, the idea is to valorise it. So the question is defining where the hotspots are, where CO₂ is abundant, where CO₂ is relatively pure, because that is important. There is CO₂ in the air, in the central power plants, in electric power plants. CO₂ is quite abundant but the purity, the volume and density is small.

So, if in the steel and in the cement industry the CO₂ is abundant, then around these industries, the chemical industry could take place. Why cross sectorial cooperation? Because the chemical knows what to do with the CO₂, released by the steel and cement industry? But later on there is the need to break the body of CO₂ molecule and for that it is necessary alternative energy, from local sources: wind, solar, geological or nuclear. Then you need electric energy. And electricity is not always abundant in the hotspots where CO₂ is, but is abundant in neighbouring regions.

This is what happens in Portugal and Spain, in Spain and France. Sometimes Spain sends France wind energy and they send to Spain nuclear energy. Then, obviously, trans-regional or cross-regional cooperation is needed. And much more than that, there is still the need to break the CO₂ molecule. And for that there is the need of hydrogen. And maybe hydrogen does not exist in that area, but exists in the neighbouring region and hydrogen requires transportation by pipes, preferably, by tracks - this is an environmental formality. So there is the need for pipes. And if there is the need for pipes to send hydrogen, there are procedures

SCREEN

according to the regions: permits, public systems, because, for instance, the Portuguese want to have a high-speed train to Spain and Spain wants an electric connection with France, but the connection must be done through a natural park that is protected.

So, in the end, there is this absolute need for cooperation and then, at that moment, that is when real cross regional cooperation takes place.

Bart thanks Timoteo for his answer.

Wojciech wants to know more about the region's perspective regarding this matter.

Bart states that there are, actually, two matters: The cross regional synergies that need to be addressed more in-depth and another thing is where to start as a region, in mapping and finding and overcoming obstacles and barriers and looking at their own region in a local perspective and cross regional one.

Nillo points out that what has been discussed is what the SCREEN's consortium have been doing intensively in the first year of the SCREEN project, and the methodology nicely explained by Marcello. It has been presented, in detail, what has been tested and that is not an easy thing to do, to identify the value chains from the starting point.

He gives an example from the Tampere region. When he (Nillo) started the mapping of the region, he discovered that most people were not aware of the CE in its full context. Therefore, in the end, he felt that it was important to create the data that didn't exist. It was a kind of co-creation, a kind of shared understanding, creating understanding of why doing the mapping. The data approach certainly provided a discussion support and that was very important. Then realising what are the actual duties and what is CE in the full context has really fuelled the discussions with the local stakeholders and through there to look at the strengths and gaps in the region.

Nillo concludes that these approaches are starting points for finding and creating collaboration between regions. He gives the example of working with Marisa (Centro Region, PT) around packaging, and having identified this shared interest in packaging while doing the data driven. Looking into the theme, identifying the value chains in the two regions and comparing, a kind of approach that is an ongoing process and that can lead to find support and go deeper in collaboration. To create trust and see what levels of synergies are possible and what TRLs are required and all of that. Therefore, the work is only in the beginning.

Bart thanks Nillo for his intervention and asks if there is another question.

Wojciech wants to know the opinion of Centro Region.

Marisa explains that, in her opinion, is very important to have good examples, good practices and to be able to disseminate them. Because when good examples demonstrate the benefit enabled by synergies, it is very important to highlight them.

Industry is very closed, not willing to share particular things, namely data. And it is not easy to share and find data and good examples. Therefore, when there are good examples and availability to share knowledge there is an added value. This kind of tools are really important instruments to promote common knowledge and good practices and there is the need to make industry more aware of these tools and about the way they can benefit the sector and trans-sector cooperation.

Bart states that there is still time for another question from the public.

Arthur ten Wolde introduces himself as an expert in CE working for ECOPRENEUR, which is a European Federation of sustainable businesses representing 2500 green SMEs in seven Member States.

He puts the question to Marcello: ECOPRENEUR have just finalized a self-assessment tool for CE for SMEs. In the tool there are factors of transportation, everything is followed by renewable energy, and there are, in addition to the value chain, value cycle, sustainability as criteria. The question is, if you go from local to regional and to synergies across Europe that means often-extra transportation. So, in ECOPRENEUR's tool if there is an increase of CO2 emissions that is not considered circular. How does SCREEN's tool work on that?

Marcello says he understands very well the issues related to the creation of cross regional synergies, relating mainly to the transportation of materials. From his point of view, synergies can be relating to the physical need of processing materials in different sites, because of competences, technologies and solutions available in certain sites. This can be but not the only way to synergies. Some of the synergies identified in SCREEN are about, for example, the transfer of best practices (in technological best practices or methodology best practices) from one region to another. Other interesting aspect realized is that, especially in the area of SMEs, and in CE, differently from what have been noticed in manufacturing, there is much less competition and much more willingness to cooperate.

The reason for this is, probably, that waste is intrinsically local many times, especially for traditional waste sources. This might be not true for waste that is emerging because of the need to guaranty a certain amount and continuity. However, in traditional waste we are talking about electronic equipment's, a company in Lombardy would cooperate with another in another region and exchange information about the technology because their input is mainly related with a physical area. So that kind of cooperation is possible and does not create too much of IPR issues or protection issues.

Regarding the question asked, Marcello thinks that in the creation of a cross regional synergy that entails material transportation is important to consider the benefit but also the cost. In fact, CO2 and environmental concerns with transportation logistics is a very important aspect. Developing tools for analysing these aspects or using existing tools is an important thing but there is some difficulty to have specific information to feed these tools.

There is the need to find out what is the right way in the aggregation level to solve this problem in order not to create boundaries on potential cooperation which are in fact, easily removable by different approaches. Maybe there is the need for simulations or more analysis, in order to enable for one company to understand easily what can be the impact.

Marcello states that he totally agrees with Arthur's comment. He adds that in his region, there is a lower competition between SMEs in CE. These companies are really trying to learn from best practices in other regions, and that's why they are so happy to be involved in schemes from the cluster he represents.

Bart thanks the intervention of all speakers and comments about the quality of the discussion.

Before giving the floor to the next speaker, **Carlo Polidori** asks if he can add some remarks. Following up the answer by Marcello, Carlo says that certainly transportation and logistics are important in CE and this is considered in SCREEN's set of assessment criteria. However, it is only one aspect in the entire evaluation, and there are other aspects and some other criteria that should be underlined. Because it is possible for some transport to be too carbon consumer but compensate by having other lower criteria. Therefore, it is something systemic.

Bart thanks the final remark and asks a warm applause for all participants.

4.6. Barriers and shortcuts to CE – Inês Costa, Coordinator for the Portuguese Action Plan for CE, Ministry of Environment, PT

Inês presents the Portuguese Action Plan for CE: Leading the transition.

She starts by saying that the European Union is in a particular exposure to risk. Only 9% of the 64 critical materials for the economy in Europe is covered by domestic provision. Everything else is imported, which means that European Union is facing risks in this scenario.

Then there are commitments or SDG's (Sustainable Development Goals), particularly the SDG number 12, of sustainable production and consumption, which has an inter-relation almost direct with several other SDG's. If we don't get that one right, then all others will be compromised. Then, there are the commitments with the climate change, with the Paris agreement. Many of the times in this discussion, there is talk about energy, energy, energy. It is not possible to field a sustainable path towards carbon neutral or decarbonisation, until the discussion include, as well, resources, soil, water, materials.

How about Portugal? Portugal is not in a very good scenario in this position. Because Portugal has a slow economic metabolism, meaning the country import and extract in block, in tones, in materials, more than it emits and extracts. Therefore, Portugal has accumulate resources in its economy, mainly in construction. Seventy-three percent of all materials the country extracts are non-metallic minerals, meaning they are going to construction.

Portugal lags in material efficiency and productivity, it generates one euro roughly for every kilo materials that the country consumes, when the EU average is two euros. Inês shows a graph representing all the intervention countries between 2005 and 2015:



She says that all the countries were pretty much in the same level in 2005 but, since then, at least half of them have just shot in terms of energy efficiency and productivity. Portugal is not one of them. Portugal and Greece, for instance, have stayed behind.

Portugal is also very much energy dependent on foreign supplies, in fossil fuels, although increasing bets in renewables, but still very dependent in foreign supplies. The countries' GHG emissions have decreased since 2005 with a very strong decrease, but there is still a very carbon and energy intense economy, at least in relation to the EU average.

What are the drivers and the barriers in driving to the CE?

Inês explains that the Portuguese Ministry of Environment has been working with Utrecht University. They participated in an assessment of the drivers and barriers for CE. From that interaction, they were reminded that a similar development could not be seen as a cross between independent pillars, economy, environment, and society sort to speak. This model is not what we should aspire as sustainable development. The model we should aspire is one where the social economic system is embedded in our natural system. They are not

independent pillars, sort to speak. That happens to come across in between themselves in one particular spot of sustainable development. It can't be just green companies that are handling sustainable development while all the other companies are not to be bothered with this. All the agencies in the market have to understand that they are dependent of the natural context, of the natural system. They are dependent for their survival; they are dependent on the natural system for their businesses.

Therefore, much like that, barriers are embedded, much like the social economic system is embedded in the environmental system. This means they are interrelated and they can be classified in these areas:

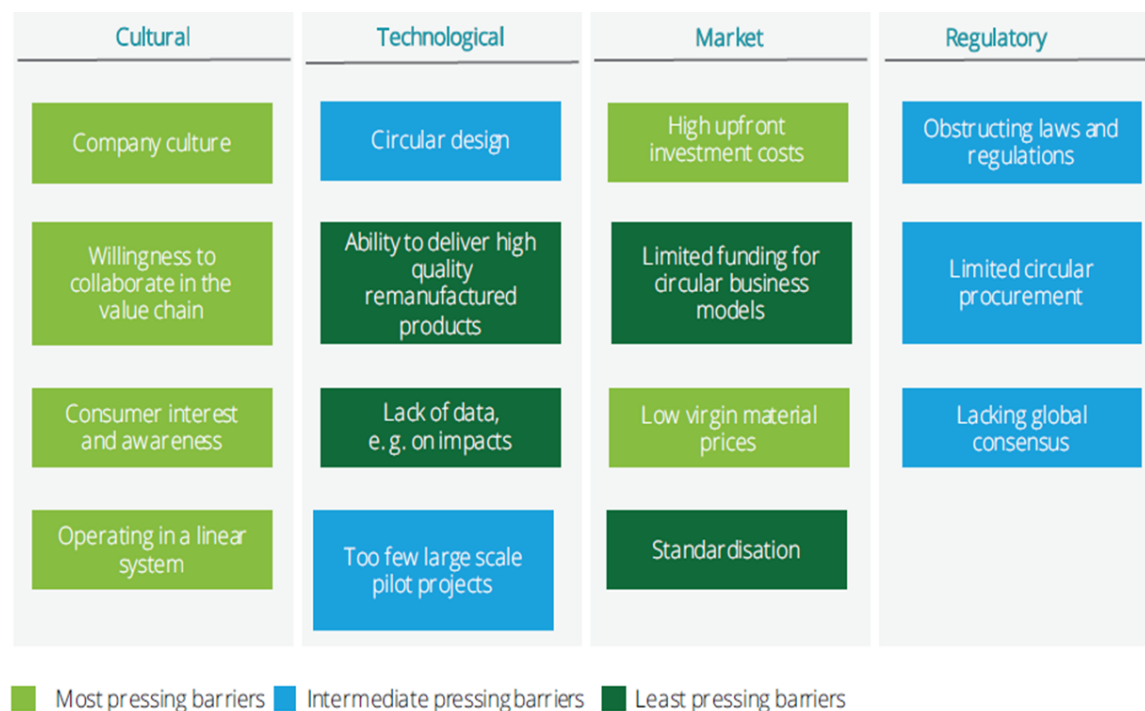
- policies;
- market;
- cultural and
- technological.

Since they are embedded, meaning they are interrelated, in order to change the context we cannot just move in one piece, we have to move all the pieces. Which means that it demands a systemic shift, which means that it demands a coordination, a simultaneous coordination, and needs an exploration of the "root" causes in order to deliver targeted interventions and generate a chain reaction.

What were the barriers assessed by the team at Utrecht? The study is online, available for download:

https://www.uu.nl/sites/default/files/breaking_the_barriers_to_the_circular_economy_white_paper_web.pdf

The main, the most pressing barriers that experts, businesses and governments identified were mainly cultural and market related.



They see the technological domain as something that can be taken care of and the area of regulatory is kind of an intermediate between the two. So the main ones are cultural.

Inês explains that the question here is company culture, the willingness to collaborate, some key initiatives like the SCREEN project, consumer interest and awareness, operating in a linear system. That has to change. In the market scale we talk about the virgin material low prices, virgin raw materials are still very cheap when compared to other material sources, secondary material sources, waste. And high upfront investments costs. So it is thought for SMEs to invest right upfront in CE. But they don't have the budget to do so. And this can be seen for Portugal in this Eurobarometer.

This study is available at: http://data.europa.eu/euodp/en/data/dataset/S2110_441_ENG

This Eurobarometer for Portugal was published in 2016 and asked 400 SMEs in Portugal what were they doing in terms of CE. The companies said that the main focus is recycling and energy efficiency. They don't look anything else. Other conclusion was that they invest their own money; they do not look for public investment to do it. And since they invest their own money they invest very low. Like one to five percent of their turnover. More than 70% of the companies told us so. Twenty-six percent invest nothing in this area. Were they aware of any financial incentives? Not particularly, no. 56% said that they do not know any incentives to do so. What happens in Portugal is in average, what happens in EU. There is no particular difference.

To the question: To which of the following "alternative" sources of financing are available to your company? Please indicate all sources your company has access to: None! They don't know any alternative sources. So what are we doing? We are doing something wrong! With all the EASMEs, the Horizon 2020, we certainly are not reaching the bottom line operators. And this is an issue.

So, how can Portugal start tackling this? At least, in the perspective of the Ministry of the Environment? Policies are in a particular good spot, because they are the key players for change, they can have a broader influence through the context, so policy instruments have that ability. There is an interest, so they are resource challenges, there is a want for lower GHG emissions, a better waste management, and they can direct influence across the board. There are regulatory instruments, market and voluntary instruments. That can influence all the other subsequent players. Therefore, the Portuguese Government is in a good position to influence the context in order to achieve reaction and to involve. However, most policies currently enabled are designed based on an unsustainable economic paradigm (linear). What are the low hanging fruits? What can we do now? Raising awareness and business case; Financing upfront investment; Designing out or address regulatory barriers and/or gaps. So how is Portugal approaching CE, taking in consideration these low hanging fruits?



The Portuguese Government actually instated a triangle of force in order to bring those policies into the system. There is an inter-related three pillars on Low-carbon, Territory and

Habitat Valorisation and CE. There are interlinked policies surrounding these three subjects which are kind of catapulted by inter-ministerial efforts and by collaboration with all agents involved in the context: universities, businesses, companies, etc.

These are really much translated into national plans or national roadmaps. For the decarbonisation there is the National Roadmap for Carbon Neutral Portugal 2050 - RNC 2050, one of the first roadmaps being developed in Europe in order to tell the government what they need to do to achieve carbon neutrality, where to invest, what policies they need to see. Then there is the National programme for territorial valorisation called "Território Portugal" which is also incorporating CE and decarbonisation into their orientations, and this is a National level programme which fits right at the top of the priorities in terms of Governance. So, it is very important that we have CE and decarbonisation also in their plan.

And there is CE on portal Eco.nomia which is the main programme in terms of CE.

To catapult all these interactions there is an Environmental Fund which supports financially all these areas in several projects, in several dominions. And the National Strategy for Environmental Education (ENEA 2020), which is something that concerns education. Education is very important in not only schools and universities, but in companies, in the courts, to lawyers, to judges, to local governments. The National Strategy was built not only to just target kids, but to target also adults. It is important educating adults on CE and decarbonisation efforts.

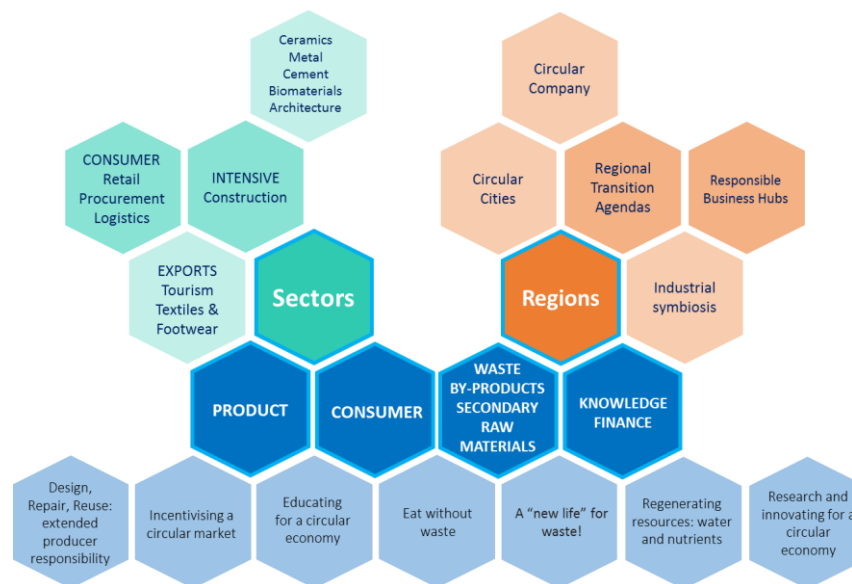
Additionally, to raise awareness and a business case the Ministry of Environment first started to develop the portal - eco.nomia.pt, built online: <http://eco.nomia.pt/>

It is one-stop shop in Portuguese for any information about CE going on in Portugal or in the European Union. It gathers examples; it has a database with national and international companies, products, projects that incorporate CE principles. There are roughly around 170 projects featured there. There is also a section on opportunities with all national and international financing calls focusing on CE, like Portugal 2020 or Horizon 2020. If there is an award or competition for Portuguese start-ups and SMEs, the portal publicizes it too. There is also a database on resources - national and international strategies, good practices, etc. And an area of events with all that happens in Portugal in terms of workshops, conferences, seminars on CE, so that people can know what's going on.

To raise awareness the Ministry did workshops during 2017 addressing CE in particular contexts, like finance, SMEs, agriculture, construction. The idea is to continue to do so, this year. The Ministry also did roadshows with himself visiting projects and companies that are examples in applying CE principles. There was also a very active public discussion of the National action plan, with roundtable discussions with experts from business, academia, local governments.

And this was the result of that year. In one picture. This is the Portuguese puzzle. The CE puzzle.

The idea is to add more pieces or replace pieces as it goes along. There is the main backbone, which are the pillars of the CE action plan of the EU: Product, Consumer, Waste by-products secondary raw materials, Knowledge finance. Then we attached seven actions that are macro level actions, national actions and then the two pieces of the puzzle that are important: Sectors (industry, main industries) and the Regions.



Therefore, the Action Plan has policies at the macro level and an operational application of those policies. Both at the regional and at the sectorial level. In terms of governance, there is an inter-ministerial commission for climate change. There was an incorporation of CE into that commission, so all the ministers who were in the commission to discuss climate change will now discuss also CE and that relation, as well. There is a Coordination Group as well, which are the National Agencies for business, agriculture, and environment. Therefore, each cabinet nominates a national Agency, which is responsible for putting the plan into action.

Inês points out that one of the tools that the Ministry of Environment is considering is taking on the experience from the Ministry for the Environment of the Netherlands and bring the Green Deal approach to the Circular level. There is the want to create circular deals to address particular barriers and moving forward in these actions. Some of the actions are already working. For instance, the National Strategy for Environmental Education is already enforced and has a pillar on CE. There is the National Strategy to Combat Food Losses and Waste. The Ministry for Agriculture is piloting that strategy in that action plan and putting into action.

The Ministry is looking into Collaborative Laboratories for CE to be able to define and certify by-product criteria for wastes from industrial sectors in order to make more flexible the classification of waste materials into by-products to bring them just in time methodology to businesses so it is not stuck into bureaucratic processes for long. The developing of the National Agenda for Research and Innovation in CE is under way, which is currently managed by the Ministry of Science.

For more information about the Action Plan there is an English version to be found in the website of the CE Stakeholder's Platform, under the subject of strategies: <https://circulareconomy.europa.eu/platform/en/strategies>

And now for the two other pieces of the puzzle – the Regions and the Industry (Sectors).

In terms of the industries, the inter-ministerial group selected particular industries that are very much resource intensive, so the Construction sector was the obvious choice. In Portugal, material productivity for construction is very low. The Ministry has a big plan for addressing this issue: there is IFRRU which is a fund that focus urban rehabilitation. We're looking into the EEA grants to finance big projects on CE in construction that includes also industrial symbiosis. And the Environmental Fund is also financing pilot projects on de-

construction and material passports on construction. Furthermore, the industry has pick up these goals and they are doing the work themselves.

For instance, the footwear and the textile, which are also signalled as an important key-industry, because they are very important regarding the export sector, they are developing their own roadmaps, without the help of the Ministry. Footwear has a very big mobilizing project called FAMEST of nine million euros that is integrating CE into the footwear industrial sector in Portugal. There is, for instance, VALÉRIUS which is piloting a CE textiles programme with companies in the north of Portugal that worth ten million euros. One of them has European funds and the other one has capital investment of the own group, which is kind of awesome in Inês perspective. The companies are picking on these issues and are throwing their own ideas, and their plans and their own roadmaps.

And the Regions?

The regions are working on their regional agendas for CE that were launched in January of 2018. Inês thanks to all CCDR's involved because she says that they have been very enthusiastic with the project, they have been very engaged with the project, working not only with the government but also with the companies and researcher centres, and that is very much encouraging to keep up doing better and more.

The challenged put to the regions was to keep a common backbone throughout all the agendas. The objective is not telling them how to do the agendas, but what the Ministry would like to see on them, like a minimum criteria. To see regional analyses of their metabolism, to find which of the flows are being wasted and can be used in a more productive way, which are the key agents in the regions who can accelerate those cycles.

To understand that there is a governance model implemented and that they are responsibilities and roles associated to the implementing of the roadmap and to learn more about the main sectors, the traditional sectors, the regional sectors, and to know who they are, who are the champions, what are the cases.

The plan provided them with three anchors, anchor-projects: industrial symbiosis, circular cities and circular companies. These three anchors are for them to navigate their efforts in terms of developing their roadmap. And there are already a lot of companies and projects going on, that fit exactly into these anchors, like FORCE in Lisbon, UrbanWINS in Leiria (Centro region), AICEP which runs parks, Eco Parque do Relvão, MARL which is the biggest logistics' hub near the metropolitan region of Lisbon, BLC3 (Centro region), Amorim cork. So, there are a lot of examples and people willing to work with us on this.

How about the final barrier - Financing upfront investment? Regarding this issue Inês says that she can signal out three areas:

- **the Environmental Fund** created in 2017 that supports business ideas and projects related to CE in different areas (e.g. financing urban living labs, start-ups and SMEs, calls for plastics, calls for local solutions, financing pilot projects); She adds that in 2018 the budget specifically for CE is around 5.4 million euros, something that is very good considering the country's geographical size.
- **the CE, Innovation and Technology Fund** which is more related to science, to innovation and research, and is piloted by the Ministry for Economy. The initial provision is of 15 million of euros.
- **Portugal 2020** in which COMPETE has several calls related to innovation specifically targeted to research efficiency for SMEs and projects up to 500 thousand euros. They recently launched a voucher for CE, which allows SMEs to acquire services that enable them to advance in strategies for resource efficiency and eco-design, etc.

Inês tells the audience that this is her and the Ministry's vision of how the work around CE is proceeding. She doesn't see it as a bottom-up or a top-down approach to CE, but as a middle-out. As a platform in which governments, businesses, regions and local actors can come together in workshops like this one, in conferences, in calls and further analyse their inputs in the platform and advancing towards CE. That is the reason why there is not a 2050 vision or a 2050 targets. The Ministry sees CE as a process, like something that is evolving. Everyday there are new inputs. The Plastic Strategy for the Commission, for example. The bio economy strategy. Every time these inputs arrive from different sources. Therefore, there is the need to be ready to adapt, to take that information and evolve into further action. It is not something limitative that has targets, or very specific indicators. The perspective is seeing it as a process, as a middle-out approach.

To end her intervention Inês would like to display some examples of the Portuguese companies working closely with CE concepts.

One of them – JULAR – does modular homes in Centro region. They have been through hell and back, they had their factory destroyed at some point, and they had to renew completely their business model. They came from just processing wood and now they supply houses, which they can install in one month. These are completely modular, to which you can add or expand. They use many waste materials, a lot of reclaimed wood from construction sites, for example.

Inês comments that, in her perspective, cork is at the heart of CE. Is completely the centre between bio economy and the technical cycles as illustrated by Ellen MacArthur? Its zero waste industry and zero waste process. Portugal has the textiles and footwear that are very active in using local, natural resources to do their product. For instance, BERG has developed these sneakers which have wool from Centro region, as well. They use cork and natural rubber in the sole. They have cork in the fabric, as well. Even in the small details, the metal details are from recycled sources, so they are really pushing in this area.

In the construction there is also APRUPP which is looking into material banks, they collect components from construction sites and give them a swift remanufacture and put them online for everybody can have a vintage door or window.

MATTER is a start up from this architect – Ana Dias – she is supported by the Environmental Fund to use agriculture by-products to make construction materials. Imagine going into a home and smell chocolate. That is because the floor is made from chocolate! She was one of the 30 businesses selected by IKEA to go into their incubator.

Finally, for short-term rentals there is RENTERS. There is no need to buy a backpack to go to the park, now it is possible to rent one! There are Co-op looking into cooperative use of renewable resources.

There is also a supermarket that only sells close to date products. Or products that have passed the due date but are in good condition, still.

There is Book in Loop, a start-up that comes from Instituto Pedro Nunes in Coimbra. They take the text books, use them and remanufacture them.

Inês thanks the attention and ends her presentation.

4.6.1 Round Table

Inês Costa will be the moderator of the final round table of the day. She introduces all speakers before giving the floor to the first.

Carlos Vieira is Director of CELPA with 40 years of experience on paper industry. **Jarno Laitinen** is a CE and sustainable innovation specialist currently working as program manager for the Finnish Contaminated Sites Demonstration Program. For the last 15 years, he has been developing and commercializing clean solutions for biotic and abiotic wastes in a number of positions from public and private sectors, in Finland and internationally. **Bernd Janson** is from ZENIT - Zentrum für Innovation und Technik, the Regional agency for R&D in North Rhein Westphalia, DE. He is a specialist for synergies between Structural Funds and Horizon 2020. His key activities are arranging international business cooperation; mediation of international technology cooperation and political and regional consulting.

Inês launches her first question to Carlos Vieira and invites him to say some words about barriers and drivers perceived by the paper industry.

Carlos Vieira thanks the invitation and explains that he will talk about the paper industry and the way this industry looks at these opportunities, the barriers and the constraints.

He starts by saying that Europe is the second world producer of pulp and paper with the production amount of around 130 million tons. The industry has a turnover of 75 billion euros, and is responsible for 180 thousand direct jobs and 1.5 million jobs if we consider the value chain and indirect jobs. In Portugal, the industry is a driving force of the national economy accounting to 5% of the goods exported by the country for more than 130 countries and regions with an annual turnover of 2.7 billion euros representing close to 2% of the GDP of the country.

The Portuguese pulp and paper industry production amounts to 2.2 million tons of paper, different kinds of paper, office paper, packaging and 2.7 million tons of virgin pulp. It is a very high and sophisticated technology based-industry with high efficiency use of resources integrating all the BATs in this sector and where is located, for instance, the biggest and the widest paper machine in Europe for the production of fine papers.

It is responsible for close to 7% of all the electric energy generated in Portugal, the majority of that energy is generated on site from biomass, a renewable source energy. Portugal is the European leading producer of premium quality of this paper and fine papers. The pulp and paper industry is energy and raw materials intensive. Moreover, is based on a natural and renewable resource, wood fibres, while paper is a recyclable and biodegradable material. Those four attributes are unique. To be natural, renewable, recyclable and biodegradable is a unique combination that we do not see, for instance, in aluminium, plastics or glass. This industry sector produces in Europe 11 million tons of wastes per year. Around 15% percent of this amount represents 1.65 million tons per year in landfill. The nature and composition of this process by-products is diverse and consists, just to mention a few, of waste water treatment sludge, boiled ashes, sand from the fluidized bed biomasses boilers, wood knot – the part of the wood that has not been cooked and can be utilized as wood processing residuals.

There is a growing number of technologies dealing with the valorisation of pulp and paper production, waste streams, and R&D in this issue confirms the potential for those materials to become valuable, secondary raw materials for other industries. CE aims a lot more and goes far beyond than recycle the final product. Having said that is important to emphasise that paper industry is the forerunner in recycling in Europe. Currently 72% of all the paper used in Europe is recycled. And if we focus only in paper packaging this figure goes up to 80%.

Paper is the product with the highest recycling rate in Europe and there is a lot of potential to improve this figure, especially in those countries that have not a separation and segregation practice.

But there is even a more remarkable aspect to mention. The paper industry is an integrated chain from forest to paper, is a paradigm of circularity. It has always been by-process concept. Otherwise, it would not be viable both in terms of environment and economically.

It is a bio based manufacturing and converting industry. Therefore, the CE concept is not a new buzzword upsetting the pulp and paper industry. It is very much familiar with it and it is the basis of the industry's operations. In face of the challenge of resources scarcity and the need for that efficient use, the valorisation of waste streams and secondary raw materials generated by the pulp and paper industry is of paramount importance to become valuable in secondary products in, for example, construction and manufacturing industry. In the transport industry, in the mining sector.

Furthermore, the bio refinery technology applied to wood processing residuals, side process streams and fibre sludge leads to huge and innovative and universally bio based natural and sustainable products such as biofuels, bioplastics, biopolymers, compounds, pharmaceutical and cosmetic products.

And what is very interesting is that this combination between bio refinery economy and CE leads to this new concept: Circular bio economy.

In the cases mentioned above there is different increase of technical maturity to implement solutions. If there are difficulties to find and establish long lasting win-win relationships with partners willing to embark in CE model to reuse sub products, from the paper industry, or residues with a clear value for them, those difficulties are the result of a number of constraints and barriers.

First, there is still the perception that the incorporation of secondary raw materials obtained from other industries' waste leads to a poorer product, in terms of quality, performance or reputation.

The regulatory limitations preventing the use of industrial residues, even when it is well supervised, discourages the search for partners and applications. Declassification of the residues status to become a sub product is a time consuming, expensive and bureaucratic process.

The speech, the message, the enthusiasm and the commitment of the environmental authorities in the CE project at the top level, seems to have not yet passed to the technical staff of the environmental agencies.

Carlos asks the audience to imagine, for instance, the position of those to whom the paper industry has been conveyed so far its waste. Their position will be: why should I change the paradigm? Until now I've been paid to help the paper industry to get rid of their waste. Now the paper industry within the CE concept has changed the name and the status of the very same stuff that they now call it a sub product and I must pay for it or lose the income that I was used to. So, those that have been dealing with conveyed residues waste and that have been paid to help the paper industry to valorise or put the waste into appropriated landfills, are facing another reality for the same product. Now it is called a sub product, now there is a new approach that they do not understand and why they will have to pay for it.

Inés asks Carlos if what he is saying is that, basically, there are cultural barriers of understanding the concept and convey the information across the board, at the top level. That the regulations are seen as barriers, also.

Carlos points out that the paper industry cannot deliver a sub product and say: take it. It is a lot more. There is the need to build and deliver not a product, but deliver a solution: a sustainable and long lasting opportunity to resist costs, the amount of scarce finite resources and impacts. In order to achieve this, a close cooperation between partners needs to be implemented. Defining sub products specifications, targets and ranges, control and testing methods for acceptance. Exploring low impact transport solutions, developing additional converting processes that are requested by the supplier sites to meet the requirements of the next utilization. Applying known technologies from other industries in a cross fertilization process. Anticipating the kind of processes changes, new equipment, impacts that are expected and needed to incorporate in the new sub product.

In the end, what is on the table is regional cooperation to implement CE concept through the sharing of research, innovation, benchmarking, process engineering, knowledge, project demonstrations and to scale-up pre-industrial solutions. All this needs encouragement, support from the public, solutions and financial incentives.

Carlos thanks the attention and gives the floor to Inês who sums up the intervention.

She points out some of the barriers, highlighted by Carlos, mainly for the paper industry, particularly the barriers in terms of cultural perception and the realization about what CE is, what it entails, mainly at the government level. Not so much at the bottom-line level, because that is something that paper industry have been dealing for many years. Nevertheless, in Inês perspective, there are some barriers there, in terms of expanding the concept of CE, not only in terms of process but of the business model. That is something that the paper industry should look into. According to Inês, Carlos also mentioned cross-regional synergies, where cross fertilization of technologies is one of the synergies we all should be looking at, mainly at international level because it does not entail particularly the transfer of matter, or the impacts generated by matter, the issue here is about transfer of technology and knowledge, which is a different thing. The benefits that comes from this kind of transfer across industries can have a great, positive impact with environmental gains.

Inês asks Jarno Laitinen if he can say some words about his experience in terms of what are the barriers that he sees in the bottom level in CE and its implementation.

Jarno Laitinen thanks the kind invitation and starts by making a comment about the paper industry. He states that he comes from Finland and that pulp and paper industry is a national backbone. Ten years ago Jarno was sure that paper was dead. He really feared for that. There were these talks about digitization and everything was progressing so fast, the paper companies struggling with its own capability.

In Jarno's perspective, like Carlos has told, this concept, the Circular bio economy, these bio refineries, are something that probably, saved the paper industry. Today, in Finland, the paper companies are most profitable than ever. The amount of paper from their production portfolio has not decreased and at the same time, they increased the production of other value added products. At the same time they started to build synergies with other industries and to build new kind of production value chains. Finishing his comment on the paper industry, Jarno let the audience know that he is going to talk about bottom-up approach, and that the most bottom-up approach that someone can get is to talk about soils.

Seventy percent of the planet is water and 30% is dry land. Of the dry land one third is on glaciers, ice covert land, one third, either deserts or mountains and another one third (the all 10% of our planet's surface) is area where is possible to grow something on or live in it.

Looking at the waste sector in the EU and in Finland what could be the biggest waste generated? Its soils and minerals waste. At EU, 60% of the waste streams are soils and mineral wastes. Households generate only 10% but still when the talk is about CE and closing the loops those are the primary focus. In Finland, this ratio is even higher. About 75% of the waste are soils and mineral waste.

Putting it into numbers, every year 75 million tons of waste are taken to landfills. Soils and mineral waste. This is something out of the loops, out of production. It takes about 2 000 years to generate ten centimetres of top soil. It is a renewable resource, but a rather slow one and at the same time, we are losing soils due to erosion, and rain acidification and other causes that are affecting directly around 24 billion tons a year.

So this is the 10% of land that is needed to build homes, building houses and growing food. And what is done with that? It is used as a waste. It is dug up and re-dump on the landfills. So, to start talking about bottom-up and CE there are these key things to address, what the world is doing to soils and mineral wastes.

How can the loops close and keep them better in circulation. It is a threat but also a possibility. Jarno points out the vast quantities of soils that are being dug, being processed and being used. At present there is not any allocation of any economic value for those kind of products. And there are millions, billions of tons of soils being wasted. He explains that if we start putting one euro, ten euros, then we are talking about tens or hundreds of billions of value that are being discarded, instead of being captured.

Jarno tells that he felt very pleased to hear about what was being done in Portugal and how the Action Plan identified construction wastes including, also – in his view – the soils extracted during construction works as one of the key loops that is needed to start addressing and finding ways to solve the problem. He states that that really resonates with what is being done in Finland, trying to find ways to do those.

Before Jarno starts talking about the solutions achieved in his country, and what they have been doing, he would like to give out the main obstacles that he fears that they have in terms of tackling this issue of soils and CE.

Number one is that no one put any value on soils.

First, there is talk about clean waters. The last ten years was about clean air. Jarno suggests that next the talk should be about clean soils. Soils for life. If the biodiversity is a serious matter on this planet, soils holds the highest biodiversity. Therefore, it is something that not only worth conserving but also worth using in a meaningfully way. That is the number one: we need to appreciate it.

Number two it is a more technical approach.

When infrastructures are built, or houses, the thinking is about decades. Therefore, the technical solutions that are used for building roads have to be tried and tested. It has to have a technical background, that the materials will last there, the roads will not collapse, the bridges will last. So, there is the need to do research on how to use these alternative materials and at the same time to educate, to share the knowledge that is generated to the construction companies and also to the clients. Among these clients, explains Jarno, is the key client that is the public sector. The public sector are the ones who makes the majority of contracts for road infrastructures and buildings.

Third, Jarno points out that there is the need for better legislation and regulation.

It shouldn't be allowed to dig soils and put them in landfills. In Finland it still is. And at the same time there should be incentives that could encourage the use of recycled soils for

construction. For him, it is mind-blowing that, at the moment, it's cheaper to dig virgin soils and use that for construction instead of recycled soils. One could think that once taken out of nature and put it into the loops, it would be cheaper for use. However, the actual costs of labour, transportation, permitting and all that is included makes it small but still a significant margin. Now, when the talk is about construction the small rivers end up in one ocean.

Summing up, Jarno says that, for him, there are these three key things: value, technical guidance and regulation. And these are the things that can help close the biggest loop of all: soils and minerals.

Inês asks Jarno about the cross-sectorial synergies. How does he see cross-sectorial synergies like the ones that SCREEN is looking into, how can they assist in overcoming the barriers that he has identified?

She adds that when Jarno talked about soils that seems very much a local challenge that entails local actors, so how does he see the inter-relation between regions like SCREEN partners is approaching in overcoming those barriers, besides the question of legislation and finance that Bernd will talk about, but in an operational level. How can they support that solution?

Jarno tells Inês that that is a very good question and states that soil is a material that has no value in transporting for long distances. Therefore, the best way to share experiences between regions and benefit from them is to share best practices, tools and ways on how to deal with this. For example, in Finland they found ways of managing soils in a municipal, or regional or a trans-regional level within the country. In Jarno perspective, he doesn't see as possible to transport the raw materials, *per se*, but the practices, and the management. Specially, when the key number two is about the technical experience, about using alternative materials and the know-how. This is something that Jarno believes is worth sharing.

Inês thanks Jarno for his intervention and directing her words to the next speaker, Bernd Janson, sums up what has been said.

Until now we heard about the barriers at the bottom level and about how inter-regional synergies can help to assist overcoming those barriers. However, many of these barriers have to do with market instruments, regulations, etc.

Inês asks Bernd what is his take in addressing from a top-down perspective those barriers, and if he can talk a little about the synergies between structural funds as one possibility to address those barriers, particularly on the investment side.

Bernd Janson starts by saying where he comes from. He's from North Rhine Westphalia, in the north of Germany. He thanks the invitation and comments that he is not an expert in CE, although he feels that he has learn a lot this morning.

He is here to give some insights as a consultant for his regional government concerning some special topics like Horizon 2020, the Structural Funds, their synergies, and what they have in common.

Bernd says that the main obstacle is missing regulations. He considers that that is an issue in every region now, a major political issue. There are all these regulations, this basis where all actors can develop their projects, their initiatives. However, according to Bernd, what we all need is politicians, ministries and authorities interested in initiating those kind of projects.

Like Jarno stated, there is a great need for awareness. Make everyone aware about the importance of this kind of topic. He speaks about the work they've done in his region, how they first made it transparent to everyone – and this is a very important thing – and referred to the regulations and proposed initiatives. Then they change a little what they used to do. For example, concerning H2020 money, there were several agencies in the regions responsible for it. In 2005 there was the decision to develop an action plan for all regions, an action plan of the regional government where every ministry which is involved in H2020 is part of it. This action plan, the enterprises and network, is still the central instrument to provide services for proposals writing and project managements.

This was possible through a cooperation approach which means that invitations were made to everyone who had competences and qualifications to do certain services they weren't able to do. They asked to join them, these are the national contact points, these are the consultants, the companies and chambers of commerce. And as the region had the backbone of every ministry, this initiative was brilliant.

They started as number three, in FP7, behind Bavaria and other region. Now in Horizon 2020 they are in line with these two. In his perspective, this multi-actor approach is very important to raise awareness. Bernd has the feeling that in the moment, in his region, they have many initiatives concerning CE but not an action plan.

Since last year, they have a new government and they developed their own plans in the moment, but based on their contract of the coalition between conservative parties, we have the basis to do those kind of actions. So, he would recommend to develop such a kind of action plan, do it with all the relevant stakeholders and develop that strategy that everyone feels part of it and then, go into action, go into continuous improvement actions, meaning, do evaluations, think critically about it and invite everyone to suggest improvements.

Inês comments that a regional agenda is the key. She then asks Bernd about the synergies.

Berns says that with the synergies was the same process. They started in 2012 talking with their regional government. They said to the regional government that the topic was very important and asked them to look not only at the Structural funds, but also at Horizon 2020.

So, according to Bernd, in the current period until 2020 they expect for the first time, to get more money from Horizon 2020 than from Structural funds. He sees in the future, after 2020, the cutting of Structural Funds, especially in more developed regions. How can they live with those separated systems? Funding projects with NW players doing the same or developing the same technology, for example, nanotechnology or also CE projects, but not knowing what is happening in the other world, Horizon 2020. Therefore, in the moment they are trying to convince their regional government that Horizon 2020 is very important.

He tells that, probably, they are the only agency where they are able to offer proposal-writing support for both worlds. In fact, they have many agencies that are aware of H2020 but responsible for structural funds, but not vice-versa. And it is very important to have this one-stop shop. This is also what it is needed to reach everyone in the region. For instance, they managed to convince their ministry, for example, in the case of H2020, through the fact that applying for the H2020 money brings the need for consultancy services. Perhaps it would be a nice approach, he says, thinking in a similar thing for CE, but mixing those two funds, especially for those kind of topics that need also another thing, an international approach.

Bernd gives the example of an event, a huge event organised in March. This event consisted of 300 participants, where 200 participants were not from NW. He concluded researchers were only one third of all participants. Another example is the scale-up thing, if there is an idea for another regions' company to produce nice things, it is important to invite them to your region and do not think only in your clients, but focus also and be open to ideas coming

from abroad. This is, of course, a big problem as every politician is looking for what is a benefit from his region and not from other region. And if a company comes from other region it is said, still today, “sorry we are not able to deliver any consultancy service, but there is another agency in your region that can do it”. It is essential to work together. Cooperation approach is needed not only with the stakeholders in the region but also connected to other stakeholders, to other regions.

Inês states that, according to Bernd’s idea, it is important to build a common platform that allows catapulting all the information, all the knowledge in terms of applying to Horizon 2020 and use that as a goal, not using Structural Funds like we have been using until now.

Bernd adds that, of course, there are different regulations. Perhaps, some are doing also projects in both systems. There is this administrative burden and this is something that Bernd has been talking to his ministry, trying to make them rethink these regulations to be able to move. He says that H2020 will not move. H2020 will stay in the same system, because the system is also more competitive than the regional structural funds system. This one is an old one. So, it is paramount the need to modernize it, to think about the different burdens the proposal writers are suffering from and compare them to the federal system and to the Horizon 2020 to see the (des)advantages.

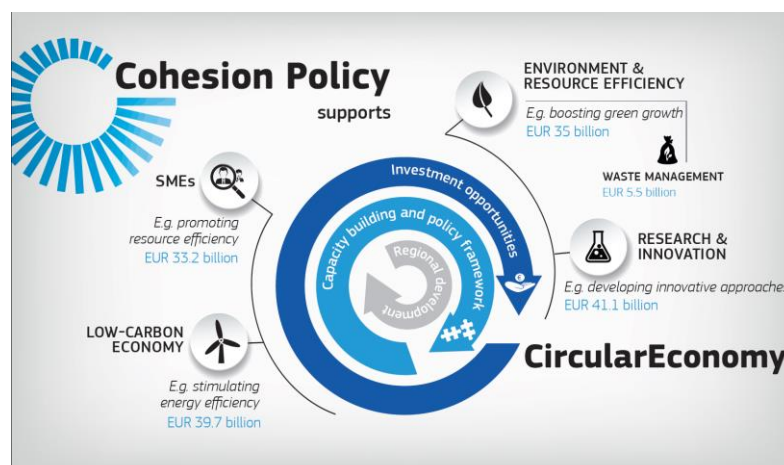
The critical element is to realizing and those things are existing in the topic that is being discussed today. The initiative in Portugal or in Finland, or in any other part of Europe. However, there is no really transparency. Therefore, it comes to the point that is important to make everyone clear of what is the advantage of this approach. The way to use this benefit for the own region and make it clear for everyone.

Inês thanks the participation of Bernd and of all speakers and closes the round table session.

4.7. The use of article 70 of ESI Funds – Katja Reppel, DG REGIO

Cohesion Policy is really one of the main investment funds to fund such diverse infrastructure like the regional development fund and regional fund for making CE happen in the regions in Europe. Region policy is a very comprehensive approach that brings together social aspects, inclusion aspects with economic growth aspects, innovation aspects but also environmental, energy saving and climate related aspects. That is very, very comprehensive. And somewhere CE issues sit a little bit all over the place.

In her presentation Katja shows the funding allocation which is foreseen for something very close to SCREEN activities.



There are about 5.5 billion of euros that were allocated in all range of different regional

development funding programmes for recycling and improving waste management.

There is another segment of about 2.3 billion of Regional development funds money, which targets specifically at small to medium size enterprises and gives them the support to take up energy and resource efficient technologies into their production processes, into their businesses.

There is also lots of funding in terms of water management and such, but also elements of that going into the water reuse, recycling of water that could be addressed in the SCREEN activities. There is a lot of funding around.

In addition, there is also, thanks to the Smart Specialization priorities that each Member State and Regions developed in their territory, an idea of who is actually interested in CE activities. Katja shows a data base of the RIS platform, where it can be seen 15 national and over 90 regional Smart Specialisation Strategies which mention on a way or another CE aspects.

So, there is definitely quite a lot of interest and funding around. Nevertheless, Cohesion Policy is not only about cash, it is also about bringing people together, it's about the partnerships which are built in the territory between the regional governments and national governments, maybe local governments and cities and the actors on the ground, companies, researchers, the civil society. The partnership principle is something which comes together with the funding.

For instance, looking into the city environment where there are many issues that are related to CE, the Urban Agenda for the European Union which is also one of these initiatives to bring actors together, has pick up on CE issues. Cities have specific allocations under the ERDF also to promote sustainable development. Also, Commission supports capacity building in regional authorities and technical assistance.

One platform for mutual learning between the different actors is the Network of Environmental Authorities and Managing Authorities (ENEA-MA) which DG Regio runs together with DG Environment. It is an exchange place of what is being worked, how it is tackled, how it is going in the ERDF, if there are any issues about Life programme, if there is any new legislation which came out or is in the preparation process in the EU. So, really one of the touch points is to bring different actors together.

Smart Specialisation Platform also gives a lot of support. And more individual support comes - individual for national and regional governments – from the TAIEX REGIO peer-to-peer tool, where governments can get experts sent to them, have discussions with their peers on what they have implemented in terms of CE strategy, for instance, in their region. For example: something they have set up – a recycling system, and want to learn from experts or just to receive training actions.

Jaspers is another technical assistance tool when the talk is about large projects, more than 50 million euros. Jaspers helps to shape these projects, shape them financially but also prepare stake issues, related to public procurement and so on.

The Smart Specialisation Platform is a particular support to regions that want to team up. Katja tells that one of these examples, the De-&Re-manufacturing for CE, is a partnership that just formed following a conference expression of interest and received particular support from the EC as one of these elements.

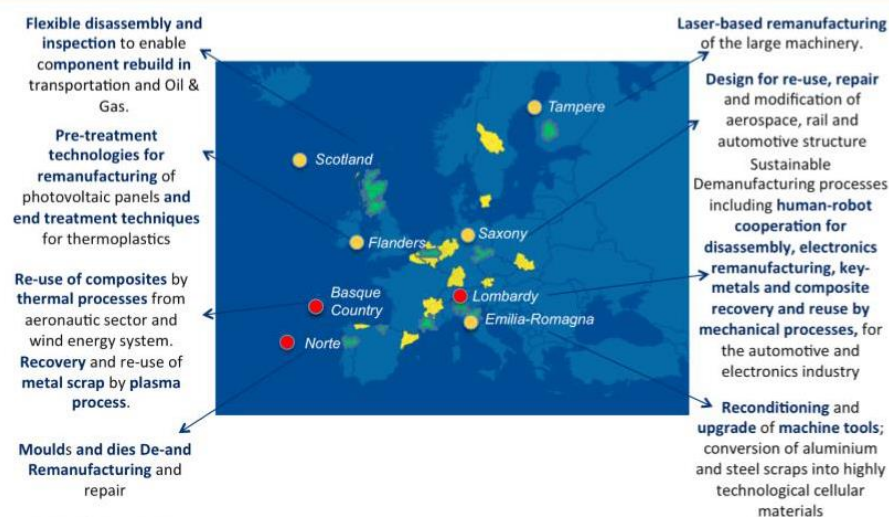
In fact, DG Regio goes much beyond what in DG RTD and Horizon 2020 is called Technological Readiness Levels. It really comes to demonstration, commercialization scale

of levels. There have been efforts to experiment in these new forms of support, find out what needs for different type of support are existing at regional and national level in order to pull the very diversified capacities in science, in industry, between the different Member States and go further.

According to Katja, the idea is trying to coordinate between different partnerships. They selected eight inter-regional partnerships for testing these new forms of support and what they have in the moment on the menu is to offer support to business plan design, to finance modelling, intellectual property rights, standardisation, market research, etc.

She elaborates a little more on the partnership “De and Remanufacturing for CE”. Lombardy Region leads it. In Katja’s view, it is a nice complementary and maybe a way to go a little further with what happens to SCREEN project once the H2020 support is over and to get into the real market and innovation roll out.

Pilot Geographic Configuration and Regional Specialization



The network will be composed of:

- New infrastructures, which will be designed, developed, and installed on purpose for this pilot network.
- Existing infrastructures, which will be upgraded towards integrated pilot plants.

Referring to the issue of synergies between Cohesion Policy, Structural Funds and Horizon 2020 Katja points out that Horizon 2020 and ESIF have some elements with relatively similar things. Where research and innovation activities and particular of companies in different places can be funded.

However, by at large, ESIF support for R&I and H2020 funding are very different funds, but the hope is that they actually can complement each other. How are they different? ESIF is really in essence about the socio-economic development in MS and regions, reducing disparities, structural adjustments, and industrial conversion. H2020 is and should be about research excellence more than anything. ESIF is concerned on lasting impacts on industrial structures and innovation eco-systems.

The concern is about all these different players between research infrastructures, living labs, incubators, advisory support services and so on, on the ground, which help innovators get on with their ideas and find the ideal partners.

Therefore, according to ESIF's requirements, unlike H2020, in most cases, when the funding ends, the show goes on, for at least 5 years. There is this idea that after the funding ends there must be something else, thanks to that funding, thanks to that kick-off investment that took place. There is a focus in ESIF on business, R&I with local relevance and technology take-up in all EU regions.

The allocations made by the Commission goes to businesses with local relevance. There is also tailored support for regions' needs and potentials (Smart Specialization). ESIF also involves entrepreneurial discovery process with industry, research and public sector.

And finally, the last big difference with H2020 is that ESIF has a technology-push and demand-pull approach fostering public procurement solutions for societal challenges. The possibility of deploying innovative technologies in the ground is there, in-built in ESIF. In Horizon 2020 there is a possibility for these procurement solutions but is much smaller, more limitative.

When the programming and preparation of the current Cohesion Development fund programmes started, the Member States and regions were asked to prepare Smart Specialization Strategies. They were asked to identify what were they good at. What were their excellent points. What were their strengths. And from the beginning they were asked to look for potential synergies. So, Smart Specialization Strategies prepared the ground for better innovation, governance, more university-enterprise cooperation and improved R&I support in the countries and regions (Stairway2Excellence, S3 support for lagging regions, Teaming/Twinning, ERA chairs, etc.).

There is also more teaming up between regions, and around related S3 priorities (Vanguard Initiative, thematic platforms, interregional S3 partnerships, MoU of Joint Undertakings, regional innovation scheme of the EIT-KICs) and preparing for transnational H2020 project consortia. There is also a good chance to map certain capacities (DIHs, KETs ...) and have a more comprehensive innovation approach (digitisation, industrial transition, skills, and structural reforms). There are a number of regulatory possibilities offered under the current programmes, in ESIF and H2020.

In the side of ESIF it is allowed, more and more, the alignment of ESIF funding opportunities to H2020 formats (Seal of Excellence for SME Instrument, Marie S. Curie, CleanSky2 labels, etc.), within State Aid limits. There is also, more and more adoption of good H2020 practices such as international evaluators, alignment to H2020 application questions and language, etc.

There are more and more cases of sequential combination of H2020 and ESIF (ERDF research infrastructures used for H2020 projects, preferential project selection for take-up of FP results in ERDF). There is one more possibility that is offered for the synergies setups by ESIF and H2020 and that is actually bringing the money together for the same project, respecting the national co-financing that is required. So there is already the first cases of accumulation in the same project (ECSEL JU & Italian competitiveness OP, financial instruments for ESS).

And then there is this rare animal which are some cases of ERDF funding outside the OP area (ESS in kind contribution). In fact, it can be more beneficial for some regions to spend some money outside the OP area.

Katja points out that the discussion in the Parliament to change some things in the ESIF regulation has started. That is called the Omnibus regulation. One of the ESIF modifications via the "Omnibus" Regulation is more use of Simplified Cost Options (SCO), article 67(2)(5), CPR Regulation (EU) No 1303/2013.

The current situation: Complex situation with limited possibilities, e.g. lump sums limited to EUR 100 000; Flat rates for indirect and staff costs max. 25% or 15% of eligible direct costs. Omnibus: no upper limit for lump sums; compulsory use of SCO for ERDF and ESF where public support does not exceed EUR 100 000 for operations not implemented exclusively through public procurement.

Another modification is an additional option for cumulating funds from different EU sources: Article 65(11) CPR Regulation (EU) No 1303/2013. In current situation: ESIF and Horizon2020 can be cumulated in the same project, provided that each expenditure / cost item receives funding from only one EU fund (Article 37 H2020 Rules for Participation mirrors Art. 65(11) CPR). Omnibus: Current option remains possible; Additional option offered: expenditure reimbursed from different ESI Funds and Union instruments on a pro rata basis in accordance with the document setting out the conditions of support (while respecting co-financing obligations under ESIF and H2020 respectively).

Last ESIF modification via the "Omnibus" Regulation are the clarifications and simplification for operations outside the OP area: Article 70(2) CPR Regulation (EU) No 1303/2013. In the current situation, the projects outside the OP area are possible if: the operation is for the benefit of the programme area; max.15% of a priority axis may be outside OP area; agreement of monitoring committee to each individual operation; management, control and audit by funding MA or agreements with authorities in the area in which the operation is implemented. Omnibus: Art. 70 totally redrafted; Restructuring aims to enhance transparency and increase legal clarity; and differentiate operation in EU but outside OP area & calculation of benefits *pro rata*; Outside EU (TA, promotion, information, visibility ...).

The simplification for R&I operations outside the MS is also an issue. In Omnibus: new Art. 70 of Common Provisions Regulation can offer special simplifications for research and innovation:

1. Operations within EU but outside the Member State: only 2 criteria apply:

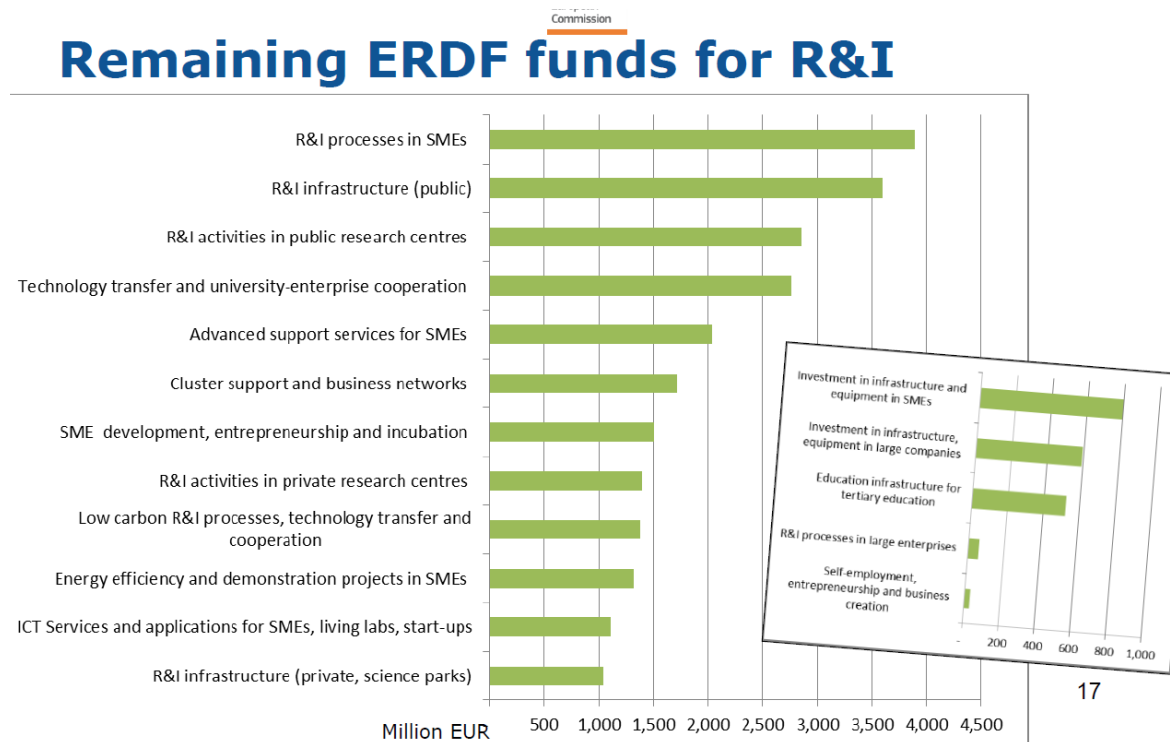
- max.15% of a priority axis at the time of adoption of the OP may be spent outside OP area
- management, control and audit by funding MA or agreements with authorities in the area in which the operation is implemented.

2. Operations outside EU:

R&I operations allowed, provided that expenditure is necessary for the satisfactory implementation of the operation.

Now, there is still a lot of money that is available for new projects, namely in Spain, Poland, Italy, Czech Republic and so on, in a total of 27 billion of euros (Data from Dec. 2017).

Following the same statistics, disaggregated to each category, it is possible to see the amount of money that is available for the following segments: R&I processes in SME's, R&I infrastructure (public), R&I activities in public research centres, Technology transfer and university-enterprise cooperation, Advanced support services for SME's, Cluster support and business networks, SME development, Entrepreneurship and incubation, R&I activities in private research centres, Low carbon R&I processes, Technology transfer and cooperation, Energy efficiency and demonstration projects in SME's, ICT services and applications for SME's, living labs, start-ups, R&I infrastructure (private, science parks) totalizing more than 1,000 million euros.



And there is also money available in one of the elements mentioned earlier, 5.5 billion for recycling and waste management. So, there is still about 1.3 billion of euros (data from Dec. 2017) which weren't allocated yet, regarding ERDF funds earmarked for household waste management, reduction, sorting, recycling, etc, namely in countries like Poland, Italy, Slovakia and so on. This might be the future purchase of solutions, which come out of activities of SCREEN.

Katja thanks all for the attention and ends her presentation.

4.8. Q&A

Carlo Polidori starts the Questions & Answers session by asking Katja about how can DG Regio provide more support to regions, since there are now five regions that already signed the Memorandum of Understanding. These regions are willing to start with some activities but probably they will need some help to go more in depth with practical issues. Which kind of support can DG Regio provide regarding this matter?

Katja says that in one of her slides there is the support and the framework of the inter-regional partnerships for Smart Specialization where the De-Remanufacturing is covered. The only thing DG Regio cannot give, to be very blunt, is cash in hand, because the money is already with the regional or national governments. DG Regio can offer advice.

The support, of course, only covers a part of what is being done in SCREEN and the MoU has a wider scope and requires a bit different thing. In this case, you can advise the regional governments that are aboard to apply to the TAEIX peer to peer support and specify what you want. They can expedite experts, they can bring organised meetings with mission colleagues, they can organise meetings and events between the involved regions and stakeholders, so this can be one of the possibilities.

But if there is the feeling that is still not enough there are other possibilities: the countries that participate in the SCREEN project can get in touch with the DG Regio's geographical units and ask them help. There is a list of specialists to help the regions in an array of subjects.

Bernd Janson asks Katja about the Seal of Excellence. He says that he discussed this with his Ministries in 2015 and they said that was not possible in this programming period. There is only a set of calls for corporate consortiums and not for individual projects. But as Katja showed in her presentation, there is a lot of money left. Bernd asks if there is place for a new suggestion. Not changing the Operational programme but if DG Regio welcomes the idea of using the Seal of Excellence to support individual projects that failed to grant H2020 money. Or does Katja has any other recommendation?

Katja answers that the money is to fund SMEs consortiums. If there is still some funding available in Bernd's region, there is a certain amount of flexibility to use this and without making any changes in the programme wording. It is possible to do many things to foster SMEs operations, with one condition: it has to contribute to one or more of the objectives that are set in the priority axis. She suggests going back and having a look to what are the targets, because that is the most important thing. There is no need to re-programme.

Ana Abrunhosa says she has enjoyed very much Katja's presentation, especially the changes, because in her opinion, there is the need of more changes. She is not only the President of Centro Region but also the Manager of the Structural Funds in Centro Region of Portugal. She explains that they have spent one year trying to implement a call that they have now. A call that finances the national counterpart of projects applying to [some typologies of] H2020. This call is aligned with the region's operational objectives but it also contemplates the evaluation made in H2020, in order to not duplicate the work. They only make a small evaluation. The only condition of this call is that the money will be only available if the other partners put their own part of the money, also. The main difficulty, she tells, will be assuring the money to be put by all regions that joined the consortium. Concerning the Seal of Excellence, she wonders if the idea of vouchers can work, because there are only criteria of accessibility, there is no selection/evaluation criteria. The Seal of Excellence can be an entry condition to the evaluation criteria, because in the vouchers we have not any evaluation criteria, only the basic requirements such as tax duties. The question that Ana Abrunhosa would like to do to Katja is what DG Regio can do to help Centro region to have less bureaucratic issues. What does she suggest that can help to make the ESIF applying less complex?

Katja posits that the simplification *per se* is an issue, which is at the heart of the Commission's concerns. There are elements at the Omnibus that could figure out for future regulations and that can facilitate the process. Her suggestion for lowering the red tape is not to add more rules to the ones that are already mandatory by the EU, for instance, asking proof for tax duties.

Esteban Pelayo (EURADA) tells Katja that he would like to have her views about how can Art^o 40 contribute to the common pot to provide grants to different regions.

Katja answers that a way to achieve such a virtual common pool is to gain the confidence and the interest of the policy makers in charge of the Regional development fund. To the many people that ask her about the Art^o 40, in particular if they come from countries that would like to have the regional development funds from other countries, she says to think like Kennedy: “don’t ask what the state can do for you, ask what you can do for the state”. So do not ask what the Cohesion policy in region A can do for you, ask what you can do for Cohesion in the region A.

In her perspective, the MoU has been having a work process well accomplished. If there is a willingness I would relatively fast get this on the agenda of the monitoring committees, of the relevant regional development fund operational programmes, so not to have only at the political level, but to bring it down to the administrative level. Talk to the managing authorities, talk to the monitoring committees, to the implementing bodies to make it clear what is SCREEN, what is the Memorandum, what is new in the regulations and structural funds regulations to overcome the understandable fear of many fund managers of infringing something or making errors.

Arthur ten Wolde says we are now in 2018, almost in the end of the current programming period. What does Katja expect of the new programming period, which are going to be the main changes for the ERDF?

In Katja’s point of view, there will be less money. This is not only because of Brexit and to the cut of around 50% in resources but also because it might occur a reshuffle of the actual programmes. To have the defence fund and H2020 reinforced, the money must come from somewhere... Unless the MS pay more.

She explains that there are actually three scenarios presented in the Commission Communication for Future Financial Framework that came out last 13th (February), and all three scenarios confirm that there is a strong interest in continuing to fund innovation by ERDF, and industrial transition and environmental issues, and so on. In that sense there is stability. There is, in page 11 of the Communication, a geographical image of the consequences of the cuts in Structural Funds. If there is only a cut of 15% then probably all regions will more or less live with less, maybe, but will receive ERDF. If the cuts are deeper, the map in the three scenarios is shrinking. First, the richer regions in more developed countries will be cut out, and the last scenario with very severe cuts means that even, for instance, Extremadura in Spain, being a less developed region, but in a country, which is not doing too badly, will also not receive ERDF anymore.

Katja says that the decision of how the next multiannual financial framework will look like, how the next programmes will look like, she cannot really tell. She can tell about the work they are doing in terms of analysis, for instance, and the experiments for inter-regional partnerships to reflect how can DG Regio help better this kind of activities. Such as the actions that SCREEN is triggering off and other activities. Whether that will materialize in the end as a segment of FP9 or as part of an ERASMUS+, support in COSMOE+, or as a reinvent of a new kind of thing like an Interreg with a specific aim, she really can’t tell.

She adds also that public consultations are on until the 8th of March, and that we should fill it in. There is one public consultation for Cohesion Policy and the future of it, and there is another public consultation for all investment area with Horizon and ERASMUS+, and other programmes, where everyone can make their voice heard.

4.9. Final remarks – Carlo Polidori, Project manager, VELTHA, BE

Carlo Polidori thanks Katja for her intervention and makes an overview of the Workshop.

About synergies, the first round-table. The final considerations are new potential synergies in regions. SCREEN has just scraped the surface of this still unexploited field. There is huge potential in what SCREEN can do, in trying to exploit this potential in the right way. There is the need to publicize the tool and methodology. First, it is important to make the tool easier, friendly to be used. This is the last part of the work of SCREEN project.

Barriers to CE. According to what was discussed, the first real barrier is the lack of awareness of what CE is and about the potential of CE. To overcome this barrier there is the need for education of values, education of public authorities, and a common approach. A common approach means also a common understanding. Again, SCREEN is on the right way also with these common assessment criteria for CE projects.

Another news: Tuscia University from Lazio Region, partner in SCREEN, will have next year a Master degree in CE. They are in communication with Tampere University and all participants are invited to communicate with both Universities in case of interest in promoting some kind of synergy with their region's universities, regarding CE.

Carlo tells that he can also anticipate that one of the results that will be part in the Policy Maker's Recommendation Manual is the need for one expert in CE within the regions. As been pointed out in several discussions, the regions have a lot of partners, sometimes not directly speaking between them, losing a lot of time in trying to take a decision, trying to find the right person who can answer the specific questions.

An example is the tool that has been presented for the chemical regions. The self-assessment tool is a questionnaire composed by almost one hundred questions, which is reasonable, because to make a profile of the region there is the need to have answered certain questions. He invites all participants to have a look at this tool and imagine how many persons in different departments or regions should be interested in answering and give the right answer. According to him, this example shows perfectly why there is the need to have one person with that function inside of public authorities, inside the regions. A person with specific training in order to be the focal point to whom all the questions and issues related to CE should be addressed and able to recognise or to contact the right person in the right department in order to give a quick support and facilitate certain decisions regarding CE.

According to Carlo, this will be one of the recommendations and probably will be a part of the Master degree .

Carlo tells that, in order to continue the dissemination of CE, it is time to discuss in the Policy lab a way to maintain the Policy Lab alive after the end of SCREEN project.

As a final statement, Carlo wishes to pick up a phrase from Katja and quotes "Cohesion Policy is a way to strengthen CE". He prefers to say instead that SCREEN and all actions raising awareness and providing tools for CE can strengthen Cohesion Policy.

Carlo thanks all participants very much and ends the session.

5. Policy Lab Meeting

The Policy Lab meeting starts with Tjeerd Hazenberg (Province of Fryslân, senior policy advisor) presenting the Frisian Policy towards a circular economy.

Our ambition for 2025: number one development region in the Netherlands and top 3 in Europe

provinsje fryslân
provincie fryslân

- Why?
- We want to make an ambitious contribution to the global goal of handling our natural resources and raw materials (SDG's)
- A great opportunity for the Frisian SME's to earn money with new circular business models;
- We want to stimulate the bottom-up movement. We want to include as much of our citizens.
- We think the linear economy will be a dead-end road in the long term.

Such a strategy is based on three pillars: doing, learning and communicating. Tjeerd concludes his speech by posing the following four questions to the project partners.

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provincie fryslân

Questions for SCREEN-partners

- are there other regions who are working on a policy document?
- Can we develop a joint benchmark?
- How do other regions deal with circular procurement?
- How do other regions stimulate education to include the circular economy in the curricula – from primary to university level

Due to the interest generated by the presentation of Katja Reppel, the related Q&A took more time than the scheduled one and Carlo Polidori is forced to drastically shorten his Policy Lab speech: however, he points out that he already anticipated several items in his previous presentation (see previous section 4.4).

With reference to the list of H2020 projects dealing with circular economy well ranked but not financed provided by the specific Unit of DG RTD, it extremely useful for the MoU purposes, but could be much more useful with same additional details (such as the related H2020 topic) that could be added without particular difficulties. Unfortunately the specific DG RTD unit, even if solicited by several emails and phone calls, did not reply neither is attending the policy lab. Carlo will make further attempts to involve them.

The Policy lab was then closed, due to the need of leave the room of the Portuguese representation in Brussels no later than 16h30.