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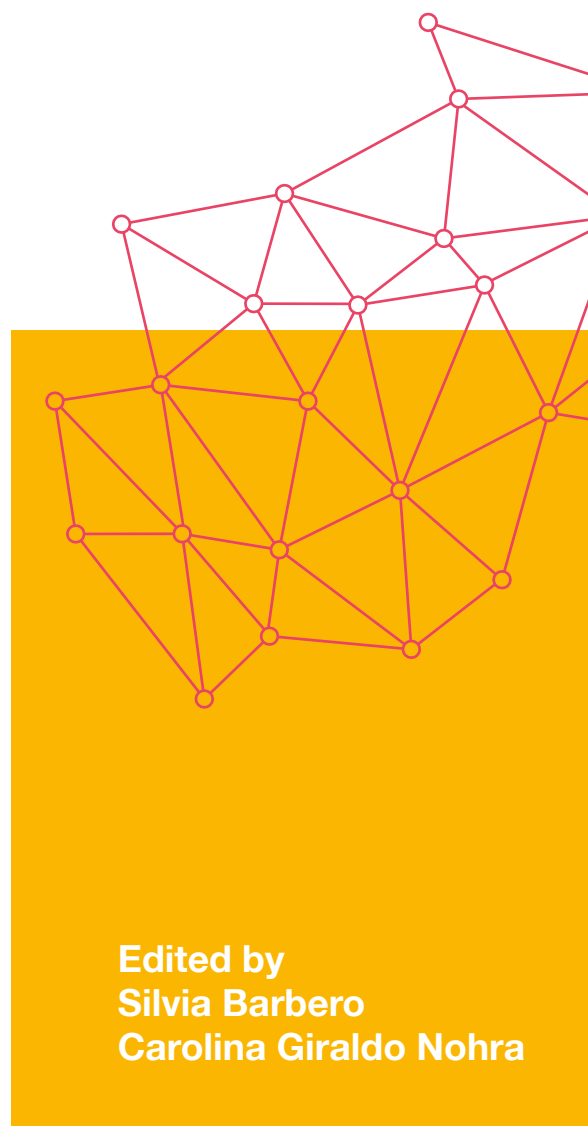
retrace



Policy Road Map

A Systemic Approach
for Circular Regions

volume 3



Edited by
Silvia Barbero
Carolina Giraldo Nohra

Allemandi



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A SYSTEMIC APPROACH
FOR CIRCULAR REGIONS

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List of Abbreviations

CE Circular Economy	GPP Green Public Procurement
HD Holistic Diagnosis	ICT Information and Communication Technology
EC European Commission	MA Managing Authority
ERDF European Regional Development Fund	NGO Non Profit Organisation
ESCP European Strategic Cluster Partnerships	OP Operational Programme
EU European Union	PA Priority Axis
FEDER Fonds Européen de Développement Économique et Régional (European Regional and Economic Development Fund)	PB Policy Brief
FESR Fondo Europeo di Sviluppo Regionale (English :European Regional Development Fund)	RAP Regional Action Plan
FSE Fondo Sociale Europeo (English: European Social Fund)	ROP Regional Operational programme
GDP Gross Domestic Product	SDG Sustainable Development Goal
GHG Green House Gasses	SBI Social Business Initiative
GP Good Practice	SD Systemic Design
	SME Small and Medium Enterprise
	UN United Nations
	PAYT Pay-As-You-Throw

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1. Introduction

SILVIA BARBERO

How can design innovate policy formulation for sustainable development and the growing of circular economies? How can the bottom-up and top-down approaches coexist with a common goal? The first question is especially interesting for all policymakers since it gives them a new methodology to set and face the problems. There is no one-fit-all solution, but every context and region can define its way to reach a local economic development towards zero emissions. In this sense, all the actors involved in this process should communicate and work together with the same clear objective. Design certainly has an undeniable capacity to facilitate and mediate different competencies (Celaschi, 2008). Furthermore, real cases like RETRACE demonstrate the ability to coordinate these competencies and manage complex problems for designing innovative policies.

The prevailing model of public policymaking, which focuses on reducing a complex problem into smaller more manageable components, is obsolete for the modern challenges. In the last century, as presented by Erik-Hans Klijn (2008), the public administration has evolved in understanding this complexity. Researchers have gradually studied and recognised the complexity of public policy implementation, which has increased due to the conceptual move from government to governance, but it is still necessary to have effective tools for designing policies. Significant debate has been going on about the importance of networks in which public policy is formed and realised. Indeed, as underlined by Chapman (2004), the current policymaking relies on a rational model that does not take into account the complexity of the context. Traditional mechanistic models are wrong in assuming that the system is stable and balanced, in contrast with the norm of change, in the instability and disequilibrium of dynamic, non-linear systems (Sanderson, 2009).

It is evident that most of the methods and tools used nowadays are obsolete to cope with the dynamic structure of society and are not sufficient to develop meaningful policies. If on one side the failure of the process of policy formulation mines the trust in the government capacity to make a change, on the other hand, to accept and see society as a complex system “suggests limitations on the ability of policy analysts and policymakers to change the dynamics of social phenomena (Elliott, Douglas, 1997).”

This turning point illustrates the reason behind the slow shift of the public policy domain in moving from a mechanical model to a more systemic one. In fact, system thinking as a general theory appeared in the 1950s (Chapman, 2004) and began to be discussed among 20th and 21st-century scholars in the public-sector domain (Zokaie et al., 2010). These studies investigated how to use system thinking in the public sector and had an influence mainly on

the analysis of complex issues and decision making in ambiguous and uncertain conditions. In the last decades, design has changed from a traditional, product-oriented design process to designing finding solutions for complex and often intractable social, environmental, and even political problems. Its focus has shifted from “objects” to a “way of thinking”, and in doing so, the transformation has assumed a more human-centred approach (Brown, 2008).

Design can play an active role next to the optimisation of the resources and the minimisation of the budgets. In fact, it can reduce political, social and cultural disruption ensuring a more resilient solution. The need for a human-centred design for a systemic change reveals that system thinking studies lack consideration of human interaction (Norman et al., 2015).

This is the third, and the last volume that illustrates the challenging and experimental path of the RETRACE project coordinated by designers with a Systemic Approach to policy design. The first one explains the Systemic Design methodology for defining the policy path towards a Circular Economy in the European Regions. Even if RETRACE contributes to promoting the implementation of a Systemic Design approach as a practical methodology to boost the transition towards a Circular Economy, it is not merely theoretical; it is a framework for tangible actions to be developed. These concrete actions are evident in this third book which collects the five Regional Action Plans (RAPs) delivered by the European Regions involved in the project.

The second volume aims to clarify the influence of Circular Economy Good Practices on the identification of solutions to tackle the identified Policy Gaps. The Good Practices provide an overview of the existing private and public bodies that are contributing in different fields to the implementation of circular business models. It also delivers specific knowledge and inter-stakeholder cooperation in the area of a Circular Economy to define five policy guidelines to solve the gaps. These five policy guidelines involve the Managing Authorities at different levels, thus the discussion on them is provided in this last book, which gives voice to all the actors involved.

The third book aims to complete the first phase of the project, as it collects the thoughts at a different level and from a different perspective. The first contribution to this fruitful debate is given by Piotr Barczak, Policy Officer for Waste at the European Environmental Bureau. He is responsible for the waste policy at the European Environmental Bureau and represents the voice of around 150 national NGOs dealing with environmental protection. Barczak underlines the importance to have a more Systemic Approach to the Circular Economy otherwise the risk is to remain in a simple and linear mechanism to reduce, reuse and recycle. The second contribution describes how the transition towards a Circular Economy is urgent in all Europe and how it can be appropriately tackled only if each level of governance works for the same objective and with the contributions of all stakeholders. Simona Bonafè, Parliament’s Rapporteur on the EU Circular Economy Package, presents the actions that at a higher level of governance can be done and how the top-down approach can stimulate all the European Regions towards the same virtuous goals. María Lozano Uriz, European Officer in the Committee of the Regions (CoR) in the SEDEC Commission, is Responsible for digital issues, research and innovation. She underlines the role of the CoR as a promoter of sustainable regional growth and which tools promote the interregional cooperation ecosystems. Moreover, the Unit for Clusters, Social

Economy and Entrepreneurship in Directorate-General (DG) GROW, shows the crucial role covered by social enterprises and a social economy as a connector between environmental sustainability and societal health. Besides the contributions by distinguished authors external to the project, the partners of RETRACE contribute with some reflections useful for all the European Regions that intend to undertake the same path. Carolina Giraldo Nohra and Agnese Pallaro, from the Lead Partner perspective, show respectively how the Systemic Design methodology can support the European governance towards a Circular Economy and the real actions delivered by the Managing Authorities. To be authentic and inspiring for other Regions, a brief explanation of the five RAPs delivered to RETRACE is presented. The volume also includes the full texts, in their original language, by all the responsible Managing Authorities who signed the RAPs in early 2018: Italian for Piedmont Region, Spanish for Bizkaia, French for Nouvelle Aquitaine, Slovenian for Slovenia, and Romanian for Romania's North-East Region. In this book, the Policy Brief in English is shared to inspire policymakers from other Regions who want to improve their actions towards a Circular Economy. Lastly, but not for importance, Marjana Dermelj, from the Government Office for Development and European Cohesion Policy, Development Policies Division, of the Slovenian Ministry, one of the RETRACE partners, summarises the guidelines for policymakers and managers supporting the Regions towards the Circular Economy with real actions.

This book reflects the fruitful debate of the RETRACE Interregional Dissemination Event,¹ held in Bruxelles on 22 March 2018. Organised in a morning session, not open to the public, with invited partner Regions' politicians and policymakers, and EU policymakers for disseminating the regional Policy Briefs and Policy Road Map; and in an afternoon session, opened to a broader audience, targeting EU Regions representatives, development agencies and other stakeholders involved in the promotion of Circular Economy. The morning interregional Policy Panel discussed how the milestones that can emerge from the RAPs produced by RETRACE could serve at the various levels. The debate included different interventions from Michal Kubicki, Policy Officer for Circular Economy (DG Growth), Maria Lozano Uriz, CoR Commission Secretariat (SEDEC), Piotr Barczak, Policy Officer for Waste at the European Environmental Bureau, Marjana Dermelj, from the Government Office for Development and European Cohesion Policy, Development Policies Division, of the Slovenian Ministry, and Vincenzo Zezza, Director for Research Innovation and University of the Piedmont Region (Italy). The afternoon conference was divided into two parts: the first one with two phenomenal keynote speakers (Janez Potočnik and Paola Migliorini), on how the CE is shaping the EU Regions; the second one on the RETRACE five RAPs and how they foster Regions into adopting integrated policies for the transition to a CE.

This last part was a discussion with Jean-Pierre Halking, Vincenzo Zezza and Eva Maria Revilla. This Interregional Dissemination event was successful not only for the number of attendees, neither for the high visibility it had on the media, but for sparking a dialogue with the European policymakers and politicians. This book confirms that the dialogue is still alive and the interest in the results that RETRACE provides is very high, also at an EU level.

To speed up local development towards a CE, it is crucial to establish a dialogue among all the members of the policy processes and to pursue complementarity between the top-down and

bottom-up approaches. The notion of good governance is related to efficient public government institutions. At the local level, this involves developing partnerships between top-down government initiatives and bottom-up local institutions and policies; at a European level, strengthening relations among different secretariats through agreements while listening to the needs of Nations and Regions with a bottom-up approach. Eventually, the ultimate goal of adopting a synergetic approach is to reinforce strategies and policies towards a CE (Lambi et al., 2013).

¹ Circular Regions on the Way. A Vision on Cohesion Policy Beyond 2020.

REFERENCES

- Brown, T. (2008). *Design Thinking*. Boston, USA: Harvard Business Review.
- Celaschi F. (2008). "Design as Mediation Between Areas of Knowledge." In Germak C. (2008). *Man at the Centre of the Project*. Torino, Italy: Umberto Allemandi, 40–52.
- Chapman, J. (2004). *System Failure: Why Governments Must Learn to Think Differently*. London, UK: Demos.
- Elliott, E., Douglas, K. (1997). *Chaos Theory in the Social Sciences: Foundations and Applications*. Michigan, USA: University of Michigan Press.
- Lambi, L., Lindemann, T., Morra, D. (2013). *Policy Brief 9. Top-Down and Bottom-Up Approaches*. Rome, Italy: Food and Agriculture Organization of the United Nations.
- Klijn, E. (2008). "Complexity Theory and Public Administration: What's New? Key Concepts in Complexity Theory Compared to Their Counterparts in Public Administration Research." *Public Management Review* 10 (3), 299–317.
- Norman, D. A., Stappers, P.J. (2015). "DesignX: Complex Sociotechnical Systems." *She Ji: The Journal of Design, Economics, and Innovation* 1 (2), 83–106. doi: 10.1016/j.sheji.2016.01.002.
- Sanderson, I. (2009). "Intelligent Policy Making for a Complex World: Pragmatism, Evidence and Learning." *Political Studies* 57 (4), 699–719. doi: 10.1111/j.1467-9248.2009.00791.x.
- Zokaie, K., Elias, S., O'Donovan, B., Samuel, D., Evans, B., Goodfellow, J. (2010). *Lean and Systems Thinking in the Public Sector in Wales*. Cardiff, UK: Lean Enterprises Research Centre Report for the Wales Audit Office, Cardiff University.

2. Think Circular, Watch Your Waste. Introduction to a Circular Europe

PIOTR BARCZAK

Europe is fostering the idea of a Circular Economy, in which waste is prevented and resources are preserved. This approach is not a mere economic option, but an urgent need if we want to secure a sustainable living for our future generations. This essay provides a journey through the objectives set by Europe concerning CE and its related challenges and opportunities, exploring the implications at different levels, from policymaking to packaging design, from the EU perspective to the Regional one.

2.1 PAVING THE WAY TOWARDS A CIRCULAR EUROPE

The need to move to a CE is evident. Our model of production and consumption in Europe is unsustainable. Many products become waste way too quickly, and the materials they contain are landfilled or destroyed in incinerators at an ever faster rate. The world cannot afford to continue wasting so many of its resources, especially our resource-poor and import-dependent Europe.

At present, Europe does not take into account the impact of its production and consumption patterns in developing countries. For example, Europe's Ecodesign standards do not take into account the effect of poor product design on poverty in developing countries. The carbon dioxide embedded in materials or linked to material extraction is not correctly evaluated. Today, over 50% of waste in Europe is burnt or buried, destroying valuable resources that are often imported from countries outside Europe at high costs. This is both an economic and environmental suicide.

Europe has a chance to take the fast lane by bringing the EU legislation on waste in line with the Circular Economy. However, swiftness is vital, since any delay comes at the expenses of job creation, carbon dioxide savings and other economies which are quickly catching up with EU standards.

The European Commission's impact assessment¹ of the new waste directives estimates that by 2030 a strong CE can lead to the creation of 580,000 new jobs and savings of €72 billion yearly. Also, between 146 and 244 million tons of GHG emissions could be avoided by 2020 through the reinforced application of the waste hierarchy, according to which waste prevention is the number one priority, followed by recycling. If on top of a 70% recycling target we also add more preparation for reuse (especially furniture and textiles) then the potential for new jobs could reach 867,000 units. This would improve the competitiveness of EU waste management and recycling sectors, and provide greater resource security with secondary raw materials being re-injected into the economy.

It is important to regard these opportunities from both a global and local level. The complementary approach of top-down policies and bottom-up activities is necessary to address the challenges in the most effective way. To strengthen grassroots movements we need to engage local citizens' associations and their representatives at EU level. The role of local organisations is crucial in fostering both democracy and environmental justice, as they have the necessary knowledge and understanding of local issues concerning development, urban structure, industry, tourism, etc.

Unfortunately, the debate in Brussels is dominated by national governments and big industries, with Regions being very often underrepresented. Some of the issues that are going to be discussed in 2019 and beyond have a high potential to engage Regions such as the revision of essential requirements for packaging, extended producer responsibility for textiles, ecodesign and chemicals standards. Regions are likely to take most of the responsibility for the successful implementation of such measures, but will also be the ones benefiting the most.

There is a need for progressive Regions and local businesses to be more visible in Brussels to raise the ambition bar. In many cases, inter-regional cooperation could also be very beneficial, for example in research, installations planning or purchases, which would help to reduce the costs of transition. Regions and NGOs should also have a more prominent role in planning national CE strategies. The national authorities shall reduce the development gap between Regions without slowing down the frontrunners in CE policies.

The EU Waste Legislative Package (European Council, 2018), officially published in June 2018, is the main legislative part of a broader EU Circular Economy Strategy and the beginning of a new era for many countries.

EU countries are now required to recycle at least 55% of their municipal waste by 2025, 60% by 2030 and 65% by 2035. Other approved measures include a 10% cap on landfill by 2035, a separate mandatory collection of biowaste and stricter schemes to make producers pay for the collection of crucial recyclables. Recommendations also include economic incentives for reuse, deposit-return schemes, food donations and the phase-out of subsidies promoting waste.

These laws outline a significant plan for the transition of the EU economy towards a more sustainable model and are a clear opportunity to help it recover even further. There are already some good examples in Europe that grew out of voluntary actions of businesses. However, without a proper regulatory and economic framework, they will remain marginal compared to the more conventional and powerful, conservative business interests. Today, according to the new waste laws, the EU has moved forward with the regulatory framework to extend the concept of the Circular Economy. The lengthy negotiations on waste laws reached a reasonable compromise, but we need to take into account the time required by the slowest countries to adopt more sustainable waste management. The timelines and milestones are undoubtedly achievable for all, regardless of the starting point.

Some Regions are already pioneering good CE practices, paving the way for others, testing solutions and showing examples. This is the right approach. Other regions that have not recognised

the CE as a priority so far can still catch up by implementing some of the policies that have been agreed upon at the EU level, without waiting for their national authorities to convert them into their national legislation. Eventually, the Regions are responsible concerning waste management policies and will bear the costs of inaction or harvest the benefits of a smooth transition. However, Regions should also look into ways to bring CE approaches into sectors where they preserve their competencies. These include green public procurement, ecolabelling, mobility, prevention programmes or support schemes for reuse. The accompanying EU funds shall follow the sustainability waste hierarchy principles when financing regional investments in Europe and beyond, such as the RETRACE project within the Interreg Programme which fosters inter-regional cooperation in the area of CE, as well as EU development funds addressed to the Global South.

2.2 WHAT SHOULD BE DONE?

First, we need to change our mindset about waste. Waste means resources, which in turn have economic value. Today Europe sends over 50% of its waste to landfill and incinerators, which is an economic folly as well as an environmental one.

Instead, waste prevention and recycling can become drivers for the European economy and its industries. They should not be considered as obstacles to growth or a burden on businesses. A European Environmental Bureau study (EEB, 2014) showed that if the EU adopts higher recycling targets and reuse targets for products among other things, it could create as many as 860,000 new jobs. The “three Rs” — reduction, reuse and recycling — can shift the focus of decision makers from waste generation to waste avoidance. They can also help secure Europe’s access to plenty of secondary materials which will make our economies more resilient to resource shortages and price hikes.

However, we will not build a CE only by increasing the amount of recycling within our current production and consumption patterns. We need to reduce the waste we generate; one way to do that is through legally binding waste prevention targets. European Member States and Regions can be more ambitious than the EU legislation and set their waste prevention targets. This is where Interreg projects such as RETRACE might play a crucial role. A Eurobarometer survey on the attitudes of Europeans towards waste management and resource efficiency indicated that 80% of Europeans want their country to waste less. This means addressing waste prevention first and foremost. The argument that methodologies are not ready yet to set targets on prevention is a weak one, as some prevention targets already exist in Europe (e.g., France, Italy, Flanders, Scotland and Wales) though they do not exist at a European level. Much is needed on food waste and marine litter prevention and even outlined as part of our global commitments regarding Sustainable Development Goals.² The methodology should support political goals and not the opposite. Pretending we cannot set targets because we have no methodology is a dubious argument used to delay action. The whole history of EU waste legislation shows that first we have to set the vision and the targets, and then the methodology. This is the case concerning recently agreed recycling targets, for which the EU will define a harmonised methodology across the member states in the coming years.

Secondly, the design of our products has a substantial impact on if and when they become waste. By requiring manufacturers to design their products to be more repairable and easier to re-manufacture, we can cut down on much unnecessary waste and at the same time make it easier for affordable repair services to become mainstream.

The EU Ecodesign Directive can help concerning this issue, as it already promotes energy savings on electrical and electronic products and could also deliver resource savings. Better product design (EEB, 2015) and ambitious waste targets must go hand-in-hand to unlock the potential of a Circular Economy in which nothing is lost, but much is gained.

Thirdly, we have to overcome legislative paralysis caused by the heterogeneous situation across the EU. True, some countries are more advanced than others. Flanders already recycles 70% of its municipal waste while Romania still landfills almost all of its waste. However, the EU must aim high to improve the situation everywhere. Every member state shall gain from higher recycling or re-use of products, from lower environmental costs related to closing landfills and incinerators to higher economic and social benefits such as job creation from increased recycling and re-use.

Our policymakers have to start thinking beyond “linear economics”, in which a product is made, sold and then discarded, and embrace the circular approach, where we re-use, recycle and, above all, prevent unnecessary waste. The Circular Economy Package, when it is released later this year, must provide a comprehensive and ambitious regulatory framework which allows new business models like repair services and product leasing schemes to enter the mainstream.

Forward-thinking companies, organisations and citizens are signing up to the Circular Economy while creating innovative schemes and services. The value that is locked up in a more resource-efficient economic model is around €600 billion with over 2 million jobs. We want the EC to think circular and help deliver these benefits. Since Europe’s experience can inspire some practices though it cannot claim mere replication, we should help developing countries define their own way to a CE. This should be related to the UN Sustainable Development Goals (SDGs), especially goal number 12 which calls for a change in current consumption and production patterns. Nevertheless, the CE can help Europe meet the 17 SDGs.

All available studies, including the EC Impact Assessment, state that the higher the ambition, the better for our economy and jobs. What we need is to accompany the ambition with investments, competencies and best practices.

Progress on waste management is undeniably not homogeneous across Europe. While some Regions are performing better than others, this cannot be an excuse for governments and EU and national politicians to stop progress at the EU level. There is no evidence which demonstrates that adopting more ambitious policies creates obstacles for the enforcement of existing waste laws. In fact, the best performers in Europe are the ones thoroughly enforcing current laws. Besides, an early warning system like the one agreed in Brussels on June 2018 to help non-compliant member States to fill the gap before the infringement stage.

Multiple actions need to be taken to transition to a CE. Some of them will need to include market-based instruments, also known as pull instruments, such as tax rebates for repair activities or recycled content in products. Green public procurement is also a significant instrument to achieve a CE.

Market-based instruments are needed throughout the whole value chain but especially in the first stage: ecodesign for easier disassembly and more cost-effective repair/recycling. The value chain approach is mandatory as we need to preserve the integrity of the materials and their potential for reuse from the day they are placed on the market for the first time until they are reused as many times as possible. That means designing products for reuse, using with care, collecting correctly, disassembling to make the best of each part and material, quality recycling and of course, business models that oppose the throw-away culture (servicing, new models of ownership, etc.). An essential aspect is to ensure there is an economic feedback loop between the initiator of the improvement and the pull incentive. A pull measure only works if the efforts and value put in products and new business models are not lost along the value chain for those who made the attempts. For example, if cherry-picking the most valuable materials is done at the collecting stage at the expenses of those who rely on this value for the reimbursement of their design investments, and may be left with only paying for the costs, the pull measures will fail. Attention needs to be paid to how we design the pull measures and ensure their efficiency.

Economic incentives, like enforcement, must come from national and regional authorities and cannot be stipulated at an EU level. The new waste laws, however, set some criteria where an agreed EU level approach might be relevant. This applies to producer responsibility schemes as well as to waste treatments and permissions of installations. That is why we the EEB are setting minimum requirements for producer responsibility schemes and modulating “end-of-life” fees.

Indeed, if a member state is left alone to decide what to do, we risk a patchwork of rules that would make it difficult for companies (especially international ones) to improve, as the market base for returning on investments may be reduced. Also, some member state may not be inclined to act at all as they would be under the pressure of local industries or because they just do not have the resources for defining and enforcing solutions. Subsidiarity should be accompanied by “solidarity”.

Another criticality to take into account is that quality standards for recycling have to ensure those standards that will pull up the recycling sector and not only reward today’s existing practices. The standards ideally target that recycled materials are as good as virgin ones. If this is not possible immediately, notably concerning plastics, there could be graded standards (along with related labels) so that users of the recycled materials can select what they want to use and sell it to their clients. Another must is to reject any leniency for hazardous contents in recycled materials. A CE can only work if materials are detoxified, and the same rules are pertaining to virgin materials are applied to recycled materials.

There is one crucial external factor that will shape the CE in Europe; namely the Chinese ban on importing foreign waste. China has recently enforced its customs to crackdown on the

smuggling of foreign waste. This action has triggered much attention in those countries, which massively depended on it. The official response of the Chinese government to justify its move has been the decision to clean up the consequences on the environment, which include waste prevention, boosting recycling infrastructure, fight littering and improving air quality. It is my opinion that this significant action is useful both for China and for the whole world. Countries that used to send their rubbish to China will now have to rethink their relation to consumption, waste and resources. Better management of waste and more CE are enormous opportunities not only for businesses but also a great chance for the creation of local jobs. Eventually, we could say that those countries will, in fact, stop exporting pollution and importing unemployment.

Many practices will need to change in the packaging sector to meet the CE criteria, according to which resources and associated value circulate as long as possible. The loops can be open or closed as far as the material flows. Moreover, the CE's priority is also the so-called absolute decoupling of the environmental impact of our production and consumption; and this can be achieved only by reducing the consumption of materials. In the case of packaging, this translates into substituting plastic single-use packaging with more robust and reusable packaging. In fact, this is not such an abstract alternative, as our parents or grandparents used to buy in bulk and use reusable packaging. CE has to mobilise people to rethink their consumption patterns and incentivise reusable packaging.

Regions can implement a specific measure to significantly improve their waste management, reduce landfill and incineration and indirectly influence consumers behaviours. This measure is called pay-as-you-throw (PAYT). It proved good results in municipalities that have applied it to their waste collections schemes. The burden of the cost of waste management will thus shift to those who produce larger amounts of residual waste. This fee will not apply to well-separated collected waste (recycled, biowaste) but only to residual waste. This measure will push people to rethink their consumption patterns and incentivise reusable packaging.

¹ Available <https://eur-lex.europa.eu/legal-content/es/TXT/?uri=CELEX%3A52014SC0207>. Accessed 20/05/2018.

² Available <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>. Accessed 20/05/2018.

REFERENCES

European Environmental Bureau (EEB) (2014). *Advancing Resource Efficiency in Europe. Indicators and Waste Policy Scenarios to Deliver a Resource Efficient and Sustainable Europe*. Brussels: Beasley Associates Ltd. Available http://make-resourcescount.eu/wp-content/uploads/2014/11/FINAL_Advancing-Resource-Efficiency-in-Europe_PUBL.pdf. Accessed 20/05/2018.

European Environmental Bureau (EEB) (2015). *Advancing Resource Efficiency in Europe. Indicators and Waste Policy Scenarios to Deliver a Resource Efficient and Sustainable Europe*. Hamburg: Ökopool. Available http://make-resourcescount.eu/wp-content/uploads/2015/04/FINAL_Delivering-resource-efficient-products_PUBL.pdf. Accessed 20/05/2018.

European Council (2018). *Waste Management and Recycling: Council Adopts New Rules*. Brussels: General Secretariat of the Council. Available <http://www.consilium.europa.eu/en/press/press-releases/2018/05/22/waste-management-and-recycling-council-adopts-new-rules/>. Accessed 20/05/2018.

3. From the Regions to Europe: RETRACE In the Wider Picture

AGNESE PALLARO

RETRACE is characterised by being lead by designers, who have strongly marked its path by sharing a new methodology (Systemic Design) which enables to achieve the project's goals successfully. Moreover, *RETRACE* has the broader objective to actively contribute to Europe's transition to a CE by strengthening EU Cohesion Policy. How the project can contribute to these challenging goals is the subject of this chapter, in which distinguished authors external to the project share their vision.

The European context is rapidly and radically being redefined on many levels, with unprecedented challenges questioning core aspects of its founding principles. The redefinition process also involves the policy framework concerning the promotion of a CE, with the recent approval of four directives on the Circular Economy by the European Parliament, which generate different impacts, from the macro-European (and, consequently, global) context to the micro-regional and local one, explored in the first contribution by Simona Bonafé.

While the redefinition of common policies is crucial, they risk losing effectiveness along the way from the macro to the micro dimension if the local contexts are not prepared adequately to receive them; just as the seed needs fertile soil to sprout. Regional Innovation Ecosystems, as Maria Lozano Uriz calls them in the second essay, stressing the role of the Committee of the Regions in ensuring bottom-up approaches find their way from the local to the European dimension.

The context to effectively implement a CE goes way beyond the conventional definition of CE such as better management, reduction, and valorisation of waste, which is a correct but diminishing perspective. The transition to a CE needs a systemic change on several levels, which engages societies at large, from economic actors to regional authorities and single citizens. Among them, a key role is constituted by social enterprises and a social economy as a connector between environmental sustainability and societal health, which is explored in the third contribution by the Unit for Clusters, Social Economy and Entrepreneurship in Directorate-General (DG) GROW.

The *RETRACE* project lies between these two perspectives. On one side it suggests a new methodological framework to approach policy design. On the other, it provides real tools to support the development of that much needed fertile soil.

3.1 The European Union Fostering the Circular Regions

SIMONA BONAFÈ

Circular Economy is an indispensable component of the European Union's efforts towards the transition to a sustainable economy, releasing fewer carbon dioxide emissions, using resources efficiently and at the same time remaining competitive. This transition offers Europe the opportunity to transform its economy while generating new sustainable competitive advantages. Going circular will require maintaining for as long as possible the value of products, materials, and resources while keeping the production of waste to a minimum.

3.1.1 CIRCULAR ECONOMY IN THE EUROPEAN UNION: TARGET, CHALLENGES, ACHIEVEMENTS

On 18th April 2018, the European Parliament approved, the four directives on the CE for which I was rapporteur. Now, Member States have two years to transpose these directives, and as it is always the case with innovation, the sooner the better. No time must be wasted: all studies agree that the new policy framework has the potential to unlock impressive savings for companies and citizens, preserving the environment and reducing carbon dioxide emissions.

The EU Circular Economy strategy will also have to take on an international reach: in a globalised economy, environmental impacts must be analysed in the different segments of the global value chain, from the supply of raw materials to the recycling process of waste. Effective CE actions can provide tangible contributions to the goals of the Paris Agreement.¹ Climate change is indeed one of the major challenges of our time, and implementing the Paris Agreement clearly goes beyond energy policies. Our strategy shall be based on greater consistency, which is essential for the implementation of the commitments made by the Union and its Member States at international level, in particular in the context of the United Nations 2030 Agenda for Sustainable Development and the G7 Resource Efficiency Alliance.

We aim to “close the circle”, complementing the measures contained in the legislative text, and therefore, meeting the SDGs adopted in 2015 by the UN, with particular attention to SDG 12 on sustainable consumption and production. Our action focuses on different macro-areas.

- ✓ Improving the product design by promoting its reparability, durability, and potential for improvement and recycling through the Ecodesign Directive and extended producer responsibility schemes. Furthermore, we must encourage resource efficiency in production processes, facilitating the industrial symbiosis transforming industrial by-products into raw material for other industries. In other words, the goal is to reduce environmental impact and create business opportunities, especially for SMEs.
- ✓ Better information towards consumers on the sustainability of the products they purchase

through labelling, to encourage innovative forms of consumption and integrate the needs of the CE in the field of Green Public Procurement (GPP).

- ✓ Promoting the creation of markets for secondary raw materials, setting quality standards for materials recovered from waste, encouraging recycling in fertilisers, promoting non-toxic recovery cycles, facilitating the safe reuse of treated wastewater.
- ✓ Promoting innovation regarding the CE through a set of existing instruments (such as the Horizon 2020 Programme) to foster new skills within the workforce and engage with various stakeholders through sectorial platforms.
- ✓ Suggesting a monitoring framework for the CE starting with the existing indicators.

The newly approved CE directives establish specific goals concerning waste management for the next decade, as already mentioned by Piotr Barczak in chapter 2. Despite strong ambitions within the old continent, not all Member States are aligned on the same standards. In this sense, some Eastern European countries, for example, have very high landfill rates, equal to 70-80%. Disposing of waste in a landfill does not make any sense in a CE, as well as being a risk for water, soil and air pollution. On this issue, by 2035, urban waste disposed of in landfills will be reduced to make up a maximum of 10% of the total urban waste produced.

The new legislation also addresses critical issues like marine litter and food waste. About the former, we aim to reduce its generation. Regarding the latter, we acknowledge that the phenomenon must be tackled not only for environmental reasons but also as a matter of ethical responsibility. For this reason, we have incorporated in the EU Legislation the target set in the SDGs to “halve the global level of per-capita food waste at the retail and consumer level”, in particular by developing a standard methodology for measuring food waste and clarifying European legislation.

3.1.2 THE ROLE OF REGIONAL AUTHORITIES IN THE TRANSITION TOWARDS A CIRCULAR ECONOMY AND SUSTAINABLE PRODUCTION AND CONSUMPTION

Economic actors, such as businesses and consumers, are key players for driving this process. The new regulatory framework for the development of the CE is sending clear signals to the economy and society in general. Long-term objectives in waste treatment, as well as in preparing concrete and ambitious actions to be implemented, require a significant role for local and regional authorities that can make the difference in enhancing the transition. The Union’s action must ease their task by stimulating investments and creating favourable conditions for innovation, competition and the involvement of all stakeholders.

Cities and regions of the European Union will be the driving force behind CE measures. Local authorities with their knowledge and experience have a privileged vision of local challenges and opportunities. Therefore, it is of the utmost importance to ensure them an adequate functional and financial autonomy. Building on experiences such as local participatory development and investment, Integrated Territories² will be able to provide valuable support to local stakeholders by providing funding flows and allowing the planning of local initiatives for the CE.

The amount of investment required to implement all of these measures is impressive and covers a wide range of aspects, such as infrastructures, services, research and innovation, and public

communication. Regions can have a crucial role in the definition of projects matching different types of EU supporting programmes and channels of financing, both public and private. Building on the experience of ESI, progress must be made for new rules enabling future EU initiatives to bring financing opportunities closer to the local level and small-scale projects. Member States should involve local and regional authorities in defining their national strategies, drawing up the necessary technical and fiscal measures, setting up financial support systems and exchanging Good Practices.

3.1.3 THE RELEVANCE OF POLICY OUTCOMES OF REGIONAL EXPERIENCES LIKE RETRACE IN SUPPORTING THE TRANSITION

To move towards a CE, changes must occur in the entire value chain, from product design to market and company models, from methods of transforming waste into resources to consumption approaches. Therefore, a real systemic change and a strong and innovative drive are required, not only regarding technology but also concerning organisation, societal approach, financing methods and policies. Hence, projects like RETRACE prove particularly precious in strengthening the change at a local level.

Supporting Systemic Design as a method, allowing both local and regional policies to move towards a CE is essential to a transition where waste, rather than being released into the environment, is introduced from one industrial process into another.

The industrial sector has already recognised the great opportunities offered by the increase in the resource productivity. More efficient use of resources along the entire value chain could reduce material needs of 17%-24% by 2030, with savings for the European industry of the order of €630 billion per year. According to studies on modelling at the level of products, by adopting approaches based on CE, the European industry could achieve substantial savings on the cost of materials. The potential is so vast that the EU GDP could raise up to 3.9%, through the creation of new markets and new products that will bring additional value for companies.

In conclusion, overexploitation of natural resources, climate change and biodiversity loss are global issues inextricably linked to rapid industrialisation, urbanisation and demographic trends. Through the CE package, we contribute to face these challenges. The EU is thoroughly committed to achieving progress in terms of resource efficiency. Recycling is progressively becoming an ordinary activity for industries and families across the EU. Nowadays, thanks to technological innovation, growth and sustainability can go hand in hand. It is now time to accelerate the process, extending efforts to different product areas and delivering benefits that only a forward-looking strategy can achieve.

3.2 European Regions as Leaders for a Cohesive Sustainable Growth

MARÍA LOZANO URIZ

The role of the Committee of the Regions is ensuring the voice of the territorial dimension is heard at the European Level. This essay describes how the CoR is pursuing broader EU objectives, such as strengthening the Cohesion Policy and stressing the relevance of the local level and a bottom-up approach to build Regional Innovation Ecosystems.

3.2.1 EUROPEAN REGIONS AND MULTI-LEVEL GOVERNANCE

The political action of the European Committee of the Regions (CoR), the European Union's assembly of local and regional representatives, is based "on the belief that cooperation between European, national, regional and local levels is essential if we are to build an ever closer and more mutually supportive union among the people of Europe and respond to the challenges of globalisation." This is the CoR mission statement from which all its work stems.

Therefore, our primary work is to involve regional and local authorities in the European decision making process and thus to encourage greater participation from our citizens. It channels the experience and expertise of the regional and local authorities into EU decision making.

As a European Union advisory body representing the local and regional authorities, bringing the territoriality concept into the EU arena, the European Committee of the Regions intervenes at several stages of the EU law-making process. Moreover, it also works closely with national, regional and local authorities, making their voices heard while fostering political debate, not only in Brussels but also in EU Regions and cities, outside Europe and online.

The CoR also works closely with the other EU institutions, notably the European Commission, the Parliament and the Council, to ensure that EU legislation and policies respect the prerogatives of cities and Regions and are in line with the principles of subsidiarity and multi-level governance.

3.2.2 SUSTAINABLE GROWTH: THE FIRST POLITICAL PRIORITY

The first of the five political priorities that the CoR has established for the current term 2015–2020 is "creating jobs and sustainable growth in cities and Regions to provide a better quality of life for citizens". The CoR considers that a new entrepreneurial spirit combined with a functional Digital Single Market and Smart Specialisation Strategies could lead to new skills, knowledge, innovation and employment. A bottom-up approach is required to stimulate targeted investment in the real economy and to trigger an exchange of best practices.

A project like RETRACE fits indeed perfectly this assumption. Promoting a Systemic Design as a method allowing local and regional policies move towards a Circular Economy as its core objective, falls indeed into what the CoR has been supporting for many years.

As President Lambertz has said: “Energy and climate issues must be at the very heart of Europe’s future. Regions and cities are on the frontline which is why we need EU environmental policy that is easy to deliver locally to ensure local and regional governments are fully on board. It is an opportunity to demonstrate that the EU does benefit the lives of all our citizens and proves that Europe is ready for the challenges of the 21st century.”

In this context, it is vital to define territorial ecosystems of innovation for the next EU multi-annual financial framework 2021–2027. What we intend by regional innovation ecosystems and innovation hubs is public and private quadruple helix actors (academia, industry, government, and civil society) organised at regional or local level. These actors coordinate research, innovation, and education activities, and accelerate among them the dissemination of results, knowledge transfers, innovation and development of new economic activities and services creating sustainable jobs while being close to the citizens and their local needs, which brings research and innovation close to society.

Regional innovation ecosystems generate a significant impact on the economy and regional competitiveness as well as great innovation close to ordinary people and their local needs. Moreover, Smart Specialisation Strategies have catalysed the development of regional innovation ecosystems.

Smart Specialisation aims to boost growth and jobs in Europe by enabling each Region to identify and develop its own competitive advantages. Smart Specialisation, through its partnership, brings together local authorities, academia and business sectors in the civil society. The objective is the implementation of long-term growth strategies.

Research and innovation are not targeted exclusively at companies but also concern public policies, Circular Economy, health, culture and community life, as well as the social economy and new economic models, which contribute to the creation of new partnerships, new activities and new social relationships. Therefore, the exploitation of innovation outputs should focus not only on conceiving products with an economic value but also services with a social value for citizens.

Scientific excellence is embedded in innovation hubs and ecosystems. Most entities benefiting from Horizon 2020 and other programmes (universities, research bodies, SMEs and civil society organisations) are solidly rooted in their cities and Regions. In the future, this element should also be included in the European budget.

The territorial dimension should also be taken into account when any policy is being framed. Also, Smart specialisation strategies provide resources for science stakeholders and businesses and create value for cities and Regions and citizens.

The economy and the business environments are becoming globalised and interconnected, while industries increasingly and heavily rely on ICT systems, which are revolutionising industrial processes across all the sectors of the economy, and creating entirely new, digitally enabled, products and services.

3.2.3 SUPPORTING INNOVATION IN EUROPEAN REGIONS

The CoR opinion on “Strengthening innovation in Europe’s Regions”, adopted in March 2018,³ thoroughly encourages and supports interregional cooperation based on Smart Specialisation Strategies (S3) which will help to build value and reshape the EU’s value chains by promoting investment synergies between the private and public sectors, thus contributing to the development of the EU economy as a whole.

The CoR also highlights that “the future S3 2.0 should be based on interregional strategic cooperation and sustainable links between regional ecosystems in the priority areas of Smart Specialisation, as a key to increasing the competitiveness and resilience of the Regions.”

Furthermore, and this pertains to a relevant point for RETRACE, “Interreg should be able to finance activities such as shared projects, demonstration activities, new value chain, etc., linked to Smart Specialisation areas: this would help Regions bringing innovation ecosystems in a European dimension, supporting the competitiveness of the single market.”

The CoR considers that the 9th Framework Programme, now called Horizon Europe, should include the regional discovery process and support the creation, strengthening and internationalisation of regional innovation ecosystems. Moreover, the use of the ERDF in interregional cooperation is crucial to the development of the future S3 2.0. Unfortunately, the proposal published last June⁴ seems to lack the territorial dimension. A more in-depth analysis is thus required and the CoR will adopt a relevant opinion on it in the plenary session of October 2018.

The CoR has also suggested a favourable legal framework for the next programming period to promote synergies and the possible combination of funds at all levels (local, regional, national and EU) to support interregional projects.

As already mentioned, an analysis of the new proposals done by the European Commission on the future Multiannual Financial Framework – many of them of great local and regional interest — will occupy the current works in the next months to adopt several opinions by the end of 2018.

Given the need to work together at all levels, from local to a European level, the following challenges need to be addressed according to the European Committee of the Regions proposed in its opinion on “Strengthening innovation in Europe’s regions”:

- ✓ Eliminating, wherever possible, the complexity and increasing synergies and coherence of fund management to create an ecosystem that promotes synergies between regional and European funding;

- ✓ Establishing attractive financial tools that help to create an interregional cooperation ecosystem;
- ✓ Maintaining a bottom-up approach which takes into account local needs and related priorities of S3 to increase synergy among EU funds.

Currently, one-third of the EU budget is allocated to the EU's Cohesion Policy which aims at reducing regional disparities, creating jobs, opening new business opportunities and addressing major global issues such as climate change and migration. The European Committee of the Regions is playing a very active role in the support and dissemination of the #CohesionAlliance,³ a coalition of those who believe that EU Cohesion Policy must continue to be a pillar of the EU's future. The Alliance was created thanks to the cooperation among leading European associations of cities and Regions and the European Committee of the Regions. It requires, starting from after 2020, the EU budget to make Cohesion Policy stronger, more effective, visible and available for every Region in the European Union. In July 2018, more than 6,100 signatories had given their support.

3.2.4 THE FUTURE OF REGIONAL ECOSYSTEMS

The process of building Smart Specialisations – more comprehensive than regional innovation strategies and broader than operational programmes of the structural funds — have helped to create a new “culture of cooperation” within Regions. While the most advanced Regions in Europe had already achieved the objective, others have benefited from this collaborative, flexible and participatory process among research and innovation actors and industry that facilitates demand-led innovation and collective solutions.

Now the time has come to fine-tune their implementation and scale them up by merging funds and levels of governance for the sake of European competitiveness while tackling global policies and challenges as the Circular Economy does.

If we want our regional ecosystems to become smarter and be more innovative, they have to cooperate, share, connect, co-create, be more transversal and scale up from the ground to create European value chains. Let's make it possible at all levels, let's boost this new way of working for the benefits of our citizens. Projects like RETRACE are the tangible proof of those benefits.

N.B. This article is written on a personal capacity and by no means involves the institution.

3.3 The Role of Social Economy in the Transition to a Circular Economy

UNIT FOR CLUSTERS, SOCIAL ECONOMY AND ENTREPRENEURSHIP
IN DIRECTORATE-GENERAL (DG) GROW

Who does not want to live in a city that is economically prosperous, yet takes into account people and planet as well? The Commission stimulates European businesses and consumers to make the transition to a stronger and more Circular Economy where resources are used in a more sustainable way. Social enterprises have been pioneers in the CE. As Stratan (2017) says, switching from the model of linear economy to a CE approach reduces negative impacts on the environment and society. It is precisely this what lies at the core of social enterprises: making social impact rather than merely aiming at economic profit. This chapter explores the role of social economy in the transition to CE, with a specific look at cities and how the Commission supports this transition.

3.3.1 A QUICK INTRODUCTION TO THE SOCIAL ECONOMY

There is no universally agreed-upon definition for the social economy. The most recent conceptual definition of the social economy by its organisations is that of the Charter of Principles of the Social Economy promoted by the European Standing Conference on Cooperatives, Mutual Societies, Associations and Foundations (CEP-CMAF)⁶. The social economy includes cooperatives, mutual societies, non-profit associations, foundations and social enterprises, which can take any legal form. They operate in a vast number of commercial activities, provide a wide range of products and services across the European single market and generate millions of jobs. The importance of social economy enterprise in tackling social challenges and fostering inclusive growth has been increasingly recognised in recent years across the European Union (EU). There are now more than 2 million social economy enterprises in Europe, representing 10% of all businesses in the EU. The social economy employs 11 million workers, accounting for 6% of the active EU population. Currently, a quarter of the new enterprises are social enterprises (EC, 2018).

The Commission takes an active role in creating an enabling ecosystem for the social economy. In 2011, the Commission adopted the Social Business Initiative (SBI). The SBI is part of the twelve projects in the Single Market Act I that the Commission put forward to re-launch Europe's growth and social progress. The SBI aimed to create a favourable environment for the development of social enterprises in Europe and the social economy at large. Since the SBI was adopted, the Commission has launched multiple activities to enhance access to finance, access to markets, create favourable framework conditions, foster social innovation and increase international engagement for the social economy. In this context, a crucial regulatory measure that encourages further developing of the ecosystem for a social economy is the "Start-up and scale-up initiative", which the Commission announced at the end of 2016. This initiative aims at improving the ability of start-ups to scale-up and emphasises the need of further supporting the social economy actors in access to finance.

3.3.2 WHEN SOCIETAL PROGRESS, PRODUCTIVITY AND THE ENVIRONMENT GO HAND-IN-HAND

The congruence between societal progress and productivity in the value chain is substantial. Societal progress, productivity and environmental sustainability can go hand in hand. Porter & Kramer (2011) argue that the competitiveness of a company and the health of the communities around it are closely intertwined. They introduce the concept of shared value, which is based on the assumption that companies can create economic value by creating societal value. This idea is not new. The role of firms went well beyond generating employment and providing wages. Firms used to have an essential role in the local community by providing housing for its workers and taking responsibility for providing education and forms of recreation. This perspective has been lost in management thinking in the last decades. Yet, society is changing the way it produces public values. Private firms are increasingly exploring how to do “the right thing” in a profitable way and are stimulated by the Commission to do so.

With the adoption of the CE Package, the Commission is fully engaged 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.⁷ The objective is to extract the maximum value and use from all raw materials, products and waste, fostering energy savings and reducing Green House Gas emissions. The proposed actions contribute to “closing the loop” of product lifecycles through greater recycling and re-use and bring benefits for both the environment and the economy. The CE Package draws particular attention to social enterprises which are considered to be pioneers in the transition towards a Circular Economy. These companies are recognised as valuable agents in social, economic, and environmental regeneration and renewal (Haugh, 2007).

However, the adoption of responsible business conduct by not only social enterprises but also the economy at large is required to stir a real transition. The CE entails a value chain approach which cannot be induced by a single company. The emergence of the CE and its deployment at large scale only happens at the crossroad of economic sectors. The interaction that takes place among technology centres, universities, large companies and small companies is the driver of an economy that respects social and environmental values. This is why regional and local governments play a crucial role in creating an enabling regulatory framework.

CASE STUDIES

I-did

The Dutch social enterprise I-did produces designer bags and laptop cases made from recycled material. It is the objective of I-did to contribute to the CE by using textile waste from companies as a basis for new products. Furthermore, the products of I-did are manufactured by men and women with a distance to the labour market. I-did aims to empower those men and women to (re)enter the labour market.⁸

Rehab Cycle

Rehab Recycle is a successful example of a social enterprise that provides a range of innovative recycling solutions, information security management services and asset recovery services for

businesses. Since its establishment in 1984, it has developed into a multi-national company that provides services in, i.e., the UK, Ireland, Netherlands and Poland. Besides contributing to the CE through innovative recycling, Rehab Recycle works with people with disabilities. In Ireland, Rehab Recycle is the largest non-governmental employer of people with disabilities.⁹

3.3.3 FOSTERING PLACE-BASED APPROACHES TO SYSTEMIC CHANGE

The Commission has developed several policy instruments that build on a place-based approach to foster societal, environmental and industrial innovation.

Through Smart Specialisation

To enable cities and regions to identify and build on their local competitive advantage for innovation, the Commission conceived the Smart Specialisation concept.¹⁰ Through its partnership and bottom-up approach, Smart Specialisation brings together local authorities, academia, business spheres and the civil society, working for the implementation of long-term growth strategies supported by EU funds. Smart Specialisation encourages collaborative work between partners to identify strategic sectors of growth, for targeted research and investment. Smart Specialisation targets very diverse sectors, from 3D printing to medical technology and from farming to solar energy. The CE and the social economy both constitute significant thematic areas of the Smart Specialisation Strategy.¹¹

Through Cluster Policy

Productivity and innovation of companies are strongly influenced by the geographic concentration of firms, related economic actors and institutions (EC, 2016). Clusters are groups of firms, technology centres, universities and other related economic actors and institutions that are located near each other and have reached a sufficient scale to develop specialised expertise, services, resources, suppliers and skills. Clusters are prominent in all major growing regional economies and play an essential role in driving productivity, innovation and competitiveness. Like Smart Specialisation, clusters can serve as a vehicle for the transition to a CE because they can create new CE value chains with critical mass. The European Strategic Cluster Partnerships for Smart Specialisation Investments (ESCP-S3) aims to boost industrial competitiveness and investment within the EU. These partnerships shall facilitate cluster cooperation in thematic areas related to regional Smart Specialisation Strategies, such as the circular and social economy, and to increase the involvement of the industry in the context of the Smart Specialisation Platform for Industrial Modernisation.

3.3.4 CITIES THAT ARE WORTH LIVING IN

Regional Smart Specialisation Strategies are where social enterprises can contribute to building cities that are economically prosperous and yet take into account people and planet. However, the transition towards a CE requires a systemic change that cannot be induced by a single company. A region needs to move forward with a clear, Smart Specialisation Strategy that builds upon the strength of their clusters. Only the interaction of economic actors within a stimulating ecosystem will make the CE emerge at the crossroad of sectors. Cities are in a unique posi-

tion to make the bridge between different policy competencies required to create new Circular Economy value chains. This is why initiatives such as RETRACE, which specifically aim at supporting local and regional authorities, are essential for building cities that are worth living in. Also, due to this place-based dimension of the CE, social enterprises become valuable agents of change. Social enterprises foster social cohesion at a local level and form new mentalities for the local socio-economic environment. As such, they are of significant value in leading the way towards a Circular Economy.

CASE STUDIES

Artic Smartness – Lapland

The vision of Lapland’s Smart Specialisation Programme¹² is to obtain a leading position in the smart and sustainable exploitation of the Arctic natural resources. The objectives of the programme are amongst others to set CE ecosystems in rural areas and foster work integration through social economy enterprises. Part of the programme for Lapland is dedicated to the organisation of dynamic and self-sustained rural areas, thanks to the creation of villages and agro-centres co-owned by local people, farms and firms specialised in locally based hubs of production of food and energy. Another part of the programme in Lapland is aimed to foster job creation and work integration, thanks to cooperatives and other social enterprises employing local people with handicaps or other disadvantaged backgrounds.

¹Available https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf. Accessed 10/05/2018.

²Available http://ec.europa.eu/regional_policy/sources/docgener/informat/2014/iti_en.pdf. Accessed 23/05/2018.

³COR-2017-04757-00-00.

⁴“Horizon Europe”: the Framework Programme 9 on Research and Innovation, COM(2018) 435 and COM(2018) 436 final, published 7 June 2018.

⁵Available <https://cor.europa.eu/en/engage/Documents/Cohesion%20Alliance/declaration-cohesion-alliance.pdf>. Accessed 24/05/2018.

⁶Déclaration finale commune des organisations eu-

ropéennes de l’Économie Sociale, CEP-CMAF, 20 June 2002.

⁷Available https://ec.europa.eu/growth/industry/sustainability/circular-economy_en. Accessed 24/05/2018.

⁸Available <http://www.i-did.nl/>. Accessed 20/05/2018.

⁹Available <http://www.rehabrecycle.ie/>. Accessed 24/04/2018.

¹⁰Available <http://s3platform.jrc.ec.europa.eu/what-is-smart-specialisation->. Accessed 20/05/2018.

¹¹Available <http://s3platform.jrc.ec.europa.eu/home>. Accessed 20/05/2018.

¹²Available <http://luotsi.lappi.fi/arcticssmartness>. Accessed 20/05/2018.

REFERENCES

European Commission (2018). Available http://ec.europa.eu/growth/sectors/social-economy_en. Accessed 26/05/2018.

European Commission (2016). *Smart Guide to Cluster Policy*. Brussels: European Commission.

Haugh, H. (2008). “Community-led social venture creation”. In *Entrepreneurship Theory and Practice*, vol. 31(2), 161–82.

Porter, M. E., Kramer, M. R. (2011). “How to Reinvent Capitalism and Unleash a Wave of Innovation and Growth”. In *Harvard Business Review*.

Stratan, D. (2017). “Success Factors of Sustainable Social Enterprises Through Circular Economy Perspective”. In *Visegrad Journal on Bioeconomy and Sustainable Development*.

4. Systemic Approach as an Effective Methodology for Supporting European Governance Towards a Circular Economy

CAROLINA GIRALDO NOHRA

Systemic Design expertise is rising as relevant and suitable on the making of a better European Governance. On that path, RETRACE aims to be a milestone on the way to a deeper awareness of the impact the implementation of Systemic Design on Policy Design processes in Europe. Also to disrupt paradigms on governance and open new ways towards territorial cohesion and EU policymaking for sustainable development. Moreover, RETRACE as interregional experience proves how the Systemic Design approach is vital for an integrated territorial development through the promotion of effective policies that enhance the Circular Economy. Proving that at European level this expertise for policymaking will be vital to support key policy instruments for the European Commission such as the Cohesion Policy. This chapter describes the role of Systemic Design on the future European Governance towards a Circular Economy through the outcomes of the RETRACE project and discusses the challenges and opportunities of this expertise as a role model.

4.1 THE JOURNEY OF RETRACE TOWARDS A NEW ROLE MODEL FOR POLITICAL DECISION MAKING

How can territorial thinking in Europe foster governance to address the current environmental and economic challenges of society? European regions as living metabolism or a “systems of systems” are on the need to seek for resilience to be able to deal with climate and economic impact. As the European society grows exponentially, it is vital to adopt right foresight actions on governance that take policymaking one step forward. Fostering preventive policy systems rather than reactive ones is a nowadays challenge. According to this, the need for territorial thinking on complex phenomena scenarios can be an efficient way to interpret and give solutions. This is possible through the design of policy strategies which can be based on the application of different design methods providing a diverse overview of policy issues. Fostering a broad combination of research methods from various disciplines such as data science, anthropology, and systems thinking, generates multidisciplinary synergies that shape policy tangible for all stakeholders in a decision making process (Bason, 2014).

On the contrary, nowadays, the current focus on policies is not the most efficient since it entails a top-down approach that does not take into account the final users: the citizenship. For this reason, participatory processes are a crucial element to design effective policy strategies, applying a bottom-up approach for policy-planning (Allio, 2014). The SD approach generates new relations among the regional entities to reach this goal and enables the visualisation of the hidden potentialities which boost a proactive collaboration among local actors. This engagement of regional stakeholders promotes an exchange of strategic thinking process that leads to the definition and implementation of an efficient policy planning. The SD approach has allowed territories to be understood in a more in-depth perspective, fostering horizontal dialogue among all stakeholders which leads to efficient decision making processes for policy design. Therefore,

this expertise has increasingly deployed to be understood as an essential and practical in the making of better policies and governance strategies, orientated towards sustainable development, by bringing a qualitatively different approach to the process of policy making (Bason, 2014).

RETRACE aims to be a milestone towards a deeper understanding of the impact the implementation of SD on Policy Design process in Europe. Featuring an efficient approach that encourages sustainable development initiatives in European regions by synchronising the efforts of policymakers and all actors involved in the decision making process. For European governance, this has become an upcoming approach seeking to address complex policy planning challenges. The SD expertise has been able that to establish broader questions towards European governance and established methods for policymaking. Fostering good governance through promoting holistic approaches on policy designers that allow better comprehension of the resources and behavioural dynamics.

Following one of the primary goals of the European Commission, which is to achieve territorial cohesion in Europe, is vital to promote more multi-stakeholder approaches among policymakers who are responsible for deciding the direction for a productive dialogue between public and private entities. On that view, the SD offers them the possibility to ground first impact measures with a long-term vision that involves transforming the public procurement policy, supplying financial or technical support to Systemic-Design-oriented industries, and creating collaboration platforms. Ultimately, if European governance starts to transition towards this innovative approach in policymaking, it will lead to a broader societal goal encouraging a transition to territorial cohesion through sustainable development while creating synergies between the Managing Authorities, citizenship, and business.

4.2 ADVANTAGES AND CHALLENGES: THE SYSTEMIC DESIGN APPROACH FOR A FUTURE EUROPEAN GOVERNANCE

The SD approach to the European Governance scenario aims to disrupt paradigms inside the territorial cohesion and EU policymaking scenario for sustainable development. This has been possible through its multidisciplinary approach which invites all participants from different sectors/backgrounds to co-create within a trans-disciplinary scenario, new policies that will bring in touch governments, civil society and the industry on the quest of more circular environments. This scenario is where the designer inside SD undertakes the role of “designer mediator”, whose “aim is to build or consolidate the team and the mediated integration between different types of knowledge and different specialism” (Celaschi et al., 2013). Delivering to the systemic designers the responsibility to co-create strategies towards a territorial cohesion that will promote relations between all the involved stakeholders. Moreover, it provides an instrument which benefits all parts leading them to paths where all can reach an active, sustainable development creating new scenarios of economic profit and cooperation (Barbero, 2017).

As the SD approach enhances territorial thinking through the generation of new relationships among components of the systems (Bistagnino, 2011). Ultimately, this approach promotes collaboration among a large number of local stakeholders on regards terms of knowledge and

sharing expectations not only concerning resources. Providing to Policy Design a practical scenario for better decision making opening a valuable space for advocacy in EU regions promotes the development of innovative policymaking processes in public sector bringing new approaches to European governance towards sustainable development. As a consequence, the SD aims to influence bottom-up approaches through contextual systems visualisation allowing better participatory processes and encouraging horizontal dialogues among all stakeholders of a territory. Allowing high levels of engagement among citizenship, governments, and industry, eventually enhances future strategy towards sustainable development.

Tactical cross-cutting projects like RETRACE are creating a doorway by generating a space where designers, Managing Authorities, and citizenship can effectively co-develop new policy opportunities. Proving that the implementation of the SD as a consolidated practice and key expertise to define policies towards a sustainable future. At the same time, the project highlights the active sphere of cooperation between governments and the design research community, where multi-stakeholder practice-led research becomes a mutual learning instrument to generate partnerships and policy development. The RETRACE full comprehension of systemic contexts emerges multiple opportunities for innovation which unveils a different overview of the territory opening up for a new model of the drivers of political decision making. The evidence of the SD approaches in policy making on RETRACE are promotes the credibility of this expertise over EU regional governance with the possibility to be scaled up. This experience has demonstrated that this expertise requires a long-term change policy scenario where the involvement of civil servants is vital for the continuity of any policy transformation.

Nevertheless, the SD as emerging expertise in the field of Policy Design faces multiple challenges as it fosters disruptive a model of policymaking. Through the outcomes of RETRACE, we were able to identify the main instruments for each region to transition towards a CE the among the results. This one comes from in-depth research through different regions, carried along the first two years (2016-2018) of the project with many innovators, policymakers and Managing Authorities across Europe. That is fostering a new economy in their regions while contributing with diverse points of view, with the purpose to obtain a common ground in the regional scenarios of policymaking. These findings can become an inspiration model for policymakers in other regions that have to deal with common Policy Gaps in the transition process to a CE (Pereno, Pallaro, 2018). At the same time, they prove that innovative approaches in decision making bring objections to some traditional organisational dynamics in governance. This can be noticed in the SD implementation were is very common to come across opposition from some policy-makers.

Through outcomes like the RETRACE's Regional Action Plans (RAPs) it was tangible to see the input of the SD with bottom-up discussions on policy through complex systems, instead of a traditional top-down approach oriented process also interpreted as a sharp criticism of current practices. This participatory process through the SD on the elaboration of the RAPs brought external elements (multi-stakeholder), delivering one of the main challenges which are to familiarize the multiple actors with the process of political decision making, to avoid from their side unfeasible proposals on regards what can be executed. At the same time, the RAPs highlighted one of the SD aims which is to promote a more preventive policy system where

policymakers can transition from the current reactive decision making process that has led to mechanistic practices. Furthermore, what also jeopardises the course of opening up the debate on European Governance for policymaking is politics which plays a significant role on the decision making process.

4.3 SYSTEMIC DESIGN AS A KEY PLAYER IN CIRCULAR ECONOMY AND CLIMATE GOVERNANCE

The increasing environmental challenges in Europe related to climate change are having undeniable consequences on the EU economic and social panorama (European Commission, 2017). On that scenario, European Commission (EC) has taken measures on Climate Governance fostering policy instruments towards the achievement of a sustainable, low carbon, resource efficient and competitive economy, targeting the Circular Economy as one of their main objectives. Advocating for a transition in regional and European policies towards a paradigm change from the traditional linear to CE. To that end, the EC has highlighted that “the transition to a CE is a systemic change” (European Commission, 2007) aiming to support roadmaps. As Ken Webster states “Rather focus on reductionist tactics, we should start considering making better use of the existing assets” (Webster, 2015). To provide such transition, the SD delivers a holistic overview of the territorial systems for more effective comprehension of the complex phenomena. From the interpretation of systemic contexts were identified multiple opportunities for innovation which will promote a sustainable approach towards the territory and a new model of political decision making.

For policymakers in EU regions, the SD provides a territorial holistic overview fostering an integrated development. Promoting policy design processes that enhance future productive systems on transitioning towards a CE. This leads to a better comprehension of why the SD should consider as one of the most effective approaches to find innovative foresight on governance for territorial cohesion. Reaching an active sustainable development through a CE vision generating a wide range of policies fostering local resources. The implementation of an SD approach will produce strategies towards more circular regions, reactivating all source of territorial resources in order to anticipate a local and regional development: “[..] the circular economy will offer a number of societal benefits for [...] European countries [...] not least in terms of carbon emissions reductions and job gains” (A. Wijkman, K. Skånberg, 2015). However, a circular develop needs significant changes in production and consumer behaviour and is consequently a long-term policy orientation ensuring territorial cohesion in time (EPSON, 2018).

RETRACE proves how these kind of approaches are vital for an integrated territorial development through the implementation of effective policies that enhances CE in the regions involved. At the same time promoting CE through regional cooperation among regions and actors in the same territory. The project has delivered an innovative policy-making pathway lead by the SD towards a more competitive European economy compatible with EU objectives on climate governance and SDGs. At the same time, it also unveils the current challenges that imply a transition towards a CE where this new policy approach will affect the European urban system and territorial balance (EPSON 2018).

As a Policy Design process at RETRACE delivered several milestones towards the decision making process related to CE and Climate governance:

- ✓ The key involvement of multi-stakeholder actors: communities, industries, regional authorities and research centres to be able to apply a bottom-up approach in the process of the role in launching and accelerating the transition to a CE.
- ✓ The Holistic Diagnosis proves the different approaches each region can have on CE policy level across Europe depending on geographical, environmental, economic or social factors while showing that the CE is not a standardised process but an adaptive one.
- ✓ The RAP clear framework conditions were set up among all stakeholders on the short-mid-long term actions to be implemented integrating their commitment towards a CE. This document established regional priorities, planned measures and forms of support available for the implementation period and beyond. Therefore, SD allows delivering policies were all stakeholders can see the evolution of the multiple actions on CE over time. This outcome of RETRACE also aims to transform key relevant policies instruments for regions such as the EU regional operational programme, Smart Specialisation Strategies, waste management or industrial development plans.
- ✓ As the SD aims to enhance new relations with the regions towards sustainable development. On that view RETRACE through the support of regional stakeholders encourage cross-sectoral cooperation on CE: between industries, associations, communities, research centres and Managing Authorities. Leading to a collaborative approach to consumption from new sustainable production systems, Sharing Economy to Industrial Symbiosis. On developing such models based on regional cooperation is the key to make the most of the CE towards territorial cohesion. Following is how the SD has promoted such axes within the RETRACE project:
 - ✓ Enhancing future productive relationships on Industrial Symbiosis. Through the Holistic Diagnosis (HD) in each region, it was able to identify the relevance of their multiple productive chains, unveiling the potentialities to create critical mass for industrial symbiosis. To achieve that on the RETRACE RAPs it addressed measures to facilitate cooperation among sectors for the production of by-products. In long-term action, it will transform regional Smart Specialisation Strategies generating new synergies between the industrial sector and the territory.
 - ✓ Promoting policy towards regional social economies. The SD allows visualising not only the quantitative resources holistically but also the qualitative assets on the social and cultural aspects that can impact CE at a regional level. Based on multi-stakeholder approaches RETRACE has included a range of actors delivering in each region more inclusive EC. Fostering territorial cohesion through empowering social economies across the regions proves that the CE must be developed towards a more inclusive society and active citizenship.
 - ✓ Boosting sustainable production and repair systems. For a successful transition, it is vital to think about the loop from the production point of view until the end of life product (repair, reuse, second generation raw material). Inside the RAP, such transition is considered at different levels from the macro-productive chains to local social enterprises generating synergies in larger networks between all CE regional stakeholders.

This kind of transformation towards CE requires research on design elements such as the SD that will be able to mediate this process and adapt to their morphology, towards the development of resilient and cohesive regions. It is not a casualty that projects like RETRACE are occurring at amongst the continuous discussion on the future of EU policies, regions and cities have to claim for a deeper territorial dimension in terms to accomplish more significant results on a cohesive territorial development across Europe.

4.4 SYSTEMIC DESIGN FOSTERING KEY POLICY INSTRUMENTS FOR THE EUROPEAN COMMISSION

In a European context, this method of policymaking aims to enhance a sustainable and balanced territorial development supporting key policy instruments for the European Commission such as the Cohesion Policy. For a better understanding of the undeniable relation between Cohesion Policy and the future of Europe, it is important to take into account on the agreements of COP21 on climate change and the UN Sustainable Development Goals for 2030 on which both Cohesion Policy plays a significant role (EC, 2017). That means this policy is one of the main drivers to accomplish these agreements is based on the promotion of territorial cohesion, so how should the policy be best implemented? Since the creation of the Cohesion Policy has been aimed at regional cooperation with an emphasis on less developed regions. It has also focused investments in areas undergoing industrial transition, rural areas, areas of high unemployment and deprived urban areas (EC, 2017).

The latest report of the European Commission on territorial cohesion states the need on focusing Cohesion Policy to focus on EU funding areas where the highest EU value-added can be achieved such as Social inclusion, employment, skills, research and innovation, climate change, energy and environmental transition (EC, 2017). At the same time, such reported highlighted the fact that the impact of globalisation, migration, poverty and a lack of innovation, climate change, energy transition, and pollution is not exclusive phenomena of the less developed regions, but instead are problems that are affecting all European regions simultaneously. Such scenarios require innovative scenarios for good governance to promote strong institutions that foster territorial cohesion.

The promotion of Good governance and better decision making process are essential to tackle poor institutional quality which decreases competitiveness and sustainable economic growth. The SD generates strategies which promote a better decision making process able to anticipate an efficient regional development that accomplishes major environmental-economical-social benefits generating a CE. In that way, supporting Cohesion Policy at different levels in European regions but also that over time have an effect on policymaking for European governance. On that view, the SD is proposed as an anticipatory tool for policymakers presenting a new starting point across the HD or system mapping (Battistoni, Giraldo Nohra, 2017). The overview of such complex scenarios provides tools to encourage the generation of new cooperation channels among different local actors. Moreover, promotes a multidisciplinary approach that invites participants from different sectors to co-create within an interdisciplinary scenario, new policies that will bring in touch governments, citizenship.

In particular, for RETRACE such Policy Design processes led by an SD approach can strengthen Cohesion Policy supporting the design and implementation of innovative regional strategies through a holistic perspective from regions allowing to understand better the needs of the population. The RAPs have highlighted that at levels of territorial Cohesion Policy it increases the visibility of productive investments but also to avoid wasteful investments. On the frame of the project, it clarifies how through SD it was possible to provide CE strategies which can be scaled up at a national or European level, promoting interregional cooperation.

To the best of our knowledge, Cohesion Policy possesses a long-term vision to guarantee a sustainable development over time. To achieve this, it is fundamental to hold a deep systemic comprehension of EU regions that the SD approach can provide. Allowing an adequate diagnosis of the gaps and potential assets that can impact a sustainable development towards a CE (Pereno, Pallaro, 2018). Furthermore, through the SD, RETRACE RAP provided better indicators to allocate funds that were linked to the challenges the EU regions are facing, from climate change, sustainable development, unemployment to social inclusion and migration. RETRACE contained several successful elements which could be extended to generate CE in EU regions. On this point, the experience at the RETRACE project should not be missed as evidence of how the SD is turning into crucial expertise for CE strategies that will achieve a cohesive territorial development for Europe.

RETRACE pretends to turn into a role model of anticipation methodology that could be applicable in different scenarios to foster the future European Governance towards a CE. Ultimately, this territorial thinking shall turn into a fundamental part of pan-European and national policy that leads the design and implementation of regional development strategies on the CE. For policymakers, the SD approach can support the creation of more efficient policies that can foster better governance on sustainable development and disseminate innovative solutions to reinvent and shape more circular regions across Europe.

REFERENCES

- Allio, L. (2014). *Design Thinking for Public Service Excellence*. Singapore: UNDP Global Centre for Public Service Excellence.
- Blair, T., Cunningham, J. (1999). *Modernising Government, Presented to Parliament by the Prime Minister and the Minister for the Cabinet Office by Command of Her Majesty*.
- Barbero, S. (ed.) (2017). *Systemic Design Method Guide for Policymaking: A Circular Europe on the Way*. Turin, Italy: Allemandi.
- Barbero, S. (2012). *Systemic Energy Networks Vol. 1. The Theory of Systemic Design Applied to the Energy Sector*. Morrisville, North Carolina, USA: Lulu Enterprises, Inc, Raleigh.
- Bason, C. (ed.) (2014). *Design for Policy*. Aldershot, UK: Gower.
- Battistoni, C., Giraldo Nohra C. (2017). "The RETRACE Holistic Diagnosis." In Barbero, S. (ed.). *Systemic Design Method Guide for Policymaking: A Circular Europe on the Way*. Turin, Italy: Allemandi, 112–20.
- Bistagnino, L. (2011). *Systemic Design: Designing the Productive and Environmental Sustainability*. Bra (CN), Italy: Slow Food.
- Capra, F. (1996). *The Web of Life. A New Scientific Understanding of Living Systems*. New York, USA: Anchor Books.

- Considine, M. (2012). "Thinking outside the box? Applying Design Theory to Public Policy." *Politics & Policy*, 40(4), 704–24.
- Elkington, J. (1998). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. Gabriola Island, Canada: New Society Publishers, Stony Creek.
- Ellen MacArthur Foundation (2015). Growth Within: A Circular Economy Vision for a Competitive Europe. *SUN (Stiftungsfonds für Umweltökonomie und Nachhaltigkeit) in collaboration with the Ellen MacArthur Foundation and the McKinsey Center for Business and Environment*.
- ESPON EGTC (2018). *The Territorial Dimension of Future Policies*. ESPON EGTC . Available <https://www.espon.eu/future-policies>. Accessed 10/05/2018.
- European Commission (2013). *Guide to Social Innovation, Regional and Urban Policy*. Luxembourg: Publications Office of the European Union.
- European Commission (2014). *System for Fund Management in the European Union*. Available <https://ec.europa.eu/sfc/en/2014>. Accessed 10/05/2018.
- European Commission (2017). *My Region, My Europe, Our Future. Seventh Report on Economic, Social and Territorial Cohesion*. Luxembourg: Publications Office of the European Union.
- Frey, M. (2013). "La green economy come nuovo modello di sviluppo." *Impresa Progetto. Electron. Journal of Management*, vol. 3, 1–18.
- Hadzikadic, M. (2015). Welcome to Policy and Complex System Journal. *Journal of Policy and Complex Systems*, vol. 2, no. 1.
- Hjorth P. and Bagheri A., (2006). "Navigating Towards Sustainable Development: A System Dynamic Approach." *Futures* 38, 74–92. Elsevier.
- Murray, A., Skene, K., Haynes, K. (2015). "The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context. *Journal of Business Ethics*." Vol. 140, no. 3, 369–80. doi: 10.1007/s10551-015-2693-2.
- Pereno, A., Pallaro, A. (eds.) (2018). *RETRACE: Good Practices Guide: Systemic Approaches for a Circular Economy*. Turin, Italy: Allemandi.
- Ruggieri, A., Braccini, A.M., Poponi, S., Mosconi, E.M. (2016). A Meta-Model of Inter-Organisational Cooperation for the Transition to a Circular Economy. *Sustainability*, 1-17. doi:10.3390/su8111153.
- Simon Boas et al. (2015). *Delivering The Circular Economy: A Toolkit For Policymakers*. Chicago, USA: Ellen MacArthur Foundation Publishing. Available https://www.ellenmacarthurfoundation.org/assets/downloads/publications/EllenMacArthurFoundation_PolicymakerToolkit.pdf. Accessed 10/05/2018.
- Webster, K. (2015). *The Circular Economy: A Wealth of Flows*. Cowes, Isle of Wight, UK: Ellen MacArthur Foundation Publishing.
- Wijkman, A., Skånberg, K. (2015). *The Circular Economy and Benefits for Society*. Interim Report, Club of Rome with the support of the MAVA Foundation and the Swedish Association of Recycling Industries.
- World Commission on Environment and Development (1987). *Our Common Future*. Oxford: Oxford University Press. p. 27. ISBN 019282080X

5. Circular Regions on the Way: from Theory to Action

AGNESE PALLARO

This chapter aims to present the five Policy Briefs developed as a result of the RETRACE project featuring five new long-term development frameworks whose primary objective is to foster into Circular Economy (CE) the five partner regions (Piedmont Region, Italy; Bizkaia, Spain; Nouvelle Aquitaine, France; Slovenia, North-East Region, Romania).

Transitioning towards a CE is among the most urgent challenges Europe has to face.

The previous chapters discussed how this challenge could be adequately tackled if mirrored at each level of governance and with the contributions of all stakeholders, losers first. The RETRACE project contributes to this collective effort in promoting the implementation of a Systemic Design (SD) approach as a practical methodology to boost the transition. However, the goal of RETRACE is far from being merely theoretical. The SD methodology is instead a framework for tangible actions to be developed, without which it loses strength.

The Interreg Europe programme offered a valuable tool to achieve this goal. In particular, it contributed to Europe's Cohesion Policy and solved common problems by focusing on the exchange of Good Practices, ideas and experiences improving regional policies (Interreg Europe, 2018). This goal was pursued by the Regional Action Plan (RAP), a document produced by each Region determining its commitment to implement the suggested improvements, which is the final and, in a way, the starting point of all projects. Hence, the lessons learned from the cooperation were channelled and translated into feasible activities. These were specified by nature, timeframe, stakeholders involved, costs related and funding sources. At the same time, RAPs are the actual starting point of projects. Their signature, as well as the project, is pointless if not followed by a real implementation. Its success heavily depends on the quality of the path that led to RAPs' definition. The Policy Briefs and the methodology that guided their development are at the core of this chapter.

5.1 FROM GAPS TO ACTIONS: TOOLS AND GUIDELINES FOR THE DEFINITION OF REGIONAL ACTION PLANS

RAPs aims to transfer the lessons learned from other regions into the local context to improve it. Easier said than done. The path can be cluttered and lead to either banal or utopian recommendations.

While aiming to suggest doable improvements, the first step towards RAPs definition was, therefore, the assessment of the regional situation concerning CE and the identification of Policy Gaps to be overcome; a process defined as Holistic Diagnosis (HD). This enabled regions to highlight their potentialities and critical points that could act as leverages to develop better policies. Parallel to the HD, the exchange of Good Practices (GPs) performed through the Field Visits gave partners access to a pool of case studies inspiring solutions or ways to approach common challenges. The results of the HD and the Good Practices were matched through the Matrix (Pallaro, 2018), which represents the preliminary step towards the definition of RAPs. Thanks to this simple and informal table, partners were asked to analyse the GPs in relation to their Region and to evaluate them, selecting the ones that could provide valuable inputs to address local challenges.

The second crucial step was sharing the outcomes of the Matrix with Managing Authorities and stakeholders, the principal key actors respectively as influencers and influenced by policies. Their feedbacks contributed to the evaluation of suggested measures according to their feasibility in the short and long term. This fruitful dialogue was maintained in the drafting of the RAP and led to the writing and signature of their final version. To develop the RAP each rRegion considered their current Smart Specialisation Strategies and development goals, among them a low-carbon Circular Economy which will establish a new foundation for the future sustainable development of Europe.

RAPs have been written in the language of each Region in order to maximise their effectiveness at the local level. Even though one of the main requisites of the Interreg Europe's projects is to ensure the sharing of experiences and their translation into tangible actions for partner Regions, a further dissemination of results was hampered by linguistic barriers. Nevertheless, interregional cooperation would benefit from considering the usefulness of projects not limited to the partnership and the project's lifetime. In order to ensure the possibility of sharing the experiences beyond the borders of RETRACE, RAPs have been translated into English to ensure the possibility of sharing experience beyond the RETRACE project. The resulting documents, the Policy Briefs, are included in this chapter.

5.2 THE RETRACE REGIONAL ACTION PLANS AND POLICY BRIEFS

Policy Gap Threads

The Policy Briefs (PB) are the result of the most efficient and effective resume of the actions described more in detail in the Regional Action Plans.

Although specific potentialities and challenges characterise each Region, PBs address six main common Policy Gap Threads that highlight different aspects of the transition towards a Circular Economy. These gaps explore the different areas of intervention that should be tackled to support a CE, starting from the involvement of all stakeholders for the creation of tailor-made policy measures. A more thorough description of the Policy Gaps can be found in the volume *RETRACE Good Practices Guide: Systemic Approaches for a Circular Economy* (Pallaro and Pereno, 2018).; Following is a summary here, the content of each PG Thread is summarised.

1. *Support collaboration between sectors*

This thread concerns the eligibility rules of the calls that enable stakeholders coming from different sectors to take part in projects which can lead to the creation of local value chains following the output-input principle and boost technology transfer between actors.

2. *Raising and knowledge of operators concerning CE*

The lack of activities devoted to increasing the participation, awareness and knowledge through training of operators emerges as one of the critical issues hampering the development and success of CE related projects.

3. *Policy regulations on CE*

The picture emerging from the matrixes provides an image of unclear, incomplete, incoherent and disharmonised policy regulations on different aspects of CE, especially on waste/by-products definitions, at different levels (local, regional, national and, European).

4. *Tailored policy measures on CE*

Even though the CE is a transversal topic in many funding schemes throughout Europe, the need to create tailor-made policy measures and calls clearly emerges from the analysis.

5. *Policy in support to business and market development for CE activities*

Besides the development of CE related projects, the necessity to support the creation of an appropriate business model for CE activities and the need to stimulate the market towards the reuse of by-products and waste has been highlighted as a core issue for the success of the CE.

6. *Policy focused on Small and Medium Enterprises (SMEs) and micro-manufacturing*

This refers to two main aspects reported: on one side the lack of tailored support to SMEs for their transition to a CE; on the other, the lack of support for the creation of micro-manufacturing processes sized on the local context.

Actions Proposed

These Policy Gaps are addressed by three to six actions in RAPs.

The majority of measures proposed relates to training activities. The actions include the creation of courses and workshops to either raise awareness on CE or transfer specific competencies to people (Italy – action 3, Spain – act. 1 and 2, France – act. 1 and 4, Slovenia – act. 3 and 4, Romania – act. 2) and target different stakeholders, from citizens to designers to policymakers.

Another share of actions aims to revise existing governance schemes or define new ones and support the creation of synergies between production sectors or between policies. This seeks to ease the exchange of by-products among different fields and promote the creation of cross-sectoral calls for projects. The measures include, for example: the introduction of explicit references to the CE in regional strategies (Italy – act.4); definition of roadmaps to support the reformulation of priorities (France – act. 2, 3 and 4, Romania – act. 3); the creation of interdisciplinary working groups (Spain – act. 5); introduction of financial incentives to stimulate strengthening the secondary raw materials (Slovenia – act.2).

A more explicit orientation of calls towards CE has been suggested in several actions. These include both short-term actions redefining current or future calls (Italy – act. 1 and 2, Romania – act.1) and long-term measures with the establishment of dialogue platform for sharing knowledge to outline the features of new calls (Italy – act. 5, Slovenia – act. 1 and 3).

Lastly, various measures recognise the value of the Holistic Diagnosis and envisage its continuation or replication, together with the promotion of pilot projects originating from it. This goal emerges more clearly in the Basque Region of Spain, where four out of six actions relate to it focusing on: promoting Circular Economy Plans in SMEs (act. 1); replicating the HD on specific sectors or contexts and promoting pilot projects resulting from the identified flows (act. 3 and 4); implementing pilot projects inspired by GPs shared within RETRACE (act. 6).

The impact of such policy recommendations will be overseen and monitored in the second phase of the project (2018–2020), the implementation period of RETRACE.

While the majority of measures will be implemented between 2018 and 2020, some actions are designed to last longer than the project lifetime. For each action, a specific indicator to measure its effectiveness has been identified.

5.3 SHARING BEYOND RETRACE

RETRACE PBs recognise that the transition to a CE will not be possible without fundamental changes in areas such as multi-governance coordination and synergies by the different administration levels (local, provincial and regional governments), multi-stakeholder collaboration between different sectors in industries and companies (value chains in priority sectors), consumption and production patterns, and resource efficiency preventing the generation of waste and promoting the use of secondary raw materials. They also provide an overall framework from each Region for a better overview of the current initiatives and projects defined within the context of RETRACE that are attempting to support the transition towards a CE.

RETRACE PBs are the result of an in-depth conversation carried along the first two years of the project and research with many innovators, policy makers and Managing Authorities across Europe who are fostering a new economy in their regions while contributing with diverse points of view, with the purpose to obtain a common ground in the regional scenarios of policy making. This outcome originates from an inspiring path through different regions by all those collaborators who have shared their experiences to support a better and more sustainable governance.

The CE Package highlighted the key role rRegions play in accomplishing the European transition to a CE a reality. The challenges faced by rRegions in this process are akin, though the answers are manifold. The transition will indeed have different implications in EU regions, due to the multiple economic, productive and social contexts which need to be addressed. A ware of the role that interregional cooperation plays in this process, the goal of PBs is to share and disseminate the results of RETRACE beyond its borders, with the aim to stimulate a fruitful dialogue overcoming the lifetime of this project.

REFERENCES

- Interreg Europe (2008). Interreg Europe Programme Manual, version 5. Available https://www.interregeurope.eu/fileadmin/user_upload/documents/Call_related_documents/Interreg_Europe_Programme_manual.pdf. Accessed 26/07/2018.
- Pallaro, A. (2018). *Steps and Methods for a Good Practices Selection*. Turin, Italy: Allemandi.
- Pallaro, A., Pereno, A. (2018). *Good Practices Guide: Systemic Approaches for a Circular Economy*. Turin, Italy: Allemandi.

5.4 THE RETRACE POLICY BRIEFS

I. PIEDMONT REGION | ITALY

Overview of the Circular Economy in Piedmont

The RIS₃ (Regional Innovation Smart Specialisation Strategy) of Piedmont identifies seven priority areas which the Piedmont Region is particularly specialised in, considering the enterprises concerned that are involved, the technological know-how and the presence of high-level research centres, resulting in a strong concentration of innovation activities: Aerospace, Automotive, Green Chemistry/Clean Tech, Mechatronics, Textile, Agrifood and Life Sciences. Moreover, the RIS₃ is guided by two transversal trajectories, “Smart” and “Resource efficiency”, the latter intended as “the use of skills and processes to increase efficiency in the priority areas of innovation to support the emergence of a more sustainable regional economy” (source: RIS₃), which apply to all priority areas.

Even if the CE paradigm is not explicitly addressed as a policy goal, the identification of the “Green Chemistry/Clean Tech” area demonstrates the presence of a regional industrial specialisation which is particularly promising for CE and the willing of the Region to support its development. On the other side, the “Resource efficiency” trajectory is a clear indicator of the willing of the Region to promote sustainable production processes in all priority areas.

The RIS₃ is implemented mainly through Axis I (Research, Innovation and Technological Development) of the ERDF Regional Operational Programme (ERDF ROP), with a financial allocation of around € 350 million. This means that a substantial funding support, through different schemes, is delivered to implement the RIS₃ objectives. After the first three programming years, many R&I projects related to CE processes have been already funded, but there is an ample room to improve support in a more systemic way.

Under a more general point of view, the regional situation is characterised by good assets to build on towards a CE (e.g., research, innovation and technological development capacities and initiatives, robust economic sectors with leading enterprises, key actors mobilised, networks, solid methodology). On the other side, a critical mass of industrial and research investments towards Circular Economy is still lacking, which calls for further actions.

The Systemic Design method was implemented in the frame of the RETRACE Interreg Europe project was implemented the Systemic Design method to obtain a Holistic Diagnosis (HD) about the current context of the Piedmont Region. This analysis gave as the main outcome the Region’s greatest potentialities which will be key crucial in the developing of better policies for the regional transition in to a Circular Economy (CE). Moreover, the HD performed an analysis on three RIS₃ areas (Automotive, Green Chemistry/Clean Tech and Agrifood), showing their potentialities concerning the CE, but also some critical points that require to be overcome.

OnBased on that approach, these were the aspects that needed to be improved with the support of RETRACE:

- ✓ knowledge transfer: the identification and sharing of significant potentialities for a Circular

Economy in the RIS3 priority sectors, through the identification of business and policy cases in important industrial sectors, with a high potential of transferability;

- ✓ awareness: the involvement and engagement of key actors, such as cluster management bodies, enterprises and universities, to be reached through the activities of the Stakeholder Group and a stricter collaboration between relevant Regional Departments;
- ✓ policy action: improvement of the orientation of regional policies towards a Circular Economy, to be reached through the exchange of Good Practices with the RETRACE partner Regions, the findings of the HD and the dialogue with stakeholders.

Current Policy Instrument Addressed by RETRACE

In the broader framework of promoting actions to support the transition towards a CE at the Regional level, the RETRACE project addressed the Regional Operational Programme (ROP) 2014–2020, co-funded by the European Regional Development Fund (ERDF) under the “Investment for Growth and Jobs” Objective. Among the Priority Axes (PAs) of the ROP, the following are considered to be the most relevant to foster the adoption of CE principles within the regional production system.

- ✓ PA1 – Research, technological development and innovation. Based on the Regional Innovation Smart Specialisation Strategy (RIS3), it mainly aims at strengthening the regional innovation system and increasing the innovation capacity of regional companies. For this purpose, most of the measures are designed to stimulate collaboration and cooperation among companies and research centres and academies. Main policy and funding schemes showing the highest potentials in terms of support to CE processes are the Innovation Clusters (e.g., one of the main pillars of the research agenda is the Energy and Clean Tech Cluster Circular Economy and other Clusters such as Green Chemistry and Advanced Materials, Smart Manufacturing and Products, Agrifood and Textile Clusters which are focusing on actions supporting CE processes) and the Technology Platforms, acting in a limited number of highly relevant and strategic innovation areas (such as the Factory of the Future, the Life Sciences and the new Bioeconomy Platform). Other measures, such as the Industrialisation of results of R&I activities, the Research Infrastructures and the start-up measures, can support an overall and systemic process of fostering CE.
- ✓ PA3 – Competitiveness of productive systems, addressed to support SMEs development. Among the measures of PA3, the one aimed at supporting investments in SMEs (“Innovazione PMI”) is specially designed to foster innovation and sustainability. Investments leading to improved environmental performances of products and processes receive a reward during the selection process; for example, the improvement of waste management and the use of secondary materials instead of raw materials are positively evaluated.

By supporting innovation in relevant sectors and implementing the transversal RIS3 principle of resource efficiency, the ROP has already taken some steps towards fostering green growth and has proven that is possible to build on regional strengths regarding innovation capacities. Nevertheless, the ROP does not explicitly identify CE as a policy goal; this, of course, does not prevent from supporting CE underfunding schemes, though a more explicit focus on CE would be beneficial, also to further increase awareness by involved industrial, research and innovation players.

On that regard RETRACE supports the improvement of the ROP especially under the gov-

ernance point of view, encouraging improved focus for the calls to be launched (see Actions 1 and 2), integrating new evaluation systems to further boost the adoption of resource efficiency and CE concepts in research or in investment measures (see Action 5).

A structural change of the current policy instrument was regarded to be unlikely, mainly due to time constraints; but the RETRACE results could support future policy design, e.g., for the next programming period (see Action 4 and 5). The results of the implementation of the RETRACE actions are also expected to gain an indirect improvement in the implementation of regional policies towards the CE, through increased awareness and commitment of key regional innovation actors, thanks to a strengthened dialogue all along the RETRACE implementation.

Policy Actions

These actions attempt to give concrete answers to the question: how is it possible to stimulate, favour and support the circularity of the economy in spite of the presence of systemic limitations (for example on the legislative level) and roles (the defined number of policy instruments on which one can operate)?

The identified answers aim to affect different levels:

- ✓ A level that implies a direct activation of measures through a tool for calls, within the defined framework of the 2014–2020 ROP ERDF and impacting, where possible, on existing measures (Actions 1 and 2);
- ✓ A level concerning governance and policies, in a medium-term perspective while coordinating its action with that of other sectors and departments of the same Region or with other institutions (Actions 4 and 5);
- ✓ A level concerning culture, in collaboration with the Politecnico di Torino (Department of Architecture and Design), to train a future class of professionals in possession of the technical and critical tools necessary to promote a circular approach to the economy (Action 3).

The Regional Action Plan includes five Actions which:

- ✓ Address a wide range of Policy Gaps;
- ✓ Promote the transition towards a Circular Economy in different areas from governance to education;
- ✓ Involve a wide range of local stakeholders from students to enterprises;
- ✓ Combine impacts on current and future programming period.

ACTION 1 Call 2018 for Research Projects Reserved for Companies Already Associated (or Not-Yet Associated) with Innovation Clusters.

POLICY GAP

- ✓ Policy in support to business and market development for Circular Economy activities
- ✓ Support collaboration between sectors.

DESCRIPTION OF THE ACTION

Thanks also to the contribution of the RETRACE project, the next call for proposals, scheduled for the first half of 2018, will be based on research agendas which are structured not only based on priority areas but also around the two transversal trajectories of the Strategy for the in-

telligent specialisation of Piedmont: the “Smart” trajectory and “Resource efficiency” trajectory. This will allow to orientate and bring out more clearly the planning concerning the processes of resource efficiency and Circular Economy.

TIMING: Launch of the call for proposals: first half of 2018.

ACTION 2 Bioeconomy Platform.

POLICY GAP

- ✓ Tailored policy measures on Circular Economy.
- ✓ Support collaboration between sectors.
- ✓ Policy in support to business and market development for Circular Economy activities.

DESCRIPTION OF THE ACTION

For this action, the Piedmont Region will launch a call for projects in the first half of 2018 aimed at establishing a new platform dedicated to “Bioeconomy”. The areas of identified intervention cover the areas of innovation of S3 related to agri-food and green chemistry/clean tech, and projects that intend to create connections between these areas which are explicitly encouraged with reference to the Circular Economy model.

TIMING: Launch of the call for proposals: the first half of 2018.

ACTION 3 Training Activities at the Politecnico di Torino.

POLICY GAP

- ✓ Raising involvement and knowledge of operators concerning Circular Economy.

DESCRIPTION OF THE ACTION

This action aims at supporting the transfer of the Systemic Design method as main focus inside the Open Systems course, the main teaching module of the Master’s Degree “Aurelio Peccei” in Systemic Design at Politecnico di Torino, attended every year by about 80 students. The core aim of the course is to perform a Holistic Diagnosis of the Piedmont production chains through the Systemic Design approach. In addition to the course, a one-week workshop organised by the Department of Architecture and Design (DAD) of the Politecnico di Torino, will analyse in-depth the topic of the Circular Economy regarding the production chains of building materials and construction sector waste (one of the primary material outputs within the Region). In the broader context of the project, the course and the workshop respond to the need to promote actions that increase and support the involvement, knowledge and awareness of the operators (potential producers and users) involved in the Circular Economy. In this sense, both the training experiences and in particular the course, do not only raise awareness on the subject in the group of users but also shape a class of designers that will be the future creators of products and services.

TIMING: MARCH–JUNE 2018.

ACTION 4 Review of Regional Strategies in View of the New Programming.

POLICY GAP

- ✓ Raising involvement and knowledge of operators concerning Circular Economy.

- ✓ Support collaboration between sectors.
- ✓ Policy in support to business and market development for Circular Economy activities.
- ✓ Tailored policy measures on Circular Economy.

DESCRIPTION OF THE ACTION

The objective will be to direct the revision of the Intelligent Specialisation Strategy of Piedmont and more generally the regional strategies and instruments for innovation and competitiveness, to explicitly include the promotion of the circularity of economic-productive processes and the reuse of resources. Moreover, this action will also promote the collection of further knowledge on CE processes and potentials at a regional level. As part of this Action, a strong synergy will be created with the Pilot Action on Industrial Transition initiative; Piedmont Region has indeed been selected among the 5 European Regions that will receive, in the course of 2018, a dedicated support from the European Commission to strengthen its strategies and policies to face the challenges of the industrial transition effectively.

The action will involve the interlocution with the main regional economic, research and social stakeholders, as well as with other sectors of the Administration which have competencies directly or indirectly linked to the promotion of the CE.

TIMING: 2018–2020.

ACTION 5 Definition of Improved Evaluation Systems for Regional Calls.

POLICY GAP

- ✓ Involvement and knowledge of operators concerning Circular Economy.
- ✓ Policy in support to business and market development for Circular Economy activities.

DESCRIPTION OF THE ACTION

This action aims at strengthening regional calls as levers to promote the circularity of economic cycles, by better targeting selection and evaluation systems.

This action runs in parallel with Action 4, thus the new evaluation systems are expected to be applied to new instruments and calls of the future programming period. Nevertheless, their application in the current period, where possible, is not excluded.

TIMING: 2018–2020.

Promoting Project Partners

LP – Politecnico di Torino



**POLITECNICO
DI TORINO**

Dipartimento di
Architettura e Design

PP2 – Regione Piemonte



**REGIONE
PIEMONTE**

II. BIZKAIA | SPAIN

Overview of the Circular Economy in the Basque Country

Circular Economy is acknowledged as a priority sector in the Basque Country's RIS3 (PCTI Euskadi 2020). This strategy sets up three priority sectors established capabilities in the Region (Energy, Life Sciences and Advanced Manufacturing), and three priority niche areas derived from the territory, in the fields of Ecosystems, Urban Planning and Regeneration, Leisure & Entertainment. Under the Environmental Ecosystems niche area, Eco-design, Eco-innovation, Green Jobs and Circular Economy are addressed.

The Regional Operational Programme (ROP) ERDF Basque Country 2014–2020 sets up numerous measures to support R&I and demonstration projects in the Circular Economy field, under Priority Axis.

1 (R&I), Axis 3 (SME competitiveness & entrepreneurship) and Axis 6 (Environment and resource efficiency). In this last one, the main programmes and measures supporting the Circular Economy are included and mainly managed by Ihobe, Basque Environmental Agency. Under this topic, Ihobe administers grants for eco-innovation and eco-design projects and Flagship and Demonstration Circular Economy projects.

In the framework of the overall Environment Policy of the Basque Region, tackling among others Biodiversity and Nature, Climate Change, Renewable Energy and Energy Efficiency, a Circular Economy initiative is considered, with the following goals:

- ✓ Foster eco-design as an instrument to reduce the consumption of resources and prevention in waste generation, by increasing the functionality (servitisation), durability and recyclability of products.
- ✓ Promote process and product eco-innovation to leverage the market opportunities that the environment generates in the global market.
- ✓ Support the incorporation of clean technologies and the available technological improvements.
- ✓ Set up economic instruments penalising dumping and the use of natural raw materials and incentivise re-use, recycling and recovery.
- ✓ Promote a greener building and construction sector.
- ✓ Promote entrepreneurship through new business models that encourage full circles and industrial ecosystems.

Regarding the current policy and the strategy planned for the coming years, there is still ample room for improvement in terms of adopting sector wise and Systemic Approaches.

- ✓ There is still ample room for the development of new products and services in the greening of the economy, so the further support of R&I efforts in this field is demanded.
- ✓ Adopting a Systemic Approach demands embracing new business models by companies, which also demands a broad awareness about raising and training efforts, as well as a business modelling support and the access to demonstration grants programmes in this field.
- ✓ Systemic Approaches also require the collaboration among different sectors, industries and companies, which demands: 1) access to mapping efforts of Circular Economy value chains

in priority sectors; 2) the creation of venues and spaces for different sectors and industries to meet, build trust and start collaborating on symbiotic efforts; 3) support to demonstration or pilot initiatives in this field through access to grant programmes or other broader and strategic initiatives.

- ✓ Multi-governance coordination and synergies by the different administration levels (local, provincial and regional governments). The Circular Economy is an emerging and key concept for all of them. Thus, it is necessary for them to take a firm and coordinated commitment through the provision of awareness raising programmes, grants for private companies and a strategic and regulatory framework.
- ✓ Regulation and revision of policies are encouraged to support responsible resource and waste management effectively. Among others, speeding up environmental administrative procedures, activation of green public procurement of secondary materials or strengthening inspection and control over unfair competitors. For instance, the role of waste managers in the Circular Economy might be reinforced.

Current Policy Instrument Addressed by RETRACE

Following the multi-governance levels existing in the Basque Country Region, one of the European regions with the highest decentralised powers, three different policy instruments are addressed:

- ✓ The Regional Operational Programme ERDF 2014–2020 Basque Country at a regional level.
- ✓ Bizkaia Goazen 2030 Strategy: the provincial development strategy of the Bizkaia province.
- ✓ Lea/Artibai Local Development Strategy: the local strategy of Lea/Artibai “comarca” or area, composed of twelve municipalities.

The three policy instruments tackle the Circular Economy (CE) explicitly as a priority for the territory, and provide several policies and programmes at the different governance levels:

Regional Level: ROP ERDF 2014–2020 Basque Country.

Circular Economy as a topic is addressed in three Priority Axes of the ROP managed by the Basque Government:

- ✓ Priority Axis 1: R&I support plans various measures and programmes, mainly grants supporting collaborative R&I, specifically regarding those sectors identified as a priority in the Basque Country’s RIS3. This has identified three priorities (Energy, Life Sciences and Advanced Manufacturing) and three niche specialisation areas. In the latter, under the Ecosystems niche, new Circular Economy models are considered.
- ✓ Priority Axis 3: SMEs competitiveness entails many entrepreneurship support services, especially in those sectors addressed by RIS3; additionally Environmental and Circular Economy new business models are explicitly mentioned.
- ✓ Priority Axis 6: Under this axis, Resource Efficiency and Circular Economy are expressly addressed, by providing programmes and grants aimed at the demonstration of new CE models and the development of eco-innovation and eco-design projects funded by Ithobe, the Environmental Agency of the Basque Government.

Provincial Level: Bizkaia Goazen 2030.

The strategy is managed by Biscay Provincial Council and partially funded by ROP ERDF 2014–2020 Basque Country. Under the strategy focused on Economic Development, a number of grants programmes for innovation and entrepreneurship support are considered, mainly managed by the provincial authority and by BEAZ, RETRACE partner.

Local Level: Lea-Artibai Local Development Strategy.

The Strategy has been identified by the territorial entrepreneurship and innovation ecosystem composed by RETRACE partner AZARO Fundazioa, Lea-Artibai Local Development Agency, Leartiker Technology Center and Lea-Artibai Vocational School. The Strategy has four Axes, one of them named Blue Lab Strategy, explicitly focusing on raising awareness and promoting the Blue Economy, Systemic Design and Circular Economy initiatives and projects.

Three policy gaps have been identified by taking into consideration the common Policy Gap Framework of RETRACE:

- ✓ COLLABORATION between sectors. Collaboration among companies from different sectors and public administrations at different multi-governance levels, and between public and private operators can be strengthened following bottom-up approaches.
- ✓ ENGAGEMENT AND KNOWLEDGE OF OPERATORS. Further information, knowledge and training about the paradigm and new models are required; new models might reinforce the role of waste managers.
- ✓ POLICY FOCUSED ON SMEs. Improvements are necessary at multi-governance levels providing actionable information about all available grants addressed to SMEs and a continuum to fund projects among different levels.

Policy Actions

The Regional Action Plan is composed of six actions which are a balanced mix regarding:

- ✓ Policy instruments and governance levels addressed at regional, provincial and local levels.
- ✓ Policy Gaps addressed. Three Policy Gaps: 1) Collaboration between sectors; 2) Engagement and Knowledge; 3) Policy focused on SMEs.
- ✓ Improvement areas targeted. A substantial impact on improved governance at the different territorial level of policies (Action 5), the emergence of new pilot projects and initiatives (Actions 4 and 6), the delivery of new strategic frameworks (Action 3), and business support services (Actions 1 and 2).
- ✓ Stakeholders involved. All of them entail public-private partnerships.
- ✓ Implementation time and funding. Some actions are already underway (Actions 1 and 3) and depend on the procurement of external funds (Action 4 and 6), while others will be implemented shortly with own funds (Action 2 and 5).

Nº	Actions	Policy Gap	Governance Level	Target Policy Instrument
1	Pilot Programme for the Diagnoses and Circular Economy Plans in SMEs	Policy on SMEs	Provincial/ Local	Bizkaia Orekan (Goazen 2030)
2	Mainstreaming awareness and training on the Circular Economy	Knowledge	Local	Blue Lab Strategy (Local Development Strategy of Lea-Artibai)
3	Circular Bilbao Bizkaia	Collaboration	Provincial	BEAZ Strategy Plan aligned with the Biscay Provincial Council's Department of Economic Development and Territory Strategy
4	Pilot Project for Food Sovereignty	Collaboration	Local	Blue Lab Strategy (Local Development Strategy of Lea-Artibai)
5	New territorial governance model for a Circular Economy	Policy on SMEs	Regional/ Provincial/ Local	ROP ERDF 2014–2020 Basque Country
6	Pilot Project for the valorisation of Urban Organic Waste for the production of eco-fertilisers and bioplastics	Collaboration	Local	Blue Lab Strategy (Local Development Strategy of Lea-Artibai)

ACTION 1 Pilot Programme for Diagnoses and Circular Economy Plans in SMEs.

POLICY GAP

- ✓ Policy focused on SMEs and micro-manufacturing.

DESCRIPTION OF THE ACTION

The Pilot Programme takes place in the framework of Bizkaia Orekan, a programme managed by BEAZ, following Bizkaia Goazen 2030 strategy, which focuses on supporting the competitiveness of SMEs all along the provincial territory of Bizkaia. To that end, the province has been divided into four geographical areas, each of which has identified priority areas based upon territorial challenges. The East Area, where Lea-Artibai is located, has identified as one of such priorities/challenges, the promotion of new business models around the Circular Economy paradigm as a means of increasing growth and jobs.

This priority is deployed into an Action Plan entailing:

- ✓ Training on the Circular Economy of BEAZ and local administrations staff of the area, including the AZARO Fundazioa.
- ✓ Raising awareness activities on the Circular Economy in mainstream business which support events held in the territory.
- ✓ Pilot Programme for the development of Diagnoses and Circular Economy Plans in SMEs. Under this scheme, following presentation workshop of the initiative where 55 SMEs from

the area took part, eight SMEs have been selected (three from Lea/Artibai) and will be the subject of a Circular Economy Diagnosis considering energy and materials flows. These will be carried out by an independent consultancy company, which will also develop a Circular Economy Plan with a proposal on how to address improvements in the company's process management.

This Action has been inspired by the Amsterdam Smart City and ACP Coop practices in The Netherlands.

TIMING:

- ✓ The Pilot Programme will be implemented between 2017 and 2018 with BEAZ funds.
- ✓ Selection of SMEs beneficiaries and the launch of the diagnoses took place in 2017. Diagnosis and Circular Economy Plans will be available by mid-2018.
- ✓ The Bizkaia Orekan Programme funded by Biscay Provincial Council will go on indefinitely. Therefore, the Pilot Programme might be re-edited in the following years.

ACTION 2 Mainstreaming Raising Awareness and Training on Circular Economy.

POLICY GAP

- ✓ Raising involvement and knowledge of operators concerning Circular Economy.

DESCRIPTION OF THE ACTION

The Blue Lab Strategy is one of the four priorities and specialisation areas of the Lea/Artibai Development Strategy. Under this area, the AZARO Fundazioa has developed in the last two years, since it started working in this field, an active awareness and support actions aimed at promoting exchanges among companies and economic agents of the area, knowledge about the Circular Economy and models. In this field, the Good Practices visited in RETRACE have been a significant source of information and inspiration.

Following the capitalisation of such Good Practices, the AZARO Fundazioa has been led to consider that raising awareness activities about the Circular Economy can only be limited to its impact. Thus, a further mainstreaming of Circularity in other services provided by the organisation is proposed.

- ✓ Training. Delivering a Circular Economy and a Creativity Training Module on a brand new training programme offered to unemployed women (EMEekin). Circularity will be integrated on an employment and entrepreneurship oriented training programme, whose training contents might be replicated.
- ✓ Entrepreneurship support services. Several actions are planned, such as the inclusion of Circular Economy business cases in the general entrepreneurship materials for raising awareness events; the use of the Eco-Canvas business model in the support of new business ideas; the creation of a new category in the annual Entrepreneurship & Innovation Awards created by AZARO Fundazioa, that will award with € 6,000 to the most Circular Business Idea.

TIMING

- ✓ The EMEekin Training Programme will run between 2017 and 2018 with the Biscay Provincial Council funds. It might be replicated in future years if funds are procured.

- ✓ The Entrepreneurship & Innovation Awards run every year with the AZARO Fundazioa funds. The New Circular Economy category will be included in the 2018 edition and subsequent years.

ACTION 3 Circular Bilbao Bizkaia.

POLICY GAP

- ✓ Support collaboration between sectors.

DESCRIPTION OF THE ACTION

In the framework of the BEAZ's Strategy Plan, this Circularity exercise has been put in place and coordinated among others, by Innobasque – Basque Innovation Agency, with the participation of the Biscay Provincial Council, BEAZ, the Bilbao Municipality and Bilbao City Development Agency (Bilbao Ekintza). Facilitated by the Dutch Circle Economy company, the definition of a Holistic Diagnosis regarding energy and materials flows of the Bilbao City – Biscay Province territory is proposed, the so-called Circle Scan, as well as several Pilot Projects resulting from identified flows.

The initiative is deployed into four phases:

1. Framework and context analysis. Analysis of policies, strategies and sectoral economic data.
2. Streamflow analysis of the economic sectors, water, urban waste, energy and shipping.
3. Roadmap. Definition of visions and strategies following identified flows.
4. Action Plan. Stakeholders engagement for the pilot implementation of three Projects.

Following the scan, three sectors have been selected upon which to implement pilot projects:

- ✓ Food and hospitality. New initiatives in restaurants to avoid food loss.
- ✓ Retail. New waste separation systems in big retailers and new shipping schemes.
- ✓ Advanced Manufacturing. Support to new Additive Manufacturing shared capabilities and demonstration of new circular metal manufactured prototypes.

This action has been inspired by the Circle Scan Amsterdam practice, in The Netherlands, also conducted by the Circle Economy company.

TIMING: Phases 1 to 3 have been implemented in 2017. Phase 4, focusing on Pilot Projects, will run between 2018 and 2019.

ACTION 4 Pilot Project on Food Sovereignty.

POLICY GAP

- ✓ Support collaboration between sectors.

DESCRIPTION OF THE ACTION:

This Pilot Project falls under the Blue Strategy initiative led by the AZARO Fundazioa. It is aimed at building new food short supply chains in the Lea-Artibai area, based on new links between the offer and demand side of local food. It responds to the needs to be more efficient in the consumption of local food, considering the positive impact on the local economy, jobs, energy (lesser shipping costs) and food loss. The project is built upon the explicit demand of

territorial municipalities which want to make stronger investments in the primary economic sector and the success of the Basque Government backed up programme in public schools for the consumption of local and organic food supplies.

The project is promoted by the Lea-Artibai Development Agency and the Lea-Artibai Rural Development Agency, with other partners from the Durangoaldea area, and has three phases:

1. Diagnosis of local food supply and demand.
2. Raising awareness about the map of supply and demand.
3. Short supply chain pilot programme focusing on restaurants and markets.

This action is inspired by several programmes and initiatives in the Food & Drink field managed by Zero Waste Scotland and Scottish Enterprise, in Scotland, UK.

TIMING: The project will be implemented in 2018 if it is selected by the Cooperation Call within the Basque Rural Development Programme 2014–2020 to which it has been submitted.

ACTION 5 A New Territorial Governance Model for the Circular Economy.

POLICY GAP

- ✓ Policy focused on SMEs and micro-manufacturing.

DESCRIPTION OF THE ACTION

This action is aimed at improving the overall performance of the Circular Economy strategy of the Basque Country, backed up by ROP ERDF 2014–2020 and embodied by the Ihobe, Basque Environment Agency. It looks for improving the access of both SMEs from all the territory to the programmes and grants by Ihobe through better coordination of the different authorities and bodies supporting the Circular Economy in the territory; Ihobe, at a regional level, BEAZ at a provincial level and AZARO Fundazioa at Lea-Artibai level. To that end, the creation of a workgroup composed of representatives from the three bodies is suggested to better coordinate information and joint activities aiming at delivering better and more coordinated information to SMEs from all the territories about the scope and conditions of the programmes. Moreover, it provides grants offered by each body and allows to ask for subsequent aids at the different levels.

This action is inspired by Zero Waste Scotland, the public agency focusing, among others, in Circular Economy in Scotland, also funded by the regional ERDF and proposing multi-governance level initiatives, such as the Glasgow City Scan.

TIMING: Project will be implemented in 2018 and 2019, through annual meetings of the proposed workgroup.

ACTION 6 Pilot Project on the Valorisation of Urban Organic Waste for the Production of Eco-Fertilisers and Bioplastics.

POLICY GAP

- ✓ Support collaboration between sectors.

DESCRIPTION OF THE ACTION

This Pilot Project falls under the Blue Strategy initiative led by the AZARO Fundazioa. It aims at a better valorisation of the urban organic waste managed by the Lea-Artibai Waste Management Body (Mancomunidad de Lea-Artibai).

To that end, a demonstration project is proposed, led by Neiker, a Basque technology centre in collaboration with the Lea-Artibai Development Agency and Lea-Artibai Mancomunidad, as well as other technology centres in France and two Basque SMEs.

In the project, the technology will be tested by Neiker in a real-life setting and escalated into two pilot plants that will turn the urban organic waste of Lea-Artibai into granular compost that will be eventually transformed into high-value eco-fertilisers and biodegradable plastics. The two participating SMEs are experts in the production of eco-fertilisers and biodegradable plastics.

This action is inspired by Hungrybin in Rotterdam, the Netherlands. In this case, the organic waste is used for feeding worms, which have a high protein value, and producing fertiliser.

TIMING: The project will be implemented between 2018 and 2020 if it is selected in the LIFE + Programme Call to which it was submitted in September 2017.

Promoting Project Partners

PP3 – AZARO Fundazioa



PP4 – BEAZ



III. NOUVELLE AQUITAINE REGION | FRANCE

Overview of the Circular Economy in the Basque Country

The territorial reform implemented in France with the NOTRE law (law bearing the New Territorial Organisation of the Republic) is translated by transferring competence towards the Region for the planning of the waste and reinforcing its engagement in the development of the Circular Economy. This new role is part of an overall approach to the ecological and energy transition of the territory while challenging to reduce, manage, recycle waste, and promote the reuse of resources.

Beyond the skills common to all regions, Aquitaine also has a favourable ground for stimulating a policy in favour of the Circular Economy. Particularly mobilised regarding innovation, Aquitaine is the French Region that spends the most (about 10% of its budget) on research and innovation. Over the period 2000–2011, patent applications increased by 75% (compared to an average 30% of the other French Regions).

Aquitaine has five labeled competitiveness clusters and twenty clusters in the Aquitaine Développement Innovation network. Among them are the Aquitaine Green Growth Club and the Aquitaine Chimie Durable association, which are mainly involved in the Circular Economy. Aquitaine has world-renowned sectors of excellence, such as aeronautics and space (the Aquitaine-Mid-Pyrenees employment basin is the largest sector in Europe), agribusiness (world leader in the wine sector, the second largest agricultural region in France), forest-wood (Europe's largest forested massif), the laser technology.

These channels have started integrating the Circular Economy in different ways. In particular, they can rely on the APESA (the technological centre for environment and risk management) in the field of anaerobic digestion and ecodesign and on DREAL Aquitaine or ADEME (French Agency for the Energy & Environment). The Aquitaine Region has been developing actions for the preservation of the environment for several years. Many documents and tools have been put in place in various fields (climate, energy, biodiversity, waste management).

However, Aquitaine still suffers from fragilities, even delays, which require a full and rapid commitment to the Circular Economy. In fact, the region produces more waste than the national average and is experiencing an increase in energy consumption per capita. Aquitaine is the first French region regarding temperature increase, with 1.1°C gained in a century. The French Institute on statistics predicted in a 2009 study that Aquitaine will be one of the five regions with the highest population growth rate between 2007 and 2040, an attractiveness that implies an increase in the consumption of energy, water and raw materials. In this context, faced with supply difficulties and rising costs, several stakeholders in Aquitaine have already started to develop eco-design, pooling and recycling initiatives.

Regarding strengths and weakness while taking into account the particular situation of France (the French territorial reform adopted in 2015 reduces the administrative regions from 22 to 13), the new Aquitaine region has chosen to focus on four main topics:

Waste

The Regional Plan for Waste Prevention and Management (PRPGD) will set priorities regarding the prevention and reduction of waste. This plan will be established in collaboration with the citizens, the local authorities and the various stakeholders (consular, EPCI, professional organisations, etc.). This topic includes household and similar waste, hazardous waste, construction and public works waste.

Develop new sectors and new economic logic

Because of their expertise in economic development, the Regions are at the forefront of the development of the Circular Economy. The resulting actions increasingly engage territorial response, as the implementation of a Circular Economy policy is a crucial factor in developing activities, employment and innovation.

In this perspective, the RECITA network was launched in the New Aquitaine region in April 2016. It is open to all socio-economic actors in the territory (businesses, communities, researchers, networks, civil society), with the following objectives:

- ✓ to bring together committed actors for the development of the Circular Economy in the territories;
- ✓ to enhance regional experiences and assets;
- ✓ to share a common culture concerning the Circular Economy;
- ✓ to contribute to the development of collaborative projects;
- ✓ communicating through the media, the initiatives, diffusing spaces of exchanges, tools.

Act as a lever for economic development

The development of new sectors and the support of an emerging industry are crucial elements of Circular Economy dynamics and consistent with the economic development strategy of the territory. Moreover, enterprises gain competitiveness thanks to the Circular Economy, as they can control the flow of raw materials and be more efficient at all stages of the product lifecycle.

From this point of view, agriculture and agri-food, which are major economic sectors of this Region, are essential priority sectors.

Fight against food waste of regional institutions

In an exemplary approach, the Region is committed to fighting against food waste, particularly in high schools (296 schools in New Aquitaine, with more than 200,000 high school students). Several experiments have been implemented in the regional territories to fight against food waste and contribute to the recovery of waste such as awareness programmes for high school students, sorting operations, installing composters or methanisers.

The outcomes of the Holistic Diagnosis in Nouvelle Aquitaine, associated with the Region's strategy, lead us to work on three sectors:

1. AGRICULTURE

Nouvelle Aquitaine is considered the first agricultural Region of both France and Europe with a total utilised surface of 3.9 millions of hectares. Thus, all industry generated by agriculture farming and agro-industry constitute the first economy in Nouvelle Aquitaine. Agriculture has evolved over the last fifty years due to a concentration of landowners, who have specialised in specific products. This evolution has had several consequences in the input and output flows of each sector. On the one hand, the specialisation has erased the synergies between different activities of former farmers, hence, the establishment of new businesses, which generally need more inputs often imported from other Regions. On the other hand, the output of these new types of activities which can rarely be completely valorised within the economic scope of the farm is mostly considered as waste with consequent costs for the cultivator.

Several sectors have been developed to attempt to valorise these outputs such as incineration, composting or methanisation which have been tested to generate new value and enhance the circularity of the activities.

This section focuses on methanisation as a strategic sub-sector in Aquitaine for the whole agricultural approach. The current situation reveals that almost all functioning sites have to deal with unforeseen hazards which eventually turn into lower expected profits.

This gap between initial forecasts recorded in business plans and income and actual costs of sites reveal several specificities and fragilities of the sector:

- ✓ Its significant diversity, which is at the same time the result of the process of methanisation from waste wished by public authorities but also of the variety of the project leaders. A technological reference table and costs of maladjusted person: the German model of methanisation hardly suits most French cases.
- ✓ A low maturity of the actors of the sector (as well as side project leaders who receive benefits) which is translated into non-standardised practices and an absence of quality standards.

Besides, methanisation is a process that not only closes the loops of organic materials but also has a positive outcome from an energy point of view. Indeed, the biogas issued from this process can be valorised into different processes including: mobility, cogeneration or thermal utilisations. Moreover, this gas is also a key vector within the smart grids that are being developed in Europe.

Eventually, the French government has recently announced new policies that will be applied into different governance scopes, including Regions. These policies include a target of ten thousand methanisation units by 2050 (there are currently 600 in France).

2. WOOD

The wood sector is particularly strong at the national level. The forest management practices favour the provisioning of forest goods and services (e.g., timber, firewood). For several decades, deciduous forests in France, providing products with low-added value, have been replaced by coniferous species in some regions like in Nouvelle Aquitaine.

As a consequence, with more than 2.8 million hectares, Nouvelle Aquitaine is the region

with the largest forest area in France. One-third of its territory is covered with forest, which ranks fourth among the Regions for afforestation rate. Therefore, the wood industry is a major economic sector. In 2013, the volume of samples taken in the forests of Nouvelle Aquitaine amounted to 9.7 million m³ (round wood on bark), or more than a quarter of the timber harvest in France. In 2012, companies in the forest-wood sector (excluding businesses and services), of which at least 80% of employees work in the Nouvelle Aquitaine territory, posted revenues of € 9.7 billion or 11% of the national potential regarding this sector. Moreover, the region Nouvelle Aquitaine benefits from a strong R&D activity (through the development of the Xylofutur pole of excellence) and a strong network (SMEs, university, etc.)

Moreover, current strong European and French policies are related to the wood sector. As an example, France's renewable energy production targets in 2020 are based on 46% of wood energy (wood, logs, wood chips, related sawmill products, end-of-life wood products, pellets). Besides, recent policies enforce the structuration design of the end-of-life of furniture products with dedicated structure (for ex. Valdelia) to support the recycling and valorisation of wood.

Therefore, this new context challenges the wood value chain and requires the development of new practices to reach the different targets (valorisation, renewable energy, etc.)

3. TEXTILE

The textile sector has not been selected as a priority sector in the New Aquitaine strategy. Nevertheless, according to the Holistic Diagnosis, local waste management authorities have a real problem with this topic. Moreover, we consider that the main challenge is to work on the specificity of textile waste and develop a real local policy on this topic.

In Nouvelle Aquitaine, the sector is represented by diverse sub-industries in departments and a high consumption level. We count:

- ✓ A strong leather industry in Dordogne;
- ✓ An industry of surf, sweat wear & down-based-products in Pyrénées Atlantique and Landes;
- ✓ Poitou-Charentes develops luxury goods underlined by the Pole Grand-Ouest composed of different brands;
- ✓ The activity of textile and clothing revalorisation has been strongly established in the local social economy for twenty years. Emergent models & practices were recently engaged to accelerate the quality and quantity treated in Nouvelle Aquitaine.
- ✓ Research in advanced materials is a priority for Nouvelle Aquitaine. Different types of them could be addressed for the textile & clothing industry (bioplastics, waste...). Natural fibres like hemp or linen are also cultivated to relocate the industry. A cluster "demain" (domain) is in charge of the valorisation of hemp in the territory.

Current Policy Instrument Addressed by RETRACE

The operational program for France is PO FEDER FSE Aquitaine 2014–2020.

The OP showcases two Priority Axes (PAs), relevant to RETRACE:

- ✓ PA1 (R&I): aims at supporting the eleven priority sectors of RIS3, five of them with close links and a relevant potential to industrial symbiosis approaches and Systemic Approaches from a Circular Economy perspective.

This includes specific support for collaborative projects and initiatives for the adoption of such approaches, as well as the creation and growth of start-ups in these fields, through grants and financial instruments.

- ✓ PA₃ (Education, Training and Employment). There is a specific objective aiming at the increase of employment in the Social Economy field, where the Circular Economy and eco-conception fields are acknowledged as an employment source for the region which must be supported.

The identified gaps that RETRACE aims to tackle are in line with the sectors we defined in the HD and we found the following gaps:

- ✓ The coherence of local governance for Circular Economy development.
Consistency between stakeholders and scales (regional, local and transversal) needs to be clarified, including the role and means of support structures. Link the actions of the regional waste plan and the Circular Economy with local governance as “The label “Zéro déchet, Zéro Gaspillage” In the Basque Country, a project of local self-shared governance is envisaged to create and promote the support to the local fabric.
- ✓ Reinforcing supports for social entrepreneurship initiatives based on local resources.
Circular Economy and social entrepreneurship are strongly connected. Although a set of measures exist to fund the development of SSE projects and that a social innovation AMI is opened every year, there are still many obstacles to undertake and in particular to finance projects in the upstream phase. Repair workshops or recycling and citizen cooperatives are models that promote the Circular Economy.
- ✓ Raising involvement and knowledge of operators.
Involving and training locally is essential to ensure the development of Circular Economy projects. New applications can emerge thanks to the mobilisation and involvement of various actors (citizens, students, cultural centres, entrepreneurs, public actors, etc.). The organisation of repair or knowledge sharing workshops, participative and self-learning contributes to the integration of people in difficulty, the transmission of knowledge and the improvement of citizen engagement.
- ✓ Supporting circular fashion and textile development.
Improving local sorting from diverse collecting points, facilitating social entrepreneurship for dressing management and upcycling centres. Creation of local supply-chains for wool, hemp, linen and recycled fibres.

Policy Actions

ACTION 1 Strengthen Support for Social Entrepreneurship Projects that Seek to Leverage Local Resources, Reuse and Repair.

POLICY GAP

- ✓ Support collaboration between sectors.

DESCRIPTION OF THE ACTION

The action presented here aims to strengthen the links between social innovation and the Circular Economy by encouraging the development of strong skills and appropriate infrastructure for reuse/repair.

TIMING

- ✓ Second semester 2018: Setting up collaborative workshops around product repair.
- ✓ Second semester 2018: RECITA event (ESS and EC).
- ✓ Second semester 2018: Establishment of a roadmap for the development of a repair network/ research centre.
- ✓ 2019: Development of recommendations for the various actors involved in the repair.

ACTION 2 Support the Development of New Sectors Around Textile Recovery and Responsible Fashion.

POLICY GAP

- ✓ Tailored policy measures on Circular Economy.

DESCRIPTION OF THE ACTION

A new impetus is currently developing in the world of textiles and fashion towards more sustainability and circularity in the modes of production and consumption.

There is a strong presence in the New Aachen Region of the re-use and SSE structures, which for more than twenty years have sought to collect, sort and facilitate the reuse of used textiles. Several clusters of activities around the sector are also present on the territory, such as the Leather cluster in the Dordogne, and the newly created textile solidarity group, the Eurosima, for surfing and snowboarding, and the Pole Grand-Ouest dedicated to luxury products.

The textile waste and the Circular Economy roadmap in New Aquitaine should be defined in the spring of 2018. The objective of this roadmap will be to identify priorities that will take place during two, three years to be proposed for the Regional Prevention Plan and Waste Management.

TIMING: 28 March 2018 Roadmap definition meeting in Bordeaux.

ACTION 3 Initiate a Biogas Project Adapted to Small Farms (for example in the French Inner Basque Country).

POLICY GAP

- ✓ Policy focused on SMEs and micro-manufacturing.

DESCRIPTION OF THE ACTION

Systemic Design opens the discussion on the size of the optimal infrastructure of industrial and agricultural activities which are needed to “close loops” and keep a human proportion adapted to the specificities of the territory concerned. For example, in agriculture and methanisation, the inadequacy of the equipment can lead to material failures on the anaerobic digestion process that results in losses of income and additional investments to be made to adapt the design of the anaerobic digestion unit.

Initial discussions took place during workshops held in the territory within the RETRACE project in January 2017 and 2018. A more formal meeting is scheduled for spring 2018 to define a specific roadmap.

TIMING: Roadmap definition meeting in April 2018 in Bayonne.

ACTION 4 Develop Local Skills Necessary to Ensure the Transition to the Circular Economy and More Specifically, the (Re) Creation of Sectors Based on Natural Materials.

POLICY GAP

✓ Raising involvement and knowledge of operators concerning Circular Economy.

DESCRIPTION OF THE ACTION

In New Aquitaine, there is a strong potential based on the importance of agricultural land and the agricultural sector in the territory. Several projects have been identified to re-build the industries based on natural materials such as Adour flax, Atlantic hemp, duck down, Pottias poo, oyster shells, sheep's wool, etc. Most of these projects are still in the early stages of development and are looking for support to advance their exploration and implementation.

During the period 2018–2020, first accompaniments for project leaders as well as students and entrepreneurs will be created. The format of the collective action will be defined during the exchanges between the structures involved according to the resources available for the project.

TIMING:

2018–2019: Research for funding and opportunities to create training and multi-stakeholder collective actions; support of the ongoing projects.

2019–2020: Initiation of the collective action and training design; analysis of synergy identification.

Promoting Project Partners

PP5 – Higher School of Advanced Industrial Technology / ESTIA



PP6 – Association for Environment and Safety in Aquitaine / APESA



IV. SLOVENIA

Overview of Circular Economy in Slovenia

The overall context for the transition to a Circular Economy in Slovenia has recently been set at the systemic level when the Government adopted Slovenian Development Strategy 2030. This document presents a new long-term national development framework and its primary objective is titled “Slovenia, a country with a high quality of life for all.” With twelve interconnected development goals, among which is also Low-carbon Circular Economy, it sets a new foundation for the future development of Slovenia. The document recognises that such transition will not be possible without fundamental changes in consumption and production patterns, improved utilisation of resources which are already integrated into systems preventing the generation of waste, using waste as a source of secondary raw materials and establishing an effective waste management system. Since the Slovenian economy depends on imports of raw materials, the implementation of measures for a transition to a Circular Economy is essential. This document will provide an overall framework to connect better and intertwine existing numerous initiatives and projects that are striving to support the transition to a Circular Economy.

The Holistic Diagnosis, which was prepared by using the principles of the Systemic Design, identified a potential (natural assets, infrastructure, economy, social capital, R&D) that could be further activated in a systematic way towards the Circular Economy. One of the vehicles for this is, as recognised in the Smart Specialisation Strategy of Slovenia (S4), also the Circular Economy. This is one of the three primary pillars where altogether nine areas are identified in Slovenia where there is potential for further specialisation. Each of the nine areas of application witnessed the establishment of one Strategic Research and Innovation Partnership; among them is also SRIP – Networks for transition into Circular Economy. Within this cluster, the focus will be given to sustainable energy, biomass and alternative raw materials, secondary raw materials, functional materials, processes and circular business models.

Current Policy Instrument Addressed by RETRACE

The policy instrument that was addressed by the RETRACE project is the Operational Programme for the Implementation of the European Cohesion Policy 2014–2020¹ (ROP), which is a national document combining all European Investment and Structural Funds (ERDF, ESS, CF). The paper covers two Cohesion Regions. The total budget is approximately €3 billion of the EU funds which are allocated to eleven priority axes. Among the most relevant axes which promote the transition to the CE are:

- ✓ PA 1 International competitiveness of research, innovation and technological development in line with smart specialisation for enhanced competitiveness and the greening of the economy;
- ✓ PA 3 Dynamic and competitive entrepreneurship for green economic growth.

The main reason for which the document was selected is that any potential change could have relatively high leverage effects.

Regarding the Circular Economy, the document includes all the essential elements that allow for preparing relevant instruments to facilitate the transition to the Circular Economy under the PA 3 as well as under the S4.

At this stage, it would be quite challenging to envisage any substantial change of the ROP. Improvements could, therefore, be mainly sought out of the implementation level of new projects or call for proposals. For this to happen requires strong cooperation among various actors and stakeholders who are involved in shaping the content aspect of the implementing process.

At this stage, the objective should be the mainstreaming of the criteria leading to more efficient resources and circular endeavours could be supported systematically. Since the next programming period for EU funds is approaching quite quickly, the conclusions from the RETRACE project could be another vehicle that will provide an essential input for the next programming period.

Policy Actions

The proposed actions are trying to remove some of the obstacles identified in the project implementation process and are based on the following central guiding principle: cooperation and dialogue among stakeholders. A Silo mentality persists among various stakeholders groups preventing faster transition to the CE.

This main guiding principle will provide a framework for the two additional, more specific, guiding principles:

- ✓ Systemic change. This principle will reflect itself in improved long-term conditions (mainly regarding the legal framework and improved knowledge and capacity among the stakeholders).
- ✓ Generating the “quick wins” which will manifest itself in a potentially enhanced call for proposals.

ACTION 1 Better Alignment of the Legal Framework in the Areas Related to Waste and By-Products.

POLICY GAP

- ✓ Policy regulations on the Circular Economy.

DESCRIPTION OF THE ACTION

The main aim of this action is to bring together various stakeholders that sometimes do not find appropriate ways to establish a dialogue which would improve the understanding among them, improve the trust and support the removal of legal barriers preventing faster CE transition. The elements of this action aim at form a dialogue platform which will provide a space for the:

- ✓ Representatives of the business community and other stakeholders to prepare a list of possible secondary raw materials that could be valorised or create closed loops.
- ✓ Meetings to be planned to debate which of the materials from the list could be used in further productive processes, what are the obstacles to prevent this from happening and how could these obstacles be removed. The relevant regulations will be identified and in the multi-stake-

holder process, the changes will be proposed. This will be linked to the transposition of the new EU waste management package into the Slovenian legal framework.

TIMING: 1st April 2018; continuous action.

ACTION 2 Establishment of Appropriate Price Signals for the Transition to the Circular Economy.

POLICY GAP

- ✓ Policy in support of business and market development for Circular Economy activities.

DESCRIPTION OF THE ACTION

The action aims at stirring the debate on what could be the appropriate financial incentives to stimulate strengthening secondary raw materials. Besides, it attempts to both improve the predictability for the companies and help them to reduce the overall amount of waste. The main elements of this action consist of presenting a solution that has been developed in Scotland (the escalating landfilling tax). This action also aims at preparing the analysis of the current system and trying to find the appropriate solutions to improve it. Other interesting cases of price signals aiming at reducing the overall amounts of waste and increasing the use of secondary raw materials will be presented. Extended producers responsibility will be considered.

TIMING: 1st April 2018; continuous action.

ACTION 3 Strengthening the Support Environment and Designing the Measure for the Enterprises in the Field of the Circular Economy.

POLICY GAPS

- ✓ Policy focused on SMEs and micro-manufacturing.
- ✓ Tailored policy measures on Circular Economy.

DESCRIPTION OF THE ACTION

This action aims at improving the support environment to enable a smoother transition of companies towards the circular business model. This action consists of two main measures. The first one is concerned with improving the knowledge within the support environment through preparing the educational package and connecting various actors in supporting environment within the design community. Together with the Centre for Creativity, it is aimed at improving the knowledge of the design experts in the areas facilitating the transition to a Circular Economy. The other measure consists of the activities that will create more targeted financial support for the companies that intend to work towards the Circular Economy business models. Main elements here will be addressing the development of appropriate selection criteria and their mainstreaming. Also, an important task will also be to improve the cooperation among the stakeholders who are involved in preparing and approving operations that are supported via ROP.

TIMING: 2018–2020 and later; continuous action.

ACTION 4 Low Level of Knowledge and Understanding of the Circular Economy Principles and Sustainable Development in Central Government institutions

POLICY GAP

- ✓ Raising involvement and knowledge of operators concerning the CE.

DESCRIPTION OF THE ACTION

The primary aim of this action is to enhance the level of knowledge and expertise in the central administration when it comes to Circular Economy. There are two main elements/approaches how this will be carried out. One line of implementing this action is related to the membership of Slovenia in the initiative of Ellen MacArthur Foundation which provides for its members also an educational programme. Additionally, this action predicts the development of a short educational module, together with the Administration Academy. The main target group for this programme will be the managers in various central government units.

TIMING: The second half of 2018; continuous action.

Promoting Project Partners

PP7 – Government Office for Development and European Cohesion Policy



REPUBLIC OF SLOVENIA
**GOVERNMENT OFFICE FOR DEVELOPMENT
AND EUROPEAN COHESION POLICY**

¹ Available <http://www.eu-skladi.si/en/key-documents>. Accessed 23/01/2018.

V. NORTH-EAST REGION | ROMANIA

Overview of the Circular Economy in Romania

The Circular Economy concept has been explicitly addressed at the end of 2017 in the Waste Management National Plan, which aligns the principles and targets set by the Circular Economy Package issued by the European Commission, two years earlier.

The North-East RIS3 sets the priority sectors with potential for specialisation in the North-East Region and also identifies a series of value chains treated as economic sub-sectors, for which assessment action will be performed to design them in a closed loop. The main aim of developing value chains is to obtain enhanced economic growth with minimum (or optimised) material and social costs, or a maximum efficiency with a minimum impact on the environment. The value chains identified within the RIS3 priority areas are:

- ✓ agrofood (with high regional diversity);
- ✓ waste;
- ✓ water;
- ✓ new materials;
- ✓ sustainable energy;
- ✓ health, demographic changes, and a healthy lifestyle.

The document also addresses the short value chains that would enable the implementation of Systemic Design principles for a Circular Economy at a regional level. To this end, the North-East RIS3 also indicates that the implementation method for value chain projects requires the establishment of a specific area (living lab), where the RI actors can test the solutions developed in laboratories or business incubators.

The Holistic Diagnosis performed within the framework of the RETRACE project was focused on sub-sectors of the economic sectors with potential for specialisation identified within the Smart Specialisation Strategy North-East (RIS3) and elaborated by the North-East Regional Development Agency. The RIS3 envisages industries that are well anchored into the regional economic system and ensure critical mass along the value chains. The analysis identified the importance of these sectors starting from the traditional industrial concentrations at a regional level.

Thus, sectors such as textiles and clothing, agri-food, wood processing, furniture and ICT, emerged firstly. Further analysis concentrated on new areas such as biotechnologies, and on critical sectors such as tourism. These two sectors are limited against the new approach: biotechnologies do not aggregate enough critical mass, fragmentation is well-marked, and tourism lacks technology innovation since they are sectors that do not generate technologies and instead make use of them.

Following sectoral studies, in response to the need to develop priority sectors, the first step reconfirmed their importance for the development of the North-East Region. The diagnosis revealed the strengths and weaknesses for the implementation of the Circular Economy and the Systemic Design within our Region in the following sub-sectors:

- ✓ Forestry and Wood processing industry.
- ✓ Textiles and Clothing.
- ✓ Chemical and Pharmaceutical industry (exponent of Biotechnologies KET).

For these sectors, in the context of RETRACE and the implementation of the policy instrument represented by the PA2 of the ROP 2014–2020, we can conclude that there is good availability of valuable resources: natural, human, knowledge, legal (regulatory), however, they are neither sustainable nor systemically valorised or correlated. The potential improvement lays in several actions that should produce excellent immediate results:

- ✓ the emergence of the Circular Economy specific funding, as a primary driver for implementing CE initiatives;
- ✓ the awareness and the knowledge consolidation among the regional stakeholders, as main drivers for behavioural change and barriers removal;
- ✓ innovation support through further analysis of the regional potential for CE and SD while highlighting the innovation and economic opportunities.

The latter two directions should play a significant role in fostering collaboration at a regional level, aiming at better configuring and exemplifying the Systemic Design Approach.

Further measures should be identified by addressing major societal challenges which characterise the European and global scene, and that do not by-pass the North-East Region of Romania.

Current Policy Instrument Addressed by RETRACE

The instrument addressed through the implementation of the RETRACE project is the Regional Operational Programme 2014–2020 (ROP) — Priority Axis 2 (PA2): Improving the competitiveness of SMEs.

The addressed policy instrument tackles TO3 and mainly envisages the SMEs that develop innovative activities (according to the Oslo Manual). The ROP will support the initiatives of innovative companies, except the research dedicated companies, that will benefit from support through other programmes.

The instrument provides support for SMEs acting within the competitive sectors that have been identified at a national level (in National Strategy for Research): tourism and eco-tourism, textiles and leather industries, wood and furniture industries, creative industries, ICT, health and pharmaceuticals, energy and environmental management, biopharmaceuticals and biotechnologies, as well as sectors identified at a regional level in RDP and RIS3. For the North-East Region, the instrument also supports agrofood, biotechnologies, textiles and new materials, tourism, ICT and the environment.

The instrument foresees in the evaluation grid a criterion for reducing waste at the source. Though a specific reference to the CE is not mentioned, introducing the related innovation criterion allows companies willing to introduce the CE in their business model to submit similar proposals.

The CE is not encouraged explicitly in this instrument and, in the absence of a solid awareness regarding the opportunity represented by this approach, we expected to have few initiatives envisaging the Circular Economy model. In fact, following the allocation of all available funding under this instrument, only after reviewing the results of the first call (for micro-enterprises), there are three contracts signed for CE-related projects.

We need to improve this instrument to offer better support to locally established companies that act within a sustainable development framework, and also better reference to the CE and efficient use of resources.

Next steps include to systematically investigate the possible connections and complementarities between different sectors and value chains within the North-East Region, to identify potential operational synergies among them and then set up a reference framework for a more efficient use of the EU and regional funds.

There is a need to find synergies correlated to the potentially leading growing/driver sectors, markets, value chains, natural resources and relevant societal actors. Some first steps have been made within the RETRACE project. However, a more in-depth analysis, engaging knowledge and industry actors must be undertaken for each sector.

To take SD one step closer to implementation, there is a need to identify the most promising cross-sectoral regional value chains synergies that could boost the application of the CE business model.

Policy Actions

The three actions proposed by the North-East Regional Development Agency through the Regional Action Plan aim to tackle the barriers that can be overcome through specific and rapid actions which demonstrate the potential of the CE and the SD for local and regional economies.

Throughout the RETRACE Experience Exchange Programme, the stakeholders were explicitly interested in the “HOW” aspect of Good Practices. In that perspective, we consider that, as a project partner, we should focus on ensuring leadership to reveal the mechanisms behind the best practices through customised actions.

Following are some specific vulnerabilities identified during the Holistic Diagnosis, that proved to be policy gaps as well, supported by the strengths of the region led to the actions to improve the framework conditions, on three levels:

- ✓ Funding policy level. Ensuring access to funding for stimulating SD and CE investment projects under ERDF;
- ✓ Facilitation of waste reduction (environment policy). Knowledge about secondary raw material standardisation for reuse;
- ✓ The exemplary role of local communities (local policies for social wellbeing). Examples of planning sustainable local development and raising awareness.

These actions are meant to prepare the “4Rs” framework for adapting the CE and the SD, facilitate the funding of Circular Economy projects and investments and showcase the exemplary role that can be assumed by local authorities for the wellbeing of their citizens and economies.

ACTION 1 Improving Specific Funding Schemes for Fostering Circular Economy and the Systemic Design Approach.

POLICY GAPS:

- ✓ Support collaboration between sectors.
- ✓ Tailored policy measures on CE.

DESCRIPTION OF THE ACTION

This action aims to promote the inclusion of the second NACE code among the eligible

criteria for investment projects, under the calls for proposals launched for the PA2 of the ROP 2014–2020, a condition that is now not supported under this PA. The North-East RDA has the contractual liability to provide improvement suggestions to the MA, upon its request. The introduction of a second NACE code in the same proposal will enable applicants to reduce their waste by introducing it to new economic/productive activities.

The ROP 2014–2020 PA 1 creates the framework for ensuring a TT between research organisations and companies to collaborate and to exploit the potential of scientific research results. Our action will focus on encouraging the collaboration for cascade use, reuse, and recycling of materials. A condition to influence this approach is to have the possibility to apply for funding for two NACE codes activities. At this moment, the MA agreed to include this provision in the PA 1 (North-East RDA proposal); concerning the PA 2, this is, however, not an option at this moment.

TIMING: 2018–2019, upon the launch of a new call for proposals under PA2 of ROP 2014–2020.

ACTION 2 Improving the Environment Public Authorities Knowledge on Secondary Raw Materials.

POLICY GAPS

- ✓ Support collaboration between sectors.
- ✓ Raising involvement and knowledge of the operators concerning the CE.
- ✓ Policy regulations on the CE.

DESCRIPTION OF THE ACTION

The problem related to the quality standards of secondary raw materials is a general issue at the European level and is present in Romania as well. There are producers whose output are refused as input by potential partners due to the taxonomy of their waste with no certificate which guarantees quality. For example, large quantities of textile waste cannot be standardised because of their different quality, colour, and composition. However, this is also the case of construction waste materials that can be used for road construction. Nevertheless, in the absence of quality standards referring to composition and radiation level measurement, this waste stream remains unused and shipped to landfills.

This action will attempt to improve the knowledge of the Environment Protection Agencies in six counties of the North-East Region to potentially elaborate quality standards and provisions for secondary raw materials.

TIMING: 2018–2019 depending on the available funds.

ACTION 3 Pilot Actions to Implement Systemic Design for a Circular Economy at the Local Level.

POLICY GAPS

- ✓ Support collaboration between sectors.
- ✓ Policy regulations on the CE.
- ✓ Policy in support of business and market development for CE activities.

DESCRIPTION OF THE ACTION

This action aims at supporting an association of seven municipalities to plan the local economic development of their territory based on the principles of the SD and the CE. This action aims at valorising the resources of the territory and further identifying the existing synergies in the local economic context, expressed through the elaboration of a strategic document (territorial development strategy).

TIMING: 2018–2019.

Promoting Project Partners

PP8 – North-East Regional Development Agency



Agencia pentru Dezvoltare Regională

N O R D - E S T

6. Guidelines for Policymakers and Policy Managers

MARJANA DERMEJ

Circular Economy is by definition a complicated concept. A Systemic Approach should, therefore, be applied to identify problems and challenges and to design appropriate solutions which would address the system's complexity. The chapter scales the outcomes emerged from RETRACE to the European level, providing guidelines for policymakers.

6.1 KEY OUTCOMES OF THE HOLISTIC DIAGNOSIS

Systemic Design as a methodology can provide a suitable approach and the RETRACE project has touched upon this to show to participating regions the way, how to systematically identify the territorial potentials and the specific context in which the Circular Economy policies and/or measures are being designed and implemented.

The project offered to partners an opportunity to learn and exchange knowledge and experience. One of the most difficult, yet also one of the most insightful tasks, was the preparation of the Holistic Diagnosis (HD) where partners mapped various territorial potentials that could be incorporated in the input-output system with the aim to valorise outputs as new inputs in the regional (sub)systems. Implementation of tasks confirmed that, if the transition to a CE should happen, we need to understand within the broader societal context not only the economic aspect but also the cultural, demographic, educational aspects. Another lesson learned during the HD task was that although there is a general logic that can be applied at the national/regional level when we are searching for solutions, going down, towards the subsystems, requires more specific answers to address the specificities of a particular (sub)system. Within the HD, project partners had to identify the policy gaps, which were one of the main inputs while preparing Regional Action Plans. Concerning the “gap solution”, inspiration arose during the study visits where partners and their stakeholders learned more about successful regional examples, consistent (at least to a certain degree) with the principles of the Circular Economy and the Systemic Design. The combination of both sides of the equation helped project partners to identify appropriate solutions and measures that were then included in the Regional Action Plans.

There are, however, some common elements in the group of policy gaps that were identified at the level of project partnership. While the regional action plans aim at removing these gaps and improving the implementation of particular policy document at a regional/national level, it became clear that some gaps should be addressed at the EU level if we want to enable a transition to a Circular Economy, while ensuring the action field level for all.

6.2 ACTIONS TO BE IMPLEMENTED AT THE EUROPEAN LEVEL

It seems that at the EU level one of the most important elements at the moment that will define our future development path is the direction set in the Multiannual Financial Framework. As stated by Jean-Claude Juncker “Budgets are not bookkeeping exercise – they are about priorities and ambition. So let’s first discuss about the Europe we want.”¹ Since environmental concerns, in particular, climate change, rank quite highly among the greatest concerns of the EU citizens,² it is relevant to notice that the MFF acknowledges that “Climate change and scarce resources are forcing us to look hard at how we can ensure that our way of living is sustainable.”³ However, it is a pity to see that the European Commission considers the climate mainstreaming across all EU programmes, with a target of only 25% of EU expenditure towards climate objectives. The issue of resource scarcity and thus Circular Economy is not mentioned explicitly, however, due to the fact that the transition to a Circular Economy can strongly support low carbon economy, we can consider that current mainstreaming arrangement will, at least implicitly support also the projects related to the Circular Economy. However, if we reconsider the state of the environment and the declarative commitment of the EU in the areas of climate change and Circular Economy, we can conclude that the set MFF could be more ambitious.

- ✓ This lack of ambition is also reflected in the proposal of the legal text for the ERDF and the Cohesion Fund Regulation which estimates that the “Operations under the ERDF are expected to contribute 30% of the overall financial envelope of the ERDF to climate objectives. Operations under the Cohesion Fund are expected to contribute 37% of the overall financial envelope of the Cohesion Fund to climate objectives.”⁴ The proposal furthermore only requires that the most developed Member States/Regions will be obliged to allocate to the PO2 minimally only 25%.
- ✓ Also, the specific objectives under the PO1 do not integrate circular or low carbon economy aspects, which raises concerns about activities that will be supported and that could have contra effects thus hampering a faster transition. This concern is supported by analysing Annex 1 of the Common Provision Regulation⁵ where out of 23 categories of intervention under PO1, only two (no. 22 and no. 23) are supposed to contribute to climate and/or environmental objectives. Additionally, the specific goals “promoting the transition to a Circular Economy” leaves us with the doubt that existing waste management practices will be supported under a different name.
- ✓ Based on the elements mentioned above, we could conclude that in the further adoption process of the existing proposals, which will frame overall future EU spending plan and specifically, implementing the Cohesion Policy, major improvements should be made if the EU is to lead the transition to a circular, low carbon economy.

The concept of Smart Specialisation Strategy is now recognised as one of the vehicles towards improved economic development in the Regions. In line with the observations from the previous point, in the new financial perspective, it is necessary to merge the concepts of “smart” and “circular and low carbon”. The rule should be simple: if it is not “circular and low carbon” it is not “smart”. The element of the design should intertwine both principles. Therefore, we believe that either new value chains and/or networks could be established or the existing ones

should strengthen their competitive advantage and address the climate/resources issue. The new horizons that emerge with the concept of Industry 5.0 should be scanned and integrated into the new Smart Specialisation Strategies.

At the EU level, it is also necessary to even further harmonise the policymaking process. The European Commission is taking steps in the right direction with, for example, the elements that are included in the “2018 Circular Package” and other related documents. Nevertheless, there are still some pending issues that need to be addressed at the EU level. In particular, one of the gaps that was detected is the difficulty in forming the secondary raw material market. This is due to two issues that should be addressed. One is improving the relevant legal framework to form appropriate (dis)incentives to encourage more efficient use of virgin raw materials and stimulate more efficient use of secondary materials. Also, some stakeholders involved in the project identified cases where transposition of the same legal text at the EU level vary in different member states. It is thus essential to have the same explanation of the EU legislation in each Member States.

- ✓ As the Circular Economy is gaining visibility, the EU is substantially financing various project and initiatives through various (centralised as well as decentralised) programmes. There is a tremendous amount of knowledge, insight, tools, methodologies, etc., generated for this topic, but to our knowledge, the information flows among these initiatives is quite weak, or too scattered. We believe that a shared information platform could facilitate better knowledge exchange at the entire EU level. We see the potential in the European Circular Economy Stakeholder Platform where the information on Circular Economy projects that are being supported through various centralised programmes should be included in the platform. For example, in the frame of the RETRACE project, we identified thirty best cases and all of them, we believe, should be included in the platform database.

6.3 SUPPORTING THE REGIONS TOWARDS THE CIRCULAR ECONOMY

The nature of the Circular Economy is such that requires a different governance model or approach compared to the linear economy. A plethora of activities is being carried out at different levels, city, municipal, regional, national and the challenge is to connect these elements to generate a genuinely circular system at all governance levels. Therefore, to have a successful transition to a Circular Economy, it will not be enough only to innovate on the technological and business side, but also on the side of governance and public administration. As indicated earlier, a necessary precondition for this is that a low-carbon Circular Economy becomes an integral part of all policies at all levels. Then we need to develop suitable mechanisms for better cross-sectoral/interdepartmental coordination. For that, it is necessary to create safe spaces for creative solutions to be generated in a multi-stakeholders manner, and some prototyping should be reserved to specific ideas to be tested/verified, and if proved to be suitable for a particular national/regional context space, they should be mainstreamed. Since the systems in which we operate are constantly changing, we need to ensure that already-established governance models can quickly adapt and continually accommodate changing reality. Several barriers should be removed to achieve this, goal. One of the most relevant is to generate at the regional/local level appropriate political support. This will be underpinned

by the suitable capacity building while creating the conditions for an active engagement of various stakeholders, in which the inspiration and the synergies could be sought in multiple existing initiatives (e.g., Transition Towns).

Some of the recommendations that were listed in the previous section like for example integration of circularity into the sectoral policies and ensuring to remove the conflicting requirements/support should also be considered at the regional levels.

The use of the ICT proves to be a key enabling element for the transition to circular, low carbon economy. It offers the potential not just in transforming the products and/or business models but also in connecting stakeholders in different ways providing them opportunities to design governance approaches that can support the participation of all relevant stakeholders in the transition.

One of the principles of the Cradle 2 Cradle,⁶ on which the concept of Circular Economy is based, is to “celebrate diversity”. By this, we recognise the richness of the potentials available in a particular location which offer different approaches, ways and opportunities to transit to a Circular Economy. The possibilities refer to multiple factors such as natural, economic, social, cultural, geographical, infrastructure, institutional setups, etc., which vary from region to region and from city to city. Consequently, such a high degree of diversity highlights different needs which will provide the context for the transition of ideas and solutions, which, if implemented, can improve the region’s resilience.⁷

Since countries usually encompass different regions and/or territories, it makes sense that the potentials of the nation are “broken down” into singular potentials related to a specific region and/or territory. The mapping of regional stocks and flows will indicate which are the areas and/or sectors that have the greatest circularity potential within and which are the possible innovations (technological and non-technological) for creating (new) value chains/networks to valorise a particular potential fully.

In the frame of the RETRACE project, the HD attempted to look into selected flows and resources based on the output-input logic. This proved to be the appropriate methodological approach since it puts a magnifying lens on the individual region/territory and “zooms in” on which are its potentials. It would, therefore, be beneficial if this methodological approach could be further elaborated,⁸ transferred and mainstreamed to other regions, territories and cities to start mapping their potential and identifying the appropriate solutions to support implementing the Systemic Design solutions where outputs are becoming inputs of the system.

At the national and regional level, more support and emphasis should be given to using green/circular public procurement. There are some Good Practices, also identified in the context of the RETRACE project, that confirm the importance of innovative circular procurement in the development of new products and/or services. Relevant stakeholders should facilitate peer-to-peer knowledge by helping to strengthen this practice also in countries and regions which are not able to develop the criteria for innovative/circular procurement.

From a beneficiary's point of view within the Interreg Europe programme, it would be worth engaging the project partners to contribute to the shaping of the new programme. This is extremely valuable since it offers an excellent learning opportunity and enables a valuable exchange of experience. We believe that it is worth considering establishing a mechanism that would ensure that the relevant knowledge and skills are built upon new projects (as a continuation from previous ones). This could be done via the following approaches:

- ✓ In the new application form, which will be relevant in the new perspective, applicants should reflect on the results of the most relevant projects for their project (i.e., project track-record).
- ✓ The new programming period could support the functioning of the consortia of (lead) project partners of the current perspective that would, in alliance with their project partners, work further on the topics that were addressed under the current view. It could also be interesting, if not even preferable, to intertwine issues from different project areas to generate value-added and ensure cross-sectoral fertilisation of ideas, knowledge and experiences. The selection of such consortia should be based on a competitive approach to support the best projects. Moreover, the focus of these consortia could probably be to work directly with the European Commission; the idea stems from the Fast Track projects in the 2007–2013 perspective where the EC representatives were directly following the development of the project.
- ✓ The programme should support consortia that are more peer-to-peer oriented (e.g., ministry to ministry, regional agencies to regional agencies).
- ✓ As already mentioned, a plethora of projects, financially supported at different centralised levels, should be set up. We believe that, at the level of all centralised programmes, the joint and unified policy learning platform could ensure more coherence and generate a better flow of information and knowledge.

Administrative simplification at the level of project management by introducing common obligatory reporting requirements.

¹ See <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A52018DC0098&from=EN>. Accessed 22/05/2018.

² Standard Eurobarometer 88, November 2017.

³ The Multiannual Financial Framework for the 2021–2027 COM(2018) 321 Final.

⁴ Proposal of the Regulation of the European Parliament and of the Council on the European Regional Development Fund and the Cohesion Fund COM(2018) 372 final” COM(2018) 372 final.

⁵ COM(2018) 372 final COM(2018) 375 final.

⁶ Available <https://www.epea.com/vision-principles/>. Accessed 22/05/2018.

⁷ OECD defines resilient city as “cities that have the ability to absorb, recover and prepare for future shocks (economic, environmental, social & institutional). Resilient cities promote sustainable development, well-being and inclusive growth.” The OECD is also proposing the

framework for measuring the cities resilience in the following categories: economy, society, environment, institutions. core Available <http://www.oecd.org/cfe/regional-policy/resilient-cities.htm>. Accessed 22/05/2018.

⁸ Possible synergies could be sought with the ESPON CIRCTER - Circular Economy and Territorial Consequences project, whose main primary objective is to provide evidence related to the territorial dimension of the transition towards a Circular Economy. It will also provide evidence on local and regional patterns and flows of materials and will provide the analysis of the territorial dimension aiming to cover changes in resource use, design, production, distribution, consumption and waste management. The study will also provide an input to European regions and cities on their potential for implementing steps towards a circular economy. Available <https://www.espon.eu/circular-economy>. Accessed 22/05/2018.

7. Conclusion

SILVIA BARBERO

Designing policy can be based on the application of design thinking to extend to a new level the design methodologies and use them for policy planning. In policymaking processes, many programs are developed by different stakeholders and actors. To face this kind of complexity, it is now necessary to use creative and structured innovation processes and approaches. Specifically, the Systemic Design method provides specific tools to manage complex situations, design new relations among the entities of a territory, visualise the hidden potentialities and boost proactive collaboration among local actors.

It is indeed essential to cooperate and engage with local society stakeholders, including citizens and consumers, labour unions and environmental organisations: participatory processes are fundamental to design effective policy strategies. Following this aim, the RETRACE project is distinguished by an active collaboration where all partners directly involved in the project and the local stakeholder are genuinely engaged in developing new strategies and plans, as described in this book.

The RETRACE project develops experimentation on how to integrate bottom-up and top-down approaches; its success is promising for further application in both other sectors and other regions. Anticipatory approaches, participatory and systemic perspectives, emerge and reflect how the combination of technology, design and social organisation are activating new mechanisms of sharing knowledge and experiences. While starting with a shift in the way to approach the policy design and its local and global issues, it is vital to introduce a profound holistic vision, which can make more comprehensible the complexity of the context (Capra, 1996). To be able to colonise the future with an approach of such nature should be reflected in a political commitment to find new structures of rules and actors who are capable of facilitating a participatory process, and will also support initiatives and projects that can bring social innovation.

The road towards a CE requires a transition from a linear approach to a holistic one, where the deep understanding of the scenario complexity comes from the number of created variables and relations. On that view, the policymaking process must consider innovative approaches able to solve problems related to complex phenomena. For that aim, nowadays, are required approaches that encourage people to “think outside the box” and generate such disruption (Considine, 2012). It is precisely in these circumstances that the role of design can be decisive, due to its nature of dealing with complex scenarios, anticipating future situations and generating innovative outcomes always fostering new approaches to complexity. Such thought-process undertaken by the designer can be useful if applied to policymaking processes. The Systemic Design method has emerged as crucial expertise, enabling the design of new relations between the stakeholders and the visualisation of sleeping assets or hidden potentialities of a territory.

It delivers a clear perspective of complex scenarios and highlights how to support active cooperation among local actors. This kind of framework strengthens the involvement of all stakeholders in the policymaking process and generates effective decision making.

As the society today evolves faster, it is vital to adopt proper anticipatory actions concerning governance that take policymaking one step forward towards achieving a sustainable territorial development. On that view, the current environmental and economic challenges require innovative approaches to complexity. Thus, the systemic one can provide an efficient way to interpret such complexity and give solutions. Nowadays, the aim of the design process has turned into a vital tool for the shaping of decisions. Specifically, in the field of policymaking where design has assumed a significant role (Blair, Cunningham, 1999). This expertise has increasingly been deployed as essential and practical in the making of better policies and governance strategies, orientated towards sustainable development, by bringing a qualitatively different approach to the process of policymaking (Bason, 2014).

A full combination of research methods from different disciplines, like data science, anthropology and systems thinking, generates multidisciplinary synergies. Consequently, it makes policy tangible for all stakeholders in a decision making process. Nowadays, the conventional focus on political strategies is not the most efficient since it entails a top-down approach that does not take into account the final users: the citizens. In that context, policy design requires multidisciplinary teams to conceive effective policies. For this reason, participatory processes are a key element to design effective policy strategies, applying a bottom-up approach for policy planning (Allio, 2014).

In a European context, the SD method for policymaking aims to enhance a sustainable and balanced territorial development supporting key policy instruments for the European Commission such as the Cohesion Policy. On that regard, the Systemic Approach generates strategies which promote a better decision making in order to anticipate an efficient regional development that accomplishes significant environmental-economical-social benefits. In fact, supporting cohesive territorial development at different levels in European regions and also that over time have an effect on policymaking for European governance. The Systemic Design Approach is thus proposed as an anticipatory tool for policymakers presenting a new starting point across the Holistic Diagnosis (HD) or system mapping (Battistoni, Giraldo Nohra, 2017). The overview of such complex scenarios provides tools to encourage the generation of new cooperation channels among different local actors. Moreover, it promotes a multidisciplinary approach that invites participants from different sectors to co-create within an interdisciplinary scenario, new policies that bring governments and citizens closer.

The RETRACE project has three core objectives. First of all, it provides Regions with methodological tools to adopt a Systemic Approach on the territory promoting the transition towards a CE; second, it exchanges and disseminates Good Practices of European CE; and lastly, it defines and implements five Regional Action Plans, presented in this book. These three objectives correspond to the three project-related publications. The first one is *RETRACE. Method Guide for Policymaking: A Circular Europe on the Way*,¹ which is the result of a fruitful dialogue among twenty authors, internal and external to the project, coming from all over Europe, who contributed to the discussion on the CE and on how it could be integrated into complex political,

design and decision making processes. During the first two years of the project, more than fifty GPs have been exchanged during the seven Field Visits. Thirty best practices were collected in the second publication *RETRACE. Good Practices Guide: Systemic Approaches for a Circular Economy*.² This is a guide to a range of selected Good Practices which address the most common policy gaps hampering a sustainable development; fostering all actors involved in policymaking processes to encourage more effective paths towards the CE. Lastly, this volume, *RETRACE. Policy Road Map: A Systemic Approach for Circular Regions*, which includes the Regional Action Plans of the Piedmont Region (Italy), the Basque Countries (Spain), Nouvelle Aquitaine (France), Slovenia and the Romanian Nord-East Region, tackles the policy approaches from Regional and European levels.

These RAPs stem from the work of the previous two years and in particular, from the Holistic Diagnosis that highlighted specific Policy Gaps and the potentialities of each Region, as well as the exchange of Good Practices providing suggestions to bridge the identified Policy Gaps. This has been the result of a combined approach and a joint effort between the RETRACE partners and the Managing Authorities to elaborate possible actions to support the transition to a CE from a governance perspective in the upcoming years.

Each Region produced an Action Plan proposing several measures that answer to six common Policy Gap threads:

1. to support collaboration between sectors;
2. to involve the operators concerning the CE;
3. to improve policy regulations on the CE;
4. to tailor the policy measures on the CE;
5. to support the business and market development of CE activities;
6. to focus on Small and Medium Enterprises (SMEs) and micro-manufacturing.

The key points of the RAPs have been summarised in the Policy Briefs presented in this book. The actions suggested in these Action Plans will be implemented and monitored during the next two years, until the end of the project in 2020.

This is the arriving point of a two years' journey where the achievements beyond the project are discussed at a broader European scale. The discussions from diverse points of view deliver a deeper overview regarding the highlights that can emerge from the Policy Briefs produced by each partner Region and how these milestones could serve at the various levels from the general policy framework in the CE to promote sustainable governance in the European Union.

It is impressive to see these Policy Briefs through a full spectrum of governance levels which provide each Region with an overall framework for a more in-depth overview of current initiatives and projects defined within the context of RETRACE and attempting to support the transition towards a CE.

Furthermore, it is a very enriching opportunity to discuss the importance of local experiences, such as the ones taking part in the RETRACE project, in the broader framework of Europe's transition towards a CE and how these case studies will support the Cohesion Policy beyond 2020 at different levels in the European Regions.

¹Available online for free download on www.interre-geurope.eu/retrace in Library section.

²Available online for free download on www.interre-geurope.eu/retrace in Library section.

REFERENCES

Allio, L. (2014). *Design Thinking for Public Service Excellence*. Singapore, Singapore: UNDP Global Centre for Public Service Excellence.

Bason, C. (ed.) (2014). *Design for Policy*. Aldershot, UK: Gower Publishing.

Battistoni, C., Giraldo Nohra C. (2017). "The RETRACE Holistic Diagnosis." In Barbero, S. (ed.). *Systemic Design Method Guide for Policymaking: A Circular Europe on the Way*. Turin, Italy: Allemandi, 112–20.

Blair, T., Cunningham, J. (1999). *Modernising Government*. Presented to Parliament by the Prime Minister and the Minister for the Cabinet Office by Command of Her Majesty the Queen of England.

Capra, F. (1996). *The Web of Life: A New Scientific Understanding of Living Systems*, New York, USA: Anchor Books.

Considine, M. (2012). "Thinking Outside the Box? Applying Design Theory to Public Policy." *Politics & Policy*, 40(4), 704–24.

Glossary

CIRCULAR ECONOMY

According to the definition provided by the Ellen MacArthur Foundation, Circular Economy is “restorative and regenerative by design. In a Circular Economy, there are two kinds of material cycles: biological, capable of being reintegrated into the biosphere, and technical, destined to be re-valorised without entering the biosphere. As envisioned by the originators, a Circular Economy is a continuous positive development cycle that preserves and enhances natural capital, optimises resource yields, and minimises system risks by managing finite stocks and renewable flows. It works effectively at every scale.” In a Circular Economy, the use of resources (input) is optimised and the production of by-products or waste (output) is minimised through different kinds of actions that include design for long-lasting products, maintenance, reuse, recycling, repair, remanufacturing and refurbishing. This approach is opposed to the linear economy, guided by the “take, make, dispose” production model.

See: <http://www.c2cproducts.com/detail.aspx?linkid=1&sublink=6>

See: <https://www.ellenmacarthurfoundation.org/circular-economy>

See: https://en.wikipedia.org/wiki/Circular_economy

COHESION POLICY

According to the European Commission the Cohesion policy “is the European Union’s strategy to promote and support the ‘overall harmonious development’ of its Member States and regions.” Framed inside the Treaty on the Functioning of the European Union (Art. 174), the EU’s Cohesion Policy main purpose is to foster the economic and social cohesion by shortening inequalities at the level of development among regions. The policy is addressed on important areas that promote the EU face up to the current challenges and stay globally competitive. The investment is approximately 32.5% of the EU budget 2014–2020 (€ 351.8 billion over seven years at 2014 prices) distributed between financial instruments that promote Cohesion Policy. These are controlled between the European Commission, the Member States and stakeholders at the local and regional level.

See: http://ec.europa.eu/regional_policy/en/policy/what/glossary/c/cohesion-policy

ECODESIGN

Ecodesign is a broad term, defined by the European Union, as the “integration of environmental aspects into product design with the aim of improving the environmental performance of the product throughout its whole life cycle.” Focused on reducing the environmental impacts of products, Ecodesign involves different design strategies, such as Design for Disassembly, Design by Components, Systemic Design, Design for Recycling, Design for Environment.

See: European Union (2009). Directive 2009/125/EC of the European Parliament and of the Council that took place 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products. Available <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0125&from=EN>.

FIELD VISIT

Field Visits involve both partners and stakeholders. Each Field Visit (FV) lasts one day and a half, including the presentation of Good Practices (GPs) and the visit of at least one GP. Besides collecting extra information on specific topics directly from the representatives of the GPs, FVs also offer the opportunity to see partner regions and the context in which the GPs take place, providing an additional level of understanding of the GP. Moreover, these events promote the networking activity among stakeholders, partners, and representatives of good local practices and offer an occasion for partners to spend time together and work in a team.

See: Pallaro, A. (2017). “Good Practices and Field Visits.” In S. Barbero (ed.), *Systemic Design Method Guide for Policymaking: A Circular Europe on the Way*. Turin, Italy: Allemandi, 125–26.

GOOD PRACTICE

A Good Practice is defined as an initiative (e.g., a project, a process, a technique) undertaken in one of the programme’s priority axes, which has proved to be successful in a region and is of potential interest to other regions. A Good Practice is “proved successful” when it has provided tangible and measurable results in achieving a specific objective.

See: Interreg Europe (2018). The Interreg Europe Programme Manual, version 5, 37. Available https://www.interregeurope.eu/fileadmin/user_upload/documents/Call_related_documents/Interreg_Europe_Programme_manual.pdf

HOLISTIC DIAGNOSIS

Placed in the foreground of the Systemic Design approach methodology, the Holistic Diagnosis (HD) is a tool that evaluates the context of a project through different levels of analysis to define the current state-of-the-art. The HD aims at highlighting the connections between system components and provides accessible support for the interpretation of data. This tool is executed through different means of investigation at the economic, socio-cultural, and environmental level. It develops through different phases, which enable the collection of qualitative and quantitative data, followed by the analysis of interactions between them. The HD is carried out in three phases: desk research (phase 1) and field research (phase 2) are dedicated to the collection of quantitative and qualitative information through different methods while the research synthesis (phase 3) is dedicated to the analysis of the collected data.

See: Battistoni, C., Giraldo Nohra, C. (2017). “The RETRACE Holistic Diagnosis.” In S. Barbero (ed.), *Systemic Design Method Guide for Policymaking: A Circular Europe on the Way*. Turin, Italy: Allemandi, 112–20.

POLICY DESIGN

Policies are revealed through texts, practices, and symbols, and discourse that define and deliver values including goods and services as well as regulations, income, status, and other positively or negatively valued attributes. Policy design refers to the content of public policy; blueprints, architecture, discourses, and aesthetics of policy in both are instrumental and symbolic forms. As an area of study Policy Design engendered vast literature in the 1980s and 1990s with prominent figures in the US, Canada, Europe and Australia. After the early 1990s, however, this literature tailed off and although some writings on policy design have continued to flourish in specific fields such as economics, energy and environmental studies, in the areas of public administration and public policy more generally the idea of ‘design’ was often replaced by the study of institutional forms and decentralised governance arrangements.

Schneider, A. L., Ingram, H. (1997). *Policy Design for Democracy*. Kansas City, Missouri, US: University of Kansas Press.

POLICY INSTRUMENT

A policy instrument is a means for public intervention and refers to any policy, strategy, or law developed by public authorities and applied on the ground to improve a specific territorial situation. In most cases, financial resources are associated with a policy instrument. However, an instrument can also sometimes refer to a legislative framework with no specific funding.

See: Interreg Europe (2018). *The Interreg Europe Programme Manual*, version 5, 38. Available https://www.interreg-europe.eu/fileadmin/user_upload/documents/Call_related_documents/Interreg_Europe_Programme_manual.pdf

REGIONAL ACTION PLAN

The Action Plan is a document produced by each region providing details on how the lessons learned from the cooperation will be implemented to improve policy instruments addressed to their region. It describes the actions that need to be implemented, their time frame, the players involved, and the possible related costs and funding sources.

See: Interreg Europe (2018). *The Interreg Europe Programme Manual*, version 5, 39. Available at https://www.interreg-europe.eu/fileadmin/user_upload/documents/Call_related_documents/Interreg_Europe_Programme_manual.pdf

SUSTAINABLE DEVELOPMENT GOALS (SDGs)

The SDGs are a set of 17 goals, adopted by countries on 25th September 2015, to end poverty, protect the planet and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years. The SDGs, also known as Global Goals, build on the success of the Millennium Development Goals (MDGs) and aim to go further to end all forms of poverty. The new Goals are unique in that they call for action by all countries, poor, rich and middle-income to promote prosperity while protecting the planet. They recognise that ending poverty must go hand-in-hand with strategies that build economic growth and addresses a range of social needs including education, health, social protection, and job opportunities while tackling climate change and environmental protection.

See: <https://www.un.org/sustainabledevelopment/development-agenda/>

SYSTEMIC DESIGN

Systemic Design is a recent initiative in design that integrates systems thinking and human-centred design, with the intention of helping designers cope with complex design projects. The recent challenges to design coming from the increased complexity caused by globalisation, migration, sustainability render traditional design methods insufficient. Designers need better ways to design responsibly and to avoid unintended side-effects. Systemic Design intends to develop methodologies and approaches that help to integrate systems thinking with a design towards sustainability at an environmental, social and economic level. It is a pluralistic initiative where many different approaches are encouraged to thrive and where dialogue and organic development of new practices are central. In this publication we refer to the methodology defined by Professor Luigi Bistagnino, which is built around the fundamental principle that the material and energy output of a system (waste) can become input for another one (resource), taking inspiration from nature (Bistagnino, 2011). These relationships generate an autopoietic system of interconnected processes where waste is reduced, and that tends to produce zero emissions. This system is strictly connected to the local territory in which the process operates and is built around the needs of the people related to it.

See: https://en.wikipedia.org/wiki/Systemic_design

Bistagnino, L. (2011). *Systemic Design. Designing the Productive and Environmental Sustainability*. Bra: Slow Food Editore.

Authors' Biographies

SILVIA BARBERO

Silvia Barbero, PhD is an Assistant Professor at Politecnico di Torino (Department of Architecture and Design). She is a lecturer of Product Environmental Requirements at the Design and Visual Communication degree and of Systemic Design at the Systemic Design Master degree at Politecnico di Torino. She is also responsible for the stage & job design curriculum. Her research mainly focuses on Systemic Design applied to agro-food and energy systems. She is the scientific coordinator of the RETRACE Project (Interreg Europe – I Call) on the development of local and regional policies moving towards a Circular Economy, preventing waste being released into the environment. She has been coordinator also of regional projects, and team leader of international projects. She is the author of numerous books on sustainable design. Furthermore, she wrote more than 100 papers in peer-reviewed journals, book chapters and reviewed international conference proceedings.

PIOTR BARCZAK

Piotr Barczak was born in Poland in 1984. Following his studies in Poznan and Bremen, Piotr holds a Masters degree in Geography with a specialisation in Spatial Management and Regional Development. He also has a diploma in Community Based Adaptation to Climate Change. He started his professional career as a land surveyor for a private company providing technical analysis of urban and coastal areas. In 2010 he started working in the Polish Ministry of the Environment where he joined the International Cooperation Unit. In 2011 he was sent to Brussels to reinforce the Environmental Policy Unit at the Permanent Representation of Poland to the EU. After a successful Polish Presidency at the Council, he decided to leave the diplomatic service and join the NGO world where he worked on shale gas and land-grabbing in Africa. He has worked in several missions in the Democratic Republic of Congo and South Sudan collaborating with Caritas and the UN Mission to South Sudan. Piotr came back to Brussels in 2013 to join the EU Policy Team of the European Environmental Bureau working on air pollution and waste. He is now responsible for the waste policy at the EEB representing the voice of around 150 national NGOs dealing with environmental protection. He chairs the EEB Waste Working Group which consists of waste experts from Member States with hands-on experience in waste management and prevention measures. He collaborates closely with Zero Waste Europe as well as with municipalities, progressive industry and waste management organisations.

SIMONA BONAFÈ

Simona Bonafè is a member of the European Parliament (S&D Group). She ran as head of list of the Italian Democratic Party for the EP election in 2014 and was elected, for her first mandate, with the highest number of preferential votes among Italian MEPs. She sits as Member in the ENVI Committee (Environment, Public Health and Food Safety), and as Substitute in the ECON Committee (Economic and Monetary Affairs). She is Member of the Delegation EU-US and the Delegation EU-China. She is vice-chair and co-founder of the Parliamentary Long-Term Investment Intergroup. She is the EP Rapporteur for the four directives contained in the Circular Economy Package. She has been a member of the Italian Lower Chamber, sitting in the Committee for Economic Activities and Trade. Prior to that, for over ten years she was engaged in local politics in Tuscany, where she served as Municipal Council Member for Environment.

MARJANA DERMEJ

Marjana Dermelj works in the Government Office for Development and European Cohesion Policy, Development Policies Division, at Slovenian Ministry, where she covers environmental issues. Prior to her work as a civil servant, Marjana worked in the non-governmental sector (Umanotera, The Slovenian Foundation for Sustainable Development), where she ran several campaigns and eventually managed the fair trade shop 3MUHE. She holds a bachelor degree in Chemistry and successfully accomplished two post-graduate studies related to environmental policy and management.

CAROLINA GIRALDO NOHRA

Research Fellow for the RETRACE Project and PhD candidate from the Department of Management and Production Engineering at Politecnico di Torino, her work focuses on the Systemic Design methodology and the Circular Economy research, and she coordinates the Exchange of Experience activities across all partners. Before that, she carried out a study on Systemic Design in the Latin American context at A Good Foundation in Amsterdam and another research on urban sustainability in South Africa in collaboration with the leading African organisation Future Cape Town. Since her Master in Ecodesign at Politecnico di Torino, she has been actively interested in sustainable development.

DIRECTORATE-GENERAL (DG) GROW, UNIT FOR CLUSTERS, SOCIAL ECONOMY AND ENTREPRENEURSHIP

The Directorate-General (DG) for Internal Market, Industry, Entrepreneurship and SMEs is the European Commission service responsible for:

- ✓ completing the Internal Market for goods and services;
- ✓ helping to turn the EU into a smart, sustainable, and inclusive economy by implementing the industrial and sectorial policies of the flagship Europe 2020 initiative;
- ✓ fostering entrepreneurship and growth by reducing the administrative burden on small businesses; facilitating access to funding for small and medium-sized enterprises (SMEs); and supporting access to global markets for EU companies. All of these actions are encapsulated in the Small Business Act;
- ✓ generating policy on the protection and enforcement of industrial property rights, coordinating the EU position and negotiations in the international intellectual property rights (IPR) system, and assisting innovators on how to effectively use IP rights;
- ✓ delivering the EU's space policy via the two large-scale programmes Copernicus (European Earth Observation Satellite System) and Galileo (European Global Navigation Satellite System), as well research actions to spur technological innovation and economic growth.

MARIA LOZANO URIZ

European Officer in the Committee of the Regions in the SEDEC Commission, Maria Lozano Uriz is responsible for digital issues, research and innovation. Before working in numerous institutions, she was Delegate of the Government of Navarra in Brussels from 2001–2013; Communication Advisor Ministry of Development, Government of Spain, 2000–2001; Communication Advisor of the First Vice-Presidency of the Government of Spain, 1997–2000; Assistant Professor of the Department of

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This volume aims at describing the benefits of adopting Systemic Approaches in the transition towards a Circular Economy.

The Roadmap includes the project milestone, the Five Policy Briefs, developed by Partner Regions with policy recommendations for the update of regional and national RIS3 strategies.

This book emphasises how the approach used by the RETRACE Project can be adopted by a multi-level governance with contributions from the EU Parliament, the EU commission, CoR, NGOs and Regional managing authorities. This volume is addressed to regional policymakers, policy managers and is the last of a three-book series published across a four-year period (2016–2020), as part of the RETRACE Project funded by the Interreg Europe Programme.

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