Track 15 Tourism, public spaces and urban cultures

Transitional Approach for Enhancing Place-based and Collaborative Policies, towards an Evolutionary Dimension of Cohesion Policy

Carmelina Bevilacqua[1], Francesco Cappellano[2], Yapeng Ou[3]

[1]1Università Mediterranea di Reggio Calabria, cbevilac@unirc.it
[2]Università Mediterranea di Reggio Calabria, francesco.cappellano@unirc.it
[3]Università Mediterranea di Reggio Calabria, yapeng.ou@unirc.it

Abstract: The paper proposes a new perspective in the design process of tailored development policies via the innovation boost. Stemming from the current debates on regional diversification together with the emerging role of the city in pursuing local innovation ecosystem, the aim is to explore new development policy configuration in which the evolutionary framework prompts the response of different territories to continuous shocks. The relevance lies in bridging Resilience, as an ongoing process of change rather than a recovery to a (pre-existing or new) stable equilibrium state, with Diversification, as a leverage of regional resilience to absorb shocks, and Evolutionary Theory based on "continuing and progressive change". In this perspective, the innovative aspect stems from conceiving Transition Management (TM) as a keen strategical approach to translate the combination (Resilience, Diversification, Evolutionary Theory) into policy design and implementation. The paper is a place to present the TREnD project expected to construct a platform on the basis of capturing resilience and evolutionary path as policy design factors to push forward the state-of-the-art of approaches to innovation policy. This paper introduces the background and rationale of the TREnD project, analysing the academia's discussions on the S3 implementation in EU regions to find the existing gaps in the current EU Cohesion Policy. It then presents the TREnD approach, discussing its objectives, methodology, conceptual framework, and implication. Finally, it draws a brief conclusion and offers suggestions for the upcoming research activities.

Keywords: TREnD project; transition management; resilience; diversification

Introduction

A stark spatial development unevenness throughout the EU regions, which has been widening, has put the efficiency of the current EU Cohesion Policy under question. As the graph below shows (Figure 1), there is a considerable variation in the regional GDP per capita (in terms of purchasing power standard) both in the EU and within the Member States. Pushing the reforming process of Cohesion Policy forward, therefore, proves to be an urgency for the post-2020 regional policy programming for creating new reliable industrial paths that represents a crucial challenge for both first-tier and lagging regions, and shift from structural-change oriented programming methodology to one with an evolutionary perspective. This paper intends to introduce a new perspective in the design process of tailored development policies that are more adequate in responding to local needs via the innovation boost. With this new perspective, it is aimed to respond to the current debates concerning the post-2020 EU Cohesion Policy programming which have focalised around the following issues (Bachtler *et al*. 2017):

- "Innovation ecosystem" is increasingly aspired by cities and regions alike. This is due to the ongoing structural change across the EU that requires a different policy and institutional focus on "ecosystems" of open, interconnected, cooperative multi-stakeholder networks for developing strategic partnerships. Such an ecosystem is critical to respond rapidly and flexibly to continuous technological, market and social changes during the structural change;
- The environment conducive to the development of innovation ecosystem must be tailored to adapt to specific national, regional and local contexts. Meanwhile, in order to be adapted to the actual needs of different territories, policy packages need to be designed and delivered with an integrated and coordinated approach at national, regional and local levels;
- Development strategies that are differentiated or place-based are badly needed especially at local level to promote adaptation to the specific shocks on regional economies generated by globalisation and market integration require.

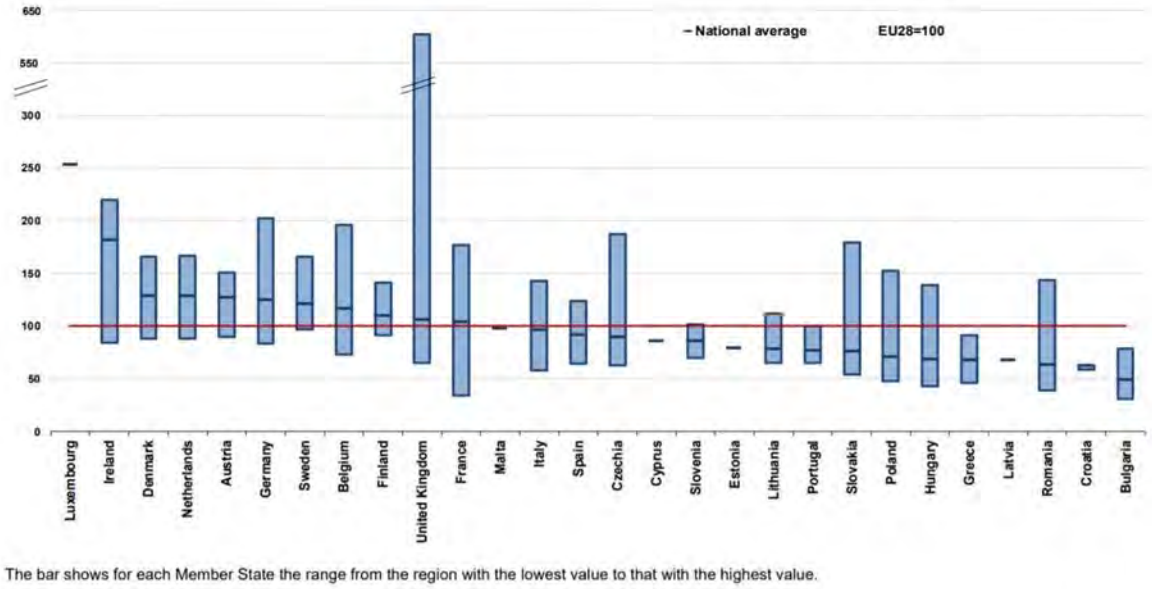

Figure 1: Variation of regional GDP per capita within EU Member States in 2017 (in PPS, EU28 = 100). Source: Eurostat (2017).

To curtail these economic disparities, the EU regions are challenged to develop their growth trajectories in a way to avoid the "me-too effect": the intention of underdeveloped regions to adopt smart specialisation strategies (S3) – derived from more developed regions – which are too ambitious for their potentials (Bevilacqua *et al.* 2015).

In a very short time, S3 has experienced an extraordinary success becoming a policy hit from academic concept. It represents a suitable example of "policy running ahead of theory" (Foray, David, & Hall, 2011). A posteriori, an analysis on the first wave of RIS3 implemented across the European Regions, Capello & Kroll (2016) identifies a manifold group of "fragilities" which impedes S3 to fully address its objectives across both wealthy and lagging regions.

1. Smart Specialization agenda fails to provide a suitable answer for regional contexts endowed with weak levels of connectedness, entrepreneurial, spirit, size in terms of

market potential, industrial diversity, quality of local governance and a critical mass of capabilities to develop collective learning processes;

2. From the first evaluations of RIS3 plans, emerges a widespread lack of capacity for the identification of new related activities which impedes to diversify the technological domains around local historical specialization patterns. The authors warn that in many backward regions there is an increasing tendency of "lock-in". Regional Authorities face difficulties in upgrading the quality of existing specialization through a creative and appropriate diversification process.
3. Taking into account the Italian lagging regions, the two authors raise doubts about the appropriateness of specialization patterns for the future development of these regions, traditionally characterized by few or no local research institutions and with no critical mass in high-tech activities.
4. Despite it is desirable to relocate peripheral regions into the global value chains, sometimes this is out of the local policy makers' sphere of control. The presence of Multi National Enterprises (MNE) in those regions is limited to a few subsidiaries which are not able to draft their own strategy which, conversely is set by international headquarters placed in different regions.
5. Considering local Small and Medium Sized Enterprises (SME) with a weak absorptive capacities and creativity, the only actors able to take part at the regional strategy making process are the stakeholders in local science.
6. The authors warn also front-runner regions can have difficulties to target effectively the EDP. The choice of priorities can be very limiting when the regions are endowed with a wide number of specialisations.

In sum, the authors conclude that "the smart specialization strategy has failed to explain concretely how the concept could provide a common political rationale for a socio-economically and territorially diverse set of regions and nations facing different place-based challenges and different innovation modes, hence, quite legitimately, different general policy agendas" (Capello & Kroll, 2016). Consequently, the endeavour of the EU Cohesion Policy to pursue a change-oriented methodology through a new regional innovation policy has been nuanced by continuous shocks and crises. These, in turn, increased regional and territorial disparities across the EU.

As debated, the urgency to adopt game-changer regional policies is an issue perceived by both wealth and lagging regions. Regarding the translation of the current EU Cohesion Policy, on the one hand, the first-tier regions used to be highly specialised in certain sectors, putting themselves at risk of becoming path-dependent and potentially victims of "lock-in" phenomena. In this respect, we recall the "cluster lifecycle" approach (Fornahl &Hassink, 2017, Pronestì & Bevilacqua, 2018). On the other hand, the lagging regions are exposed to risks of multiple nature (Annesi *et al*. 2018). Those regions would eventually cope with the need of transforming risks into opportunities in compliance with the window of locational opportunity (WLO) approach.

In this respect, the robust branch of literature concerning the Evolutionary Economic Geography (EEG) becomes useful to this narrative since it points out the need to discover a "novelty" intended as a new, promising set of economic development trajectories. In particular,

> "evolutionary economics deals with the long-term processes of changing economic structures, more in particular with the increasing variety of technology and organisations, and with the strategies of economic actors to adapt to changing structures, that is strategies to survive" (Lambooy & Boschma, 2011. P.113).

This paper adheres to this EEG backdrop constructing an improved approach to the design of regional innovation policies in the post-2020 EU Cohesion Policy reforming process. This preliminary analysis explores how the structural change – largely advocated in the EEG view – can be addressed at a strategical regional policy level. Therefore, we recall the most recent milestones in this literature branch.

Capello and Lenzi (2018) propose three pathways towards the new path creation, including creation, diversification and upgrading (*ibid*.) as is shown in Table 1. Their interpretations are based on the conceptualization of three main archetypal innovation patterns: "science-based pattern", "creative application pattern", "imitative innovation pattern". In their framework, they emphasize a pillar of the EEG, the path dependence as it "affects structural dynamics and therefore the possibility to move from one trajectory/paradigm to another, and how such moves can occur" (p.5).

Table 1: Creation, diversification, upgrading and regional learning trajectory dynamics: indicators. Source: Capello & Lenzi (2018).

Pathway	**From Basic to applied science trajectory**	**From applied to basic science trajectory**	**From informal to formal application trajectory**	**From passive to active imitation trajectory**
Creation	Making the best use of existing excellence niches in applied sciences *Indicator: no GPT patents for capita*	Making the best use of existing excellence niches in basic sciences *Indicator: GPT patents for capita*	Making the best use of technological niches *Indicator: Patents for capita*	Attracting new economic (MNC) activities I*ndicator: FDI penetration rate*
Diversification	Emerging research activities toward basic science fields *Indicator: Continuity of the knowledge base*	Enlarging research activities toward basic science fields *Indicator: Originality of the knowledge base*	Enlarging local production towards technology-oriented modes of innovation/industries *Indicator: Technological diversification*	Enlarging local activities to related ones *Indicator: Related variety in local sector*
Upgrading	Enriching the knowledge base in basic science fields *Indicator: Specificity of the knowledge base*	Enriching the knowledge base in basic science fields I*ndicator: Generality of the knowledge base*	Formalizing the knowledge base *Indicator: Citations received per capita*	Redirecting local production to more complex goods *Indicator: GVA in (medium) high-tech sectors*

Note: FDI, foreign direct investments; GPT, general-purpose technologies; GVA, gross value added; MNC multinational cooperation.

All in all, the authors emphasize the multidimensional nature of the evolutionary process the regions need to change their economic structures. Consistently, the following section proposes the research background to unfold a novel regional policy approach needed to support the diversification.

Research Background: Transition with Resilience for Evolutionary Development

As debated the academics from the EEG group seek to find out policies successful to accomplish what policy makers request: "regional diversification" as a strategy towards the path creation (Neffke et al. 2011). According to Boschma (2017), the diversification patterns in EU occur upon related and unrelated pathways. In this respect, we recall the "proximity" (Boschma, 2005) along with "the

related variety" (Frenken et al. 2007) as significant milestones in the economic geography studies. Up to date, the later has been the centre of an extensive literature that emphasises the opportunity to develop economic linkages on industries related to the existing portfolio. On the one hand, the related diversification is found to be a more common phenomenon in regions (Boschma et al. 2017), indeed is one of the rationales underpinning cluster policy (Porter, 1990). On the other hand, the unrelated diversification seems still uncharted in terms of policy guidelines, monitoring/evaluation and spatial outcomes.

The strategic approach to regional diversification has been the object of several debates in both academic and policy arenas. A novel strand of literature recalls the transition management (TM) to explain the "reorientation of existing functions in terms of forms and nature, prompting a change in their main organizations, arrangements, aim and scope" (Capello and Lenzi, 2018). In this view, the innovation has to be considered as an outcome of "bricolage" (Boschma et al. 2017) where all actors (e.g. quadruple helix) contribute to share and recombine resources towards a new path creation.

The TREnD (Transition with Resilience for Evolutionary Development) research project drafts from the preceding MAPS-LED (Multidisciplinary Approach to Plan Smart Specialization Strategies for Local Economic Development) project, which pointed out the territorial dimension of innovation in Smart Specialization Strategy (S3) steering process and how S3 can be translated into spatially-oriented local development policies. Despite the novelty of the S3 concept, MAPS-LED highlighted how S3 implementation process needed an evolutionary approach to face continuous changes, crisis and shocks. Accordingly, the TREnD project reveals the need to diversify regional economic portfolio, which is deemed crucial by EU regions. The most advanced regions tend to minimize their own extent of being "path dependent" and so preventing the hazardous risk to fall into the "lock-in" phenomena. At the same time, the lagging regions seek to adopt the S3 towards filling the gap with their wealthier counterparts.

Plenty of evolutionary economics strive to explain the creation of novelty otherwise known as new (industrial) "path creation", which is understood as:

> "... an iterative construction process where networks of distributed actors jointly create new market segments and user profiles, adapt regulations, lobby for subsidies, or define new technical standards and thereby ultimately create the conducive environment that helps a new industry develop and prosper in a region (Garud and Karnøe, 2003, Garud et al. 2010)" (Boschma *et al*. 2017).

While Capello and Lenzi (2018) carried out a strategic analysis on the terms seeking to explain the interplay between knowledge base and territorial assets, Boschma and others (2017) elaborate on the difference between regime and niche creation, which does not have to be confused with unrelated diversification. Within this backdrop, they point out four types of regional diversification (Table 2). They describe each type of institutional work needed (maintenance/creation), the risk to be borne, the key actors to embed, and the interplay between local and global value chain.

In sum, there exist gaps in the existing knowledge on regional diversification, and bridging it with transition management looks promising and viable. In fact, Boschma and others (2017) discuss the distinction between Transition Studies (focusing on niches contending the regimes) and the Evolutionary approach (focusing on the novel sector in a defined territory). The bridge between those two narratives can disclose important but still uncharted research avenues. Second, the spatial

outcomes of regional diversification remain largely uncharted. Finally, the policy approach concerning lagging regions in view of path creation would add significant value to the policy agenda.

Table 2: Types of regional diversification. Source: Boschma and others (2017)

FUNCTION	DEFINITION
Replication	most conservative diversification logic in which a region develops related industries by adopting a technology that is institutionalized in a global socio-technical regime
Transplantation	a diversification trajectory in which a region develops an industry unrelated to its knowledge base and institutions, yet based on adopting a regime technology from the global system
Exaptation	diversification logic where new applications are discovered for existing knowledge or technology
Saltation	concept of saltation leading to a new niche would refer to an innovation that is not only new to the region but also new to the world.

The TREnD Approach

Conceptual Framework

The TREnD project's rationale is to provide critical mass to manage the continuing and progressive change by building a logical framework featuring metrics of Resilience and TM. In this view, the project is expected to move forward the current state of the art by building an "innovative bridge" among the nature of diversification, the extent of "resilience and TM" processes implemented.

The overall objective is twofold: 1) to adjust the exiting evolutionary perspective for a more integrated spatial planning able to coordinate the regional and the local level for making and delivering tailored development policies with a place-based approach; and 2) to introduce an evolutionary perspective to the post-2020 EU Cohesion Policy by constructing an improved approach to the design of regional innovation policies that incorporates transition management (planning) and resilience building (governance). Such an objective stems from the fact that, facing the ongoing social and economic transformations, a region or urban system's ability to respond to crises and shocks by changing its structure and function is critical to sustainable local development. To strengthen this ability, regional economic resilience needs to be leveraged through adopting and implementing Transition Management (TM) strategies and developing new growth paths, namely, economic diversification.

Regional economic resilience has been heralded as "the ability of a system to adapt, reorganize itself and change its path of growth" (Kakderi & Tasopoulou, 2017; Martin, 2012). This definition, among others, embeds the Schumpeterian belief which rejects equilibrium-based economic approaches. In fact, the concept has recently been interpreted in an evolutionary perspective "as a permanent process of adjustment and change, and the positive contribution of change to structural improvements" (Wink, 2014). Alike the cluster life-cycle, resilience-building processes can be interpreted as continuous trade-off between a shift in the short run towards unfolding a new growth path, namely the "adaptation", and the capacity of the system to adapt in the long term, marked as "adaptability" (Pike, Dawley & Tomaney; 2010). These two concepts along with the knowledge base inherent of the

territory, seem critical to explain the nature of the regional economic variety, namely unrelated/related (Boschma, 2015). In fact, regional economic variety works as a "shock-absorber" and it is directly proportional to resilience at diminishing the local-input-output linkages (Martin, 2012) and, in turn, the exposure to the risk of "path dependency". Despite a growing interest on the regional economic resilience, and its relevance in explaining "the capacity of a region to develop new growth path" (Boschma, 2015), the concept deserves to be better defined in respect with a time framework regarding the resilience processes, with their legacy from the past trajectories, their place-based metrics, their impact measurements.

Based on the above considerations, the aim is addressed to construct a ground-breaking approach to meet the need of EU regions to diversify regional economic portfolio. This is proposed to be achieved by deploying TM as a fundamental instrument to translate the combined Resilience-Diversification-Evolution logic into policy design and implementation. To achieve this objective, the research project seeks to:

- identify and examine the factors enabling or hindering the TM strategies at a governance standpoint;
- assess the territorial features critical to enable a resilient-building process;
- unveils the unexploited potentials for "re-shaping trajectories" disclosed through the windows of local opportunities due to the external shocks to which regions are continuously exposed.

In order to achieve these goals, the TREnD project, grounded in its multidisciplinary network and partnerships, is designed to carry out joint research activities on the following topics:

- Innovation in transition management and resilience concept from an evolutionary economy lens;
- Innovation in transition management and spatial planning through a territorial dimension approach;
- Resilience Capacity building in the aftermath of external shocks.

The ultimate goal of this research project is to construct an Open Access Toolkit (OpenAT) for the European Post-2020 Cohesion Policy in response to the widening spatial development disparities across Europe. Dedicated to policy-makers and policy-users (e.g. regional authorities, academics, stakeholders and urban advocacy groups), the OpenAT is expected to enhance the regional administrative capabilities to trigger, implement and manage Transition Management (TM) strategies towards resilient-building processes. To better support the implementation of TM strategies at different regional/local levels, the OpenAT will provide a set of indicators regarding: 1) context, 2) result, and 3) performance. In a broader sense, the OpenAT will serve as a "capacity building" platform able to not only spread knowledge about regional economic diversification, but also spur social innovation.

Grounded in a robust literature review covering evolutionary economics, resilience, transition management and spatial planning, the TREND project adopts a mixed method research approach. Quantitative data, including statistical, geographical and demographic data gained from official and public statistical data warehouse at different geographic levels (city – regions – country – EU- non-

EU), are interpreted with the support of qualitative data, gained through on-line and face-to-face interviews of public and private stakeholders; and by means of surveys, such as observation, reports and inquiries.

This mixed method research approach is crucial to case studies, which are to be developed through data gathering (e.g. interviews and surveys) and data analysis (e.g. social network analysis). It is also supportive of spatial analysis to help gauge the effect of the "space/place" on related/unrelated diversification through indicators, previously deducted from literature. These indicators will be later projected into GIS mapping database to help link the theoretical framework to the territorial/urban dimension of Cohesion Policy in an evolutionary perspective.

Theoretically, the TREnD project bridges 1) Resilience, perceived as an ongoing process of change rather than a recovery to a preexisting or new stable equilibrium state (Simmie and Martin, 2010), 2) Diversification, defined as a leverage of regional resilience to absorb shocks, and 3) Evolutionary Theory based on continuing and progressive socioeconomic change (Krugman, 1996). The logic is, based on the evolutionary theory. Socioeconomic change is in essence an evolution process whereby regions increase their capacities to mobilize resources and knowledge in adapting to their changing socioeconomic environments (Sanderson, 2015). To effectively respond to crises and shocks engendered by the ongoing structural change across the EU and transform crises and shocks into opportunities, the regional capabilities in triggering, implementing and managing Transition Management (TM) strategies need to be reinforced by diversifying regional economies. TM therefore can be conceived as a medium for Entrepreneurial Discovery Process (EDP) by deepening the understanding of S3 in shaping the policies for regional economic development. What is crucial in developing transition agendas, it is critical, mutatis mutandis, in the diversification process, for regions to harness opportunities while absorbing shocks, thereby driving "resilience-building" processes. All in all, the TREnD project puts forward an evolutionary development concept that integrates transition management and resilience building in various territorial contexts towards a reforming process of the post-2020 Cohesion Policy.

The TREnD theoretical framework envisions the TM strategies as "co-evolving processes which progressively build up toward a revolutionary change on the long term" (Rotmans et al. 2001, Frantzeskaki & de Haan, 2009, Loorbach 2010). Originally adopted as a strategy to manage the "transition" towards a more environmental-friendly development model (e.g. decarbonisation, reducing emissions, etc.) in cities and regions, TM is adopted within the scope of this research project as a tailored approach to drive the diversification through the resilience-building process. In this backdrop, the regional economic resilience is conceived as "the ability of a region or urban system to change its structure and function rapidly and successfully in response to a shock" (Simmie and Martin, 2010). This definition marks a theoretical progress, as resilience is popularly perceived as the "capacity of a systems to retain its organisational structure following perturbation of some state variable from a given value" (Perrings, 1994, p. 30). Simmie and Martin (2010) have the merit to embed an evolutionary perspective in the realm of resilience. They define "adaptation" and "adaptability" as two key concepts:

> Adaptation refers to the adaptive capacity of regions within their own strong specializations and established paths. This so-called "positive lock-in" brings benefits to a region in terms of positive local externalities, but is perceived to undermine the "adaptability" of a region simultaneously: the prime focus on adaptation and reproduction of existing local structures

> would negatively affect the ability of regions to develop new pathways. This "negative lock-in" may arise due to a lack of potential local sources of recombination but also because of myopia, inward-looking local networks, institutional lock-in, and sunk costs. (Xiao et al. 2017, p. 17)

The rationale behind TM aims at adjusting and adapting towards long-term solutions and defines it as "a form of intelligent long-term planning through small steps based on learning and experimenting" (Rotmans and Loorbach, 2010). By deploying an explorative and design-oriented approach, the TM moves at the crossing of complex systems with governance. It tends to generate participative co-evolution processes towards triggering broader scale innovations through small-scale actions. However, its complexity lies in the multiple domains, scales and levels at which transitions occur. In compliance with a cooperative ethos, the TM approach aims at engaging different actors in the context of policy making. In the EDP process likewise, the so-called "front runners" (individuals, companies, local governments) are considered catalysts for supporting the transition process by spreading in wider circles a shift in mind-set labelled as "transition visions". Those front-runners are invited to take part in the "transition arenas" where stakeholders intervene upon a multilevel networks logic. In the early phase, the arenas are entitled to develop transition agendas (strategies and tactics) according to common beliefs shared by smaller groups of participants. Afterwards, broadening participatory process, they set operational and reflexive activities under a cyclical framework. During each cycle, TM processes tend to contend with the regime assumed as "the dominant culture, structure and practice embodied by physical and immaterial infrastructures" (Loorbach, 2007) through four main steps of the cycle: pre-development, take-off, breakthrough and stabilization. TM processes generally take place under five phases (Table 3) (Frantzeskaki et al. 2011).

Table 3: Transition Management phases. Source: Frantzeskaki et al. (2011)

Phases	Key activities
1. Preparation & Exploration	A. Transition Team Formation B. Process Design C. System Analysis D. Actor analysis (long-list and short-list of relevant actors) incl. interviews E. Set up Monitoring framework
2. Problem structuring & Envisionaning	A. Transition Arena formation B. Participatory problem structuring C. Selection of key priorities D. Participatory vision building
3. Backcasting, Patways & Agenda Building	A. Participatory backcasting & definition of transition paths B. Formulation agenda and specific actions
4. Experimenting & Implementing	A. Dissemination of visions, pathways and agenda (transition narrative) B. Coalition forming & broadening the network
5. Monitoring & Evaluation	A. Participatory evaluation of method and content (process) B. Reflection on vision & strategy C. Monitoring interviews

TM processes tend to promote the emergence of niches defined as "potential sources of radical system changes (e.g. establishment of a new regime), TM aims to provide niche actors with the space and

resources for experimentation" (Rauschmayer et al. 2015). Consequently, "such niches protect radical innovations against market selection and institutional pressures from a regime and allow actors to learn about these novelties and their uses through experimentation" (Boschma et al. 2017).

Expected Results and Implications

Through a continuous refinement of the conceptual framework and assessment methodology for resilience building and evolutionary economy into a TM tailored-planning, the TREnD project will be able to correlate the theoretical approach stemming from the evolutionary economy topic with the necessity to give a practical explanation of resilience and transition in terms of indicators and metrics (Figure 2).

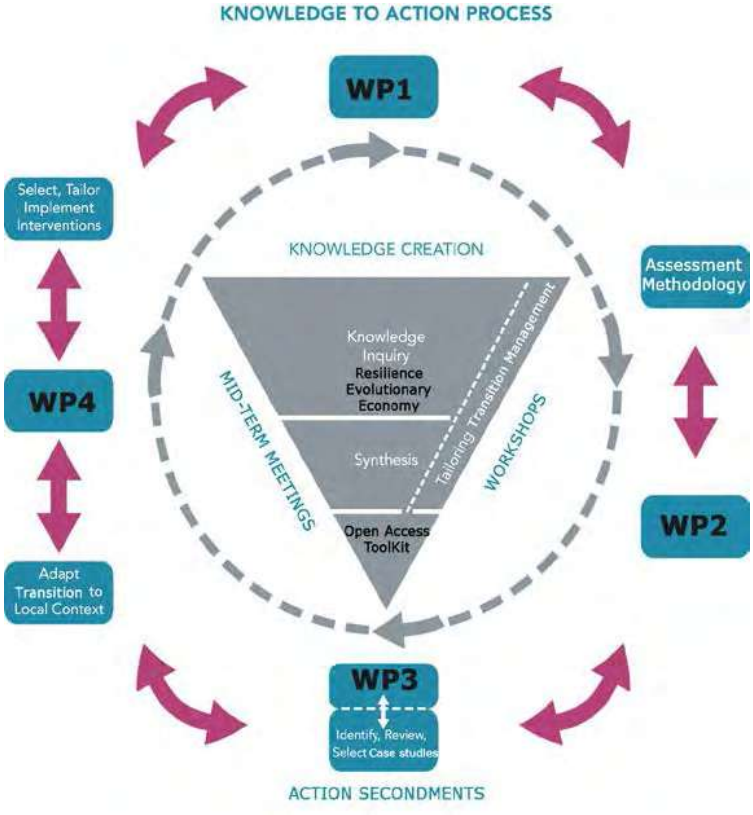

Figure 2: The work flow from knowledge generation to action. Source: The Authors.

The TREnD research project is first expected to produce a novel concept encompassing "resilience-building" processes and TM strategies based on the Evolutionary Economy's assumptions. Grounded in the data gained through retrospective longitudinal studies addressing ongoing trends and, in a broader time framework, past or current transition trends both in the EU and US, the framework will identify main challenges, hindrances and drivers of transitions and resilience-building processes. The characterization of regions will be defined with a set of socioeconomic indicators concerning the past development trajectories (e.g. path dependency) and the local degree to shift towards a related/unrelated diversification. In so doing, it will pave the way to pursue ground-breaking objectives, to be achieved through a rigorous and evidence-based empirical work. With an evolutionary perspective, the analysis will be based on retrospective longitudinal studies addressing ongoing trends and, in a broader time framework, past or current transition trends both in the EU and US.

Second, the TREnD project's theoretical framework is to be linked to the territorial/urban dimension of the Cohesion Policy in an evolutionary perspective. In so doing, it will help unveil the impacts of the territorial aspects in regard of resilience-building processes towards new equilibria, namely, new territorial development patterns and trajectories. Much emphasis is to be put on governance aspects regarding the resilience building process, including local networks, transition arenas, and role of external actors. Meanwhile, the place impact on the diversification process is to be gauged by means of spatial analyses.

Third, an evidence-based and users-oriented framework is to be created, based on the selected case studies, with respect to the spatial factors and governance affecting the opportunities to set up local "path-reshaping" processes. The window of locational opportunities (WLO) disclosed in the aftermath of shocks are to be fully exploited to design tailored TM by analysing case studies with the "backcasting" approach. This will lead to the provision of a set of evidence-based guidelines on how to transform external shocks into latent opportunities to re-orient local development trajectories.

In a certain way, the starting point in designing the innovative bridge between regional economic resilience with transition is to apply a local/urban perspective to disclose the forces able to drive the evolutionary development at regional level. Finally, the OpenAT is to be constructed based on the interpretation of end-user's feedback and information, and on this basis the metrics of TM are to be upgraded and the resilience building to be implemented and tested through the OpenAT.

Conclusions

In the post-2020 European Cohesion Policy, policy packages need to better integrated and coordinated and delivered at national, regional and local levels to curtail increasing regional disparities. Therefore, a strengthened multilevel governance conducive to a more reactive and responsive public administration is largely needed in a knowledge-based society. This is because, public intervention is important to increase higher impact R&I outputs, leverage more knowledge and ideas converting into products and services.

This high experimentalism endeavour by TM processes seems to fit well with the need of cities and regions to drive economic diversification and discover new development trajectories. However, the extremely adaptive nature of processes, the long-term period framework (minimum 25 years), and the large variety of variables affecting the strategies might constitute relevant flaws of the existing TM concepts. In fact, TM processes do not show explicitly "clear-cut objectives or normatively defined principles to steer the process of transition dynamics towards a more sustainable world" (Rauschmayer et al. 2015). Finally, taking stock of past experiences, the large scale systemic changes due to TM still seem questionable (Loorbach, 2010). These are all the gaps in the existing concepts concerning transition management to be filled by the upcoming research activities of the TREnD project.

The TREnD project focuses on the creation of an open access toolkit on the basis of an interactive platform which shares data with different users, policy makers and end-users. The objective of knowledge transfers into actions created by research activities will be used in order to provide new services for local communities of entrepreneurs, local policy-makers and public authorities. The project addresses a theoretical framework aimed to bridge regional economic resilience with

Transition Management in an evolutionary economic perspective. Including the evolutionary approach toward the discovery of "novelty" is proposed through a strategic endeavour to challenge the current regime to disclose "niche markets". In this view, the TREnD project will significantly contribute to the manifold literature streams which discuss the diversification upon the concept of related variety, relatedness, and niche/regime narratives. Unveiling the real forces/agents that at urban scale work in creating different forms of adaptation is supposed to reinforce the regional diversification towards an evolutionary dimension of Cohesion Policy.

Acknowledgements

This research work is part of the TREnD research project (Transition with Resilience for Evolutionary Development), which has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 823952.

References

Annesi, N., Rizzo, A. and Scamporrino, M., 2018, Post-disaster dynamics in inner areas. An Italian hypothesis for transition management. *Geographies of the Anthropocene*, 141, 141-158.

Bachtler, J., Martins, J.O., Wostner, P. and Zuber, P., 2017. Towards Cohesion Policy 4.0: Structural Transformation and Inclusive Growth (Brussels: Regional Studies Association). Retrieved from *https://3ftfah3bhjub3knerv1hneul-wpengine.netdna-ssl.com/wp-content/uploads/2018/08/RSA_Report_Web_22-6-17.pdf*, accessed on 29 May 2019.

Bevilacqua, C., Provenzano, V., Pizzimenti, P. and Maione, C., 2017, Smart specialisation strategy: the territorial dimension of research and innovation regional policies. In: *Conference Proceedings of International Research Week Conference (Salford: University of Salford),* 993-1003.

Boschma, R., 2005, Proximity and innovation: a critical assessment. *Regional Studies,* 39(1), 61-74.

Boschma, R., 2015, Towards an evolutionary perspective on regional resilience. *Regional Studies,* 49(5), 733-751.

Boschma, R., Coenen, L., Frenken, K. and Truffer, B., 2017, Towards a theory of regional diversification: combining insights from Evolutionary Economic Geography and Transition Studies. *Regional Studies,* 51(1), 31-45.

Capello, R. and Lenzi, C., 2018, Regional innovation patterns from an evolutionary perspective. *Regional Studies*, 52(2), 159-171.

Foray, D., David, P.A., & Hall, B. H., 2011, Smart specialization. From academic idea to political instrument, the surprising career of a concept and the difficulties involved in its implementation. *MTEI-working_paper-2011-001*, 1-16.

Fornahl, D. & Hassink R., 2017, *The Life Cycle of Clusters A Policy Perspective* Edward Elgar Publisher.

Frantzeskaki, N. and de Haan, H., 2009, Transitions: Two steps from theory to policy. *Futures*, 41(9), 593-606.

Frantzeskaki, N., Henneman, P., Loorbach, D., Roorda, C., van Steenbergen, F. and Wittmayer, J., 2011, *Urban transition management manual. Navigator of the MUSIC project. DRIFT (Dutch Research Institute for Transitions, Rotterdam, the Netherlands.* Retrieved from <www. themusicproject.eu>, accessed on 19 May 2019.

Frenken, K., Van Oort, F. and Verburg, T., 2007, Related variety, unrelated variety and regional economic growth. *Regional Studies*, 41(5), 685-697.

Kakderi, C. & Tasopoulou, A. (2017). Regional economic resilience: the role of national and regional policies. *European Planning Studies, 25*(8), 1435-1453.

Krugman, P.,1996, What economists can learn from evolutionary theorists. *A talk given to the European Association for Evolutionary Political Economy - http://web.mit.edu/krugman/www/evolute.ht*ml.

Loorbach, D., 2007, Transition management. New mode of governance for sustainable development. PhD thesis, Erasmus Universiteit Rotterdam.

Loorbach, D., 2010, Transition management for sustainable development: a prescriptive, complexity-based governance framework. Governance, 23(1), 161-183.

Martin, R. (2011). Regional economic resilience, hysteresis and recessionary shocks. *Journal of economic geography*, 12(1), 1-32.

Neffke, F., Henning, M. and Boschma, R., 2011, How do regions diversify over time? Industry relatedness and the development of new growth paths in regions. *Economic Geography, 87(3)*, 237-265.

Perrings, C., 1994, Ecological resilience in the sustainability of economic development. In: *Discussion Papers in Environmental Economics and Environmental Managemen*t (York: The University of York), 1-17.

Pike, A., Dawley, S., & Tomaney, J., 2010, Resilience, adaptation and adaptability. *Cambridge journal of regions, economy and society*, *3*(1), 59-70.

Porter, M. E. (1990). *The competitive advantage of nations*. Harvard Business Review, 73-91.

Pronestì, G. & Bevilacqua C., 2018, The Life Cycle of Clusters: A New Perspective on the Implementation of S3. *ISHT 2018. Smart Innovation, Systems and Technologies, vol 100. Springer, Cham,* 215-225.

Rauschmayer, F., Bauler, T. and Schäpke, N., 2015, Towards a thick understanding of sustainability transitions — Linking transition management, capabilities and social practices. Ecological Economics, 109, 211-221.

Rotmans, J. and Loorbach, D., 2010, Towards a better understanding of transitions and their governance: a systemic and reflexive approach, 105-220. In: J. Grin, J. Rotmans and J. Schot (eds.) Transitions to Sustainable Development. New Directions in the Study of Long Term Transformative Change, (New York and London: Routledge).

Rotmans, J., Kemp, R. and Van Asselt, M., 2001, More evolution than revolution: transition management in public policy. Foresight, 3(1), 15-31.

Sanderson, S. K., 2015, Evolutionism and Its Critics: Deconstructing and Reconstructing an Evolutionary Interpretation of Human Society (Oxon and New York: Routledge).

Simmie, J. and Martin, R., 2010, The economic resilience of regions: towards an evolutionary approach. Cambridge Journal of Regions, Economy and Society, 3(1), 27-43.

Xiao, J., Boschma, R. and Andersson, M., 2017, Resilience in the European Union: the effect of the 2008 crisis on the ability of regions in Europe to develop new industrial specializations. Industrial and Corporate Change, 27(1), 15-47.