



## RIS3CAT 2021-2027 and transformative innovation policy – Tatiana Fernández and Alberto Pezzi

Promoting sustainable and inclusive development pathways to overcome the COVID 19 crisis

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The COVID-19 crisis poses key questions as to what lessons will be learnt and, above all, what will need to change in order to promote sustainable and inclusive development pathways aligned with the Sustainable Development Goals (SDGs).

The latter is a relevant question when it

comes to developing the Research and Innovation Strategy for the Smart Specialisation of Catalonia 2021-2027 (hereafter, RIS3CAT 2021-2027). RIS3CAT 2021-2027 is a transformative research and innovation agenda, co-financed by European funds, the main objective of which is to mobilise the

efforts of the Catalan research and innovation ecosystem to respond to the major social and environmental challenges that face the region. Meeting these challenges, which are set out in the 2030 Agenda, requires in-depth discussions about transformations at three levels: the economic system, social relations and the relationship between people and the natural environment.

Conceptually, RIS3CAT 2021-2027 is inspired by the theoretical framework of **transformative innovation policy**, promoted by the **Transformative Innovation Policy Consortium** (hereafter, TIPC), by the need for **responsible research and innovation**, and by the concept of **shared value** proposed by Porter and Kramer.

This article focuses on the conceptual framework for transformative innovation policy, which places social and environmental challenges at the centre of both public policies and – especially – research and innovation policies. The main goal of transformative innovation policy is to promote in-depth transformations in socio-technical systems; that is to say, changes in the rules, regulations, technologies, practices, user preferences, infrastructure and cultural expectations that govern how the basic services of a modern society (energy, clean water, housing, healthcare, transport and food) are produced and supplied. These socio-technical systems first emerged with very little regard to the negative environmental consequences they generate and, in many cases, the social damage they also cause. The consequence of this is that new sustainable pathways need to be constructed for these socio-technical systems, including the exploitation of terrestrial and marine natural resources.

Efforts to promote innovation should focus, not on optimisation, but on transformation. Public research and innovation policies should promote transformations that can generate radical new alternatives to current practices and systems. Although these alternatives may not be seen as feasible in the short term, sustained investment in transformative niches such as, for example, occurred in solar and wind power in the past, can lead the way towards new, more sustainable and inclusive practices that transform unsustainable current systems.

Policy experimentation lies at the heart of transformative innovation policy: it enables the creation and testing of alternative practices that can enter into competition with prevailing practices and generate new capacities and processes so that these new practices can replace the former ones. Experimentation enables actors in a territory (government, academia, business and civil society) to collectively determine which public policies, which technologies and which processes are best suited to providing just, sustainable responses to shared challenges. It is important, then, to ensure that transformative innovation policy promotes the creation of spaces for experimentation.

Transitions and experiments begin in spaces at the local level: the actors at this level know each other and share problems, so it is easy for them also to share visions and propose solutions. However, for these experiments to be truly transformative, they need to be multi-scalar. Because transformative changes often require new regulatory and institutional frameworks, as well as coordination and coherence between policies and fields of knowledge, experiments need to connect with other local, regional, state and European initiatives and strategies. It is also essential for experiments to combine projects launched by associations or small producers with more technological projects led by companies and research and technology centres. Here, government has a key role to play in promoting:

- The identification of niches with transformative potential in areas such as food and drink production and consumption, renewable energy, and mobility.
- Spaces for experimentation, where prototypes and demonstrators can be constructed using alternative technologies aimed at resolving specific challenges.
- Networks of innovative communities that experiment with the aim of generating new social practices (forms of consumption, energy use, relationship with the natural environment, etc.).
- Spaces, whether virtual or physical, to disseminate these new practices and explain the scientific knowledge and technology that support them.
- Forums to debate the possible effects on the environment and on people of emerging technologies and economic activities. Here, the aims are to determine which options generate the most benefits for society and to prioritise these options.
- Instruments to finance transformations.
- New narratives, tools and spaces to enable the alignment and generation of synergies, complementarities and learning among all initiatives that address the same challenge.
- Participatory evaluation systems focused on strategic learning and medium- and long-term transformation processes, and based on a theory of change (such as the formative evaluation models promoted by the TIPC).

In this framework, RIS3CAT 2021-2027 will promote, in Catalonia, shared research and innovation agendas that contribute to the green economy, improving people's quality of life, enhancing the industrial transition and transforming production and consumption models to make them more sustainable and inclusive.

In summary, RIS3CAT 2021-2027 aims to address the major structural challenges that face our society through a methodology based on **shared agendas**. This is an innovative methodology, based on various experimental projects for shared agendas articulated from the bottom up with the participation of the Catalan Government, local authorities, universities and other players in the region, and in cooperation with other European regions and experts from the TIPC and the European Commission's Joint Research Centre.

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