SUSTAINABILITY SCIENCE

UNDERSTAND, CO-CONSTRUCT, TRANSFORM
Volume 3

Collective thinking coordinated
by Olivier Dangles, Marie-Lise Sabrié and Claire Fréour

IRD Editions

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French National Research Institute for Sustainable Development
Marseille, 2024

Editorial coordinator: Corinne Lavagne
Editorial preparation: Jasmine Portal-Cabanel
Cover, design and layout: Charlotte Devanz

Cover photo: Rock painting, Cueva de las Manos, Argentina.
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ISBN PDF: 978-2-7099-3041-3

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Transformative territorial science: the example of the "Zone Atelier" network

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Background

In a world grappling with what Nancy Fraser calls the "non-choice" between adaptation to globalisation and the socioenvironmental damage it wreaks and the temptation to look inwards gaining ground in many parts of the world (not least in the guise of growing populism), transformation should be at the forefront of our minds. Given its association with ideas of development and progress, science can ill afford to shirk its responsibility to find ways out of this unsustainable state of affairs, which is threatening to make our planet uninhabitable. But how do we actually put these transformations into practice in our territories?

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Further reading

https://www.inee.cnrs.fr/fr/zones-ateliers

Oreskes N. et Conway E. M., 2014 – *Les marchands de doute*. Paris, Le Pommier.

Paasche Ö. et Österblom H., 2019 – Unsustainable science. *One Earth*, 1: 39-42.

Polanyi K., 2009 [1944] – *La grande transformation. Aux origines politiques et économiques de notre temps*. Paris, Gallimard.

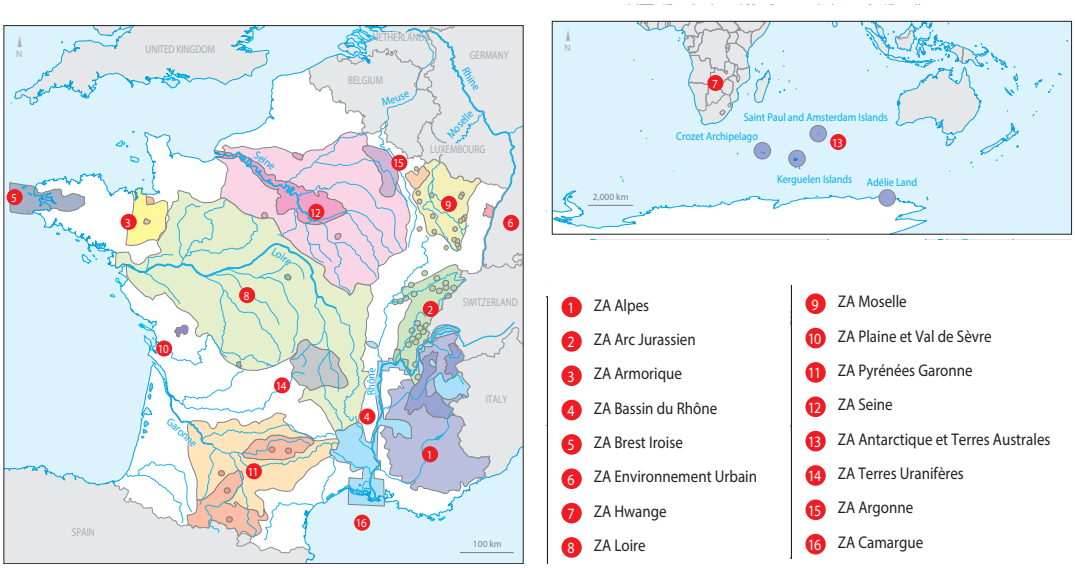
Schneidewind U. *et al.*, 2016 – *Handbook on sustainability transition and sustainable peace*: 123-136.

The 'transformative science' dimension of sustainability science

Sustainability science first emerged as a concept in the early 2000s, and is supposed to generate knowledge for the advancement of sustainable development. But development, as per the current definition framed in terms of growth and GDP, is by no means sustainable: neither socially nor environmentally. Even when growth is dressed up as being "green" or "blue," it is leading us down an unsustainable path. Adaptation will obviously be necessary over the coming decade, in order to soften the blow of the shocks yet to come, but adaptation alone will not suffice. A new "great transformation" will be absolutely necessary to limit the scale and frequency of the social and environmental disasters which are threatening the very liveability of our planet. One branch of sustainability science has taken transformation to heart, championing joint research with territorial actors, training and institutional innovation. The idea of "transformative science" represents a major turning point in the history of science, and raises many questions as to how science and society, and society and politics, can interface effectively. The issue of scientists' individual positioning is of clear significance. The aim of this short contribution is to explain how a research infrastructure - namely the Zone Atelier Network (RZA, CNRS - Ecology & Environment) - is positioning itself within this field, taking concrete action to bring about transformation on multiple levels.

The Zone Atelier network as a field study in the philosophy and action of transformation

A Zone Atelier (French for "workshop zone," often abbreviated to ZA) is a co-research initiative involving researchers and territorial actors, who join forces to better understand - from a territorially rooted and long-term perspective - the workings and evolution of socio-ecosystems, and thus to help these territories with their sustainable transformation. There are currently fifteen such zones. They are used to develop and test new approaches designed to improve and facilitate interdisciplinary research, particularly research combining input from earth and life science and human and social sciences, not to forget engineering sciences. They also serve to develop and test methods for facilitating joint research involving higher education and research professionals working in partnership with different types of actors and territorial stakeholders (managers, local authorities, SMEs, non-profit organisations, other sectors of education). The central hypothesis underpinning ZA networks is that the co-production of knowledge is a necessary condition (albeit not a sufficient condition) for improving and transforming public policy on matters of sustainability. To test this hypothesis, ZA networks set up experiments enabling territorial stakeholders and academic researchers to collectively re-engage with the major issues facing the territory, to explore potential solutions and to make potentially transformative proposals while working to strengthen capacities and individual and social action capabilities. The goal is to work with actors to galvanise changes in praxis and observe the medium and long-term



Map of the 16 ZA areas, spread across mainland France as well as the sub-Antarctic islands and Zimbabwe. A ZA is always structured around a particular functional unit, such as a major river, mountain range, agricultural plain or city. Three new ZA projects are currently in the construction phase in Camargue, French Guiana and French Polynesia

(Courtesy of Réseau des zones ateliers/M.-N. Pons).

consequences for the environment, as well as the economic, social, political and legal ramifications. The advantage of working as part of a network is that it allows for a more systemic transformative perspective. That begins with the sharing of methodologies, working in an inter- or transdisciplinary fashion, testing the methods in cross-cutting projects involving multiple ZAs. This may also involve pooling a certain number of the services required by the scientific community (e.g. inter- or transdisciplinary methodologies) and territorial stakeholders (e.g. reinforcing capacities, decision-making etc.). Naturally, this also includes the coordination of multiple experiments conducted by the ZAs, which are always situated but which must be connected in order to foster "joined-up learning" and disseminate its benefits. This is not so much about "upscaling" as it is about learning to capitalise on the diverse array of situations which are within reach when working as part of a network, adopting comparative approaches or testing hypotheses at different points on the gradients (climate, anthropization, record of joint research etc.).

Implications for social, educational and institutional innovation

• The concept of innovation is of crucial importance to the science of transformations, and far transcends technological innovation: the latter alone will not suffice to get us out of our current predicament. Innovation is also required in the social sphere, for example through the development of third places allowing for the

encounters and interactions, shifts in perspective, decentring and relations of care required for inter- and transdisciplinary approaches to work. Innovation must also incorporate an educational dimension, not only to convey the complexities of socio-ecosystems, but also to develop different ways of approaching them. Above all, innovation must be institutional, in order to facilitate all of the necessary accompanying forms of transversality. Quite aside from the urgent need to break our institutions out of their organisational silos, the problem of working in inter and transdisciplinary mode - of such vital importance in this age of division, misinformation and fabricated ignorance - is that it takes a lot of time, a resource which is in short supply for everybody these days. But behind this "time shortage" so astutely described by sociologist Hartmut Rosa, a political dimension lurks: acceleration and its social and cultural determinants, the competition and techno-solutionism whose reach now extends to research. If research, too, falls prey to the acceleration, it becomes increasingly incapable of grasping the complexity of socio-ecosystems, the pernicious problems we must all face at both the local and the global levels. To be capable of stimulating and/or supporting genuine territorial transformations, research itself needs to be transformed; not only in terms of its practices, but also with regard to its objectives and, above all, the ways in which it is assessed and funded. This is not to say that everybody must be "forced" to take this direction, but rather that those who wish to do so should be provided with the necessary opportunities, as early as possible in their academic careers. The timing is opportune: the dilemma of the environmental footprint of research is a major incentive to take our time (in the spirit of "slow science"), to rethink both our working practices and the deeper meaning of our research work, considering what defines quality in this context of climate emergency. We all have responsibilities to take (https://labos1point5.org/les-textes-positionnement/ResponsabiliteESR#textecollectif). Time is of the essence, and the ZA network will be working hard over the coming months and years, in close collaboration with our partners, on the ground as well as at national level.

KEY POINTS

The development of transformative approaches with a systemic dimension requires a combination of actions and reflections at different levels. Joint research with territorial actors - necessary, and necessarily situated - can expand our idea of innovation to embrace social, educational and institutional dimensions. This has implications for the meaning attached to our work, and for the way that the research and education world is run - a profound overhaul which is urgently needed. The question of the role of science in society must be at the heart of this process, as well as the ways in which research is funded, conducted and evaluated.