Preface

The issue of the localization and territorial organization of economic activities and, in particular, innovative activities, was central to numerous studies in the 1990s. Based on notions of competitiveness and attractiveness, these studies, and in particular those centred on innovative milieus, showed the importance of the territorial dynamics of actors and in particular of their capacity to generate specific resources (particularly knowledge) needed for innovation.

Such territorial dynamics and, more particularly, the role of innovative milieus and associated actors are today being questioned in light of developments in the context of globalization as well as the growing issues of sustainable development. Several underlying hypotheses of territorial innovation models¹ such as innovative milieus, industrial districts, clusters, local production systems and so on, are being challenged, which questions their explanation capacity. For instance, economic innovation is increasingly based on resources that have traditionally been thought of as 'extra-economic'. While technological innovation remains important (particularly in the field of green industries), controlling the symbolic dimension of production, including the aesthetic quality of products, and associated multi-media content, now appears to be fundamental to economic value creation (Jeannerat, 2013).

Innovation tends also today to incorporate various dimensions including those related to 'sustainability' (economic/technological, social, governance/civic participation, cultural and aesthetic/symbolic dimensions). The panel of actors of the innovation therefore includes more and more consumers, users, inhabitants, civil society, and so on, overcoming the canonical triptych of local firms, research centres and public institutions. While the economically based principle of territorial competition continues to increase the mobility of resources (knowledge in particular) and goods, new expectations associated with sustainable development are currently emerging. Promoting new forms of economic spatial organization, these models show greater consideration for the environment, social conditions and the 'local' (life quality, short supply chains, reduction of carbon emissions, circular economy, and so on), sometimes even at the expense of economic efficiency.

This book's objective is to highlight the articulation between sustainable development and the territory, and in particular to identify the relationship that such innovations (re)build (or not) with the territory. Conversely, it aims at rethinking milieus in light of current sustainability requirements. The book is based on the results of a research project carried out in line with former works undertaken by the European Research Group on Innovative Milieus (GREMI). The research was supported by the Plan Urbanisme Construction Architecture (PUCA), French Ministry of Ecology, Sustainable Development and Energy, within the project on 'Anchoring, Sustainability and Localisation of Innovation: Towards New Forms of Territorialisation of Economic Activities' (ASLIInn) which was realized between 2010 and 2013. Ten European and Asian teams contributed with 12 case studies of 'sustainable innovations' that means innovations that were self-claimed by the actors promoting them as contributing to sustainable development.² In this sense we have not set an a priori definition of sustainability, the purpose being to understand how economic actors are currently appropriating this issue, incorporating it into their practices and thereby eventually changing the forms of productive organization.

These innovations are: the photovoltaic industry and green finance solutions in Switzerland (Livi et al., Chapter 1); innovation in sustainable renovation in Paris (Kebir, Chapter 2); innovation in knowledge-intensive business services (KIBS) in Munich green construction, Germany (Strambach and Lindner, Chapter 3); the PlanIT Valley smart city project in North Portugal (Carvalho et al., Chapter 4); a water cluster project in Leeuwarden, the Netherlands (Ebbekink and Lagendijk, Chapter 5); urban governance and planning solutions in Bairro Alto, Portugal (Costa, Chapter 6); short food supply chains projects in Rome, Italy (De Rosa and Trabalzi, Chapter 7); sustainable innovation in tourist resorts in the French North Alps (Peyrache-Gadeau et al., Chapter 8); developments in the metal industry associated with regional economic specialization pattern reconfiguration in the Basque Country (Del Castillo et al., Chapter 9); common strategy in the nautical industry in the Atlantic region in France (Guesnier, Chapter 10); and developments in the machine industry, supported in governance mechanisms changes, in Suwa, Japan (Sato and Okamoto, Chapter 11).

The book starts with the 'Introduction: sustainability, innovative milieus and territorial development', written by Kebir, Peyrache-Gadeau, Crevoisier and Costa. It presents a synthesis of the results of the research and in particular the typology of sustainable innovation dimensions. This typology articulates the innovation process and its relationship to the territory. Four patterns of sustainable innovation are described.

Firstly, product innovation (production of products seen as favourable to sustainable development) are generated by anchoring milieus, that is, milieus articulating intensely both local cumulative and distant combinatorial dynamics. Secondly, institutional innovations (institutional arrangement favourable to sustainable development such as regional development strategy involving sustainability objectives) rely on classical innovative milieu, operating for collective coherence building at various institutional scales. Thirdly, territory innovations (development of projects aiming at improving local services and amenities) are developed within milieus gathering various types of actors, particularly municipalities and structured around multifunctional projects often related also to quality of life. Lastly, flagship innovations (projects with very strong experimentation and demonstration content such as the PlanetSolar boat) have multi-local anchoring and can connect in unexpected remote areas.

The book is then structured in three parts. Part I, ‘Sustainable Innovation, Global Anchoring of Territorial Productive Systems and Competitiveness’, questions the way sustainable development (products or demonstration innovation) oriented towards global competitiveness organize in space and relate to the territory. Part II, ‘Sustainable Innovation Towards an Integrated Territorial Development’, focuses on territory innovation, that is, local forms of innovation articulating both economic and life quality development objectives. Relying on innovative milieus gathering firms, local institutions and civil society, these innovation dynamics that structure around sometimes everyday life issues deserve attention as they appear to underpin local development dynamics. Part III of the book, ‘Sustainable Innovation, Economic Restructuring and Regional Productive Systems’ analyses the way sustainable development can as a broad regional objective crystallize conversion and restructuring dynamics. Led by ‘classical’ innovative milieus, these institutional innovations consist in reinforcing local productive capacities through the definition of sectorial or regional development strategies.

Chapter 1 by Livi, Araujo and Crevoisier, ‘The territories of “sustainable” innovation: from local milieus to “responsible” communication – the case of photovoltaics and sustainable finance in Western Switzerland’, shows how sustainable innovation mobilizes both traditional resources, while making intense use of natural resources for cultural and symbolic purposes. Focusing on media ‘buzz’, innovators play intensely with the values of commitment and responsibility that characterize sustainable innovations. The ability to manage these symbolic dimensions and the legitimacy process, held by an enlarged innovative milieu, appears as

central in sustainable innovations. The chapter also shows how the production system is today integrated into long-distance value chains. The traditional model innovative milieu has been replaced, in the cases studied, by the insertion of local production activities and consumption closely related to medium- to long-distance interactions; that is, by an anchoring milieu.

Chapter 2 by Kebir, 'Innovation in the sustainable renovation sector in Île-de-France', shows how a sector which is urged to improve the sustainability performance of its goods and services operates. On the one hand, mainstream building retrofitting operations aim principally at increasing energy performance in order to meet the requirements of public authorities (policy and legal push). On the other hand, other types of projects, led by actors (contractor, architects), are more involved in sustainability and seeking exemplarity. The symbolic dimension is here very important and structuring. New techniques or solutions are more likely to be tested and experimented with. In terms of spatial organization, innovation is undertaken mainly by local innovation networks. Nevertheless, distant relations are very important to access leading-edge knowledge (notably, technical knowledge).

In Chapter 3, 'Border-crossing sustainable innovation processes: German knowledge-intensive business services (KIBS) in green construction', Strambach and Lindner analyse the realization of the Chenshan Botanical Garden in Shanghai, a Sino-German sustainable innovation process in green construction. They show how sustainable innovation processes are closely related to the institutional and cultural context in which they occur. The aim of the chapter is to contribute conceptually and empirically to a deeper understanding of the relationship between knowledge dynamics and sustainable innovation processes in international contexts. It focuses on the territorial shaping of knowledge dynamics and the emergence of new organizational forms.

In Chapter 4, 'Living PlanIT and the development of the "PlanIT Urban Operating SystemTM": the geographies of an innovation', Carvalho, Plácido Santos and Vale explore the development of the Urban Operating System, a complex software platform designed to link a city's sub-systems (for example, the built environment, transportation) towards manifold efficiency gains as 'sustainability'. They question the spatial and organizational context of the proponent company: the 'born global' start-up Living PlanIT, based in the north of Portugal. Despite the codification of the core technology, the chapter illustrates how the interaction with different milieus provided (and keeps providing) unique resources for the technology's development, commercialization and societal legitimization.

Ebbekink and Lagendijk propose in Chapter 5, ‘The sustainable water campus in Leeuwarden: towards an anchoring milieu or a “hollow term”?’, to assess the development of the water campus and the water technology cluster in Leeuwarden (the Netherlands) from the perspective of innovative milieus. In doing so, they question the nexus between cluster policies and ambitions to boost a city’s international competitive position. They focus on the aspect of anchoring, and in particular on ‘relational assets’, ‘club goods’, ‘strategic intelligence’ and ‘policy leverage’. Furthermore, Ebbekink and Lagendijk show the importance of engagement of civic entrepreneurs.

In Chapter 6, ‘Bairro Alto revisited: sustainable innovations, reputation building and urban development’, Costa opens Part II of the book by shedding light on the role of sustainable innovation in urban development through the analysis of the case of the cultural and creative district of Bairro Alto, in Lisbon, Portugal. Sustainable innovations in the area are studied as well as the way they can be mobilized to promote urban vitality and urban sustainable quality of life in the city centre. Particular attention is given to the reputation building mechanisms and to the importance of symbolic assets in these processes, challenging the more traditional approaches to urban sustainable development processes and the concept of innovative milieu.

De Rosa and Trabalzi address, in Chapter 7, ‘Innovative rural networks in Rome’, two new food producers–consumers networks in Rome, the so-called Zero-Km initiative and the Elementary School Meal Program. These two cases of innovative networks were created by small farmers to exploit the economic potential of new consumption patterns in large urban areas. The authors highlight that when coordination involves a smaller number of actors, the resulting action is efficient and the long-term sustainability is safe. However, when the network is made of multiple actors located at different institutional levels and geographical scales, the capacity for coordination is weaker if not absent, which makes the process and its sustainability more fragile.

In Chapter 8, ‘Innovation of sustainable tourism projects in Alpine resorts’, Peyrache-Gadeau, Rutter and Bélicard analyse four tourist resorts in the French Alps as innovative milieus that create the expertise required to address the potential challenges of climate change. This chapter first provides an explanation of the specific characteristics of these resorts with regard to sustainable tourism, their relative sensitivity and capacity to innovate. It then examines the innovative dimension of local solutions explored in the four study sites, and their ability to stimulate real change towards sustainable development for the local communities.

Del Castillo, Paton and Barroeta open Part III with Chapter 9, ‘The

great Basque transformation towards sustainable innovations'. They show how during the last 30 years, the Basque Country has experienced a phenomenon known as the 'Great Basque Competitive Transformation' by which the Basque region evolved from a mature and obsolete economic specialization pattern to one focused on high-tech and intensive knowledge activities where sustainability becomes one of the new emerging markets. The chapter analyses the case of the electric vehicle as one of the sustainable innovations resulting from this change. This transformation took place due to a progressive change in the context's conditions from a triple perspective (economic, social and environmental), where the role of public policy arose as an important feature.

In Chapter 10, 'Atlantic Nautical Network: an inter-regional organizational system to promote innovation in support of sustainable development', Guesnier presents the case of the Atlantic Nautical Network, a public interregional innovative initiative the objective of which is to support the transition towards sustainability of the Atlantic region's nautical industry. This strategy aims at the development of a new form of interregional governance and of territorial organization of the productive systems that articulates research, technology, know-how, skills and production. This chapter shows how sustainable development can foster transversal forms of coordination within the industry, from the research centre to the craft industry.

Sato and Okamoto present in Chapter 11, 'From regional production system to regional innovation system: evolutionary changes of Suwa industrial region in Japan', the regional development agency strategy implemented, in a context of restructuration, to enhance the emergence of a regional system of innovation promoting sustainable innovation. Based on the accumulated technology of the region, the objective of this strategy is to ease the knowledge flow between actors in the region and outside the region by enhancing the creation of networks. By studying this strategy, the authors show how the creation of a regional agency (beyond municipalities' frontiers), helps in creating coherence and milieu-like dynamics.

Camagni's 'Conclusion: relaunching GREMI – a scientific trajectory', ends this book by recalling the scientific trajectory of GREMI and explaining how contemporary issues related to sustainability creates new fields of inquiry. He explains how the reflexions are moving to an evolutionary socio-economic approach as individual demand shifts from material goods to immaterial, relational and positional goods, whose use value resides in mutual recognition and responsibility among people, in their symbolic content referring to sense of belonging to a community sharing behavioural habits and values. Camagni concludes by stating that

the milieu effect is back again, and it is conducive to new behavioural attitudes by the business community, to the emergence of original and cooperative organizational forms, and to the supply of novel relational goods.

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NOTES

1. Territorial innovation models as defined by Moulaert and Sekia (2003).
2. Sustainability is understood here as a social construct and appears here as territorially (and therefore institutionally) situated. Our work fits within the emerging urban geography literature on 'actually existing sustainabilities' (Evans and Jones, 2008; Krueger and Gibbs, 2007; Krueger and Agyeman, 2005).

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