Chapter 35

Research for sustainable development at ICIS: taking stock and looking ahead

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Abstract

This chapter reflects on the research presented in this book and presents the ICIS2020 Vision on research.

35.1 Taking stock

In the first chapter, we introduced the concept of sustainable development and concluded that it involved multiple dimensions, levels of scale and types of actors. Is this complexity reflected in the 33 chapters that follow, reporting on research conducted at ICIS? And are there clear patterns or focal points in the way ICIS has addressed this complexity?

We planned and organised the chapters of this book according to the various dimensions of sustainable development: environmental, social, economic, and institutional. In hindsight, the question arises whether this was such a good idea. Looking at the distribution of the chapters over the parts dedicated to different dimensions, it would seem that research at ICIS over the past years has been very unbalanced in this respect. The environmental part consists of only three chapters, the socio-economic part of ten chapters, the political-institutional part of eight chapters, and in addition there are 12 chapters with a primarily methodological focus in the part on knowledge production. However, it is precisely due to the complex nature of the sustainability problems addressed in these chapters that it was difficult to decide where to place them, as in most cases they concerned multiple dimensions. Purely looking at the research topics, a different picture emerges, and it appears that a broad, diverse range of issues has been covered, including environmental (climate, biodiversity, water, energy, food, forests), social (health, labour, religious and cultural diversity, education) and economic topics (social economy, certification, business models). The chapters also cover virtually all levels of scale, from the local to the global, and are fairly evenly distributed in this respect. The same applies to the actors studied, which include individual consumers, companies, village communities, local and provincial authorities, national governments and global, international organisations. In conclusion, the research presented in this book covers the various dimensions, levels of scale and types of actors involved in sustainable development issues without concentrating on a specific dimension, scale and/or actor.

In the introductory chapter we not only described how issues in sustainable development are characterised by a diversity of dimensions, scales and actors, but we also emphasised that these elements interact with each other in numerous ways. Nevertheless, none of the chapters in this book has attempted to address and integrate all these elements and interactions for the issue they study. So, where is the integrative nature of sustainability science found in research at ICIS? There are several reasons for the absence of fully integrated studies in this book. To combine a broad overview with accessibility, the chapters had to be short and readable for non-specialists. This means that often only small parts of much larger studies or research projects are presented, pieces of a much larger puzzle supposedly presenting “the whole picture”. However, this certainly does not apply to all chapters. ICIS has developed from a centre conducting integrative studies commissioned by external clients to a scientific institute conducting

research for sustainable development. In scientific research, the advancement of theories and methods is an important aim, and achieving this within the usual limitations of time and budget requires focus. The smaller the research project, e.g., an individual PhD thesis project, the narrower the focus must be, but even large projects with international consortia have a fairly narrow focus. This is not only for scientific reasons, but also because project proposals are written in response to well-defined calls from external funding agencies, focusing on specific topics (e.g., climate), scales (e.g., cities) and types of actors (e.g., urban planners). Despite this focus which arises out of necessity, the research contributions from ICIS are explicitly meant to be integrated with contributions from others in the quest for a more sustainable human society.

The wide variety of topics, levels of scale and types of actors addressed in the set of 33 research chapters may trigger another critical question: are there no focal points or unifying themes in research conducted at ICIS? Actually, there are. Not so much in terms of topics, scales or actors, but in the angles from which the issues are studied, the lenses through which focus is obtained. An external evaluation of research at ICIS about 10 years ago rated the productivity and relevance to society as very good and the research quality as good. The viability of the research programme was also rated as good, though at the same time as vulnerable due its relatively narrow focus on integrated assessment and its reliance on a very limited number of senior researchers. Since then, the senior staff has expanded and with them also the "knowledge domains" in research at ICIS, the scientific fields with distinct sets of theories, concepts, and methods which are used to obtain a better understanding of problems of sustainable development and to identify solution strategies. In addition to integrated assessment of sustainability issues (also known as "sustainability assessment"), two other knowledge domains can be distinguished in this collection of chapters, viz. innovation and governance. Whereas "assessment" is concerned with the production and integration of knowledge for sustainable development, "innovation" addresses the development and large-scale uptake of novel technologies, practices, and patterns of organisation in support of sustainable development, and "governance" deals with the establishment of policy arrangements, rules, regulations and agreements promoting sustainable development. From this point of view, about half of the chapters are in the "assessment" domain, dealing with methods, tools, or processes of knowledge production and integration, and the other half are in the "innovation" or "governance" domains. Again, a strict separation is difficult, because there are quite a few chapters in which these domains overlap.

35.2 Looking ahead

Although a pattern of three dominant "knowledge domains" can thus be distinguished in the research presented in this book, the overriding impression is nevertheless one of

very broad variety. Since the last external evaluation, research at ICIS has clearly diverged into many directions. For a relatively small group, largely dependent on external funding in an ever more competitive arena, it seemed time to opt for convergence in its research. In 2016, discussions and reflections considering past and recent successes, strengths and weaknesses in expertise, and developments in research, funding and societal needs, have resulted in an ICIS2020 Vision on research, which describes the characteristics of research at ICIS in 2020 (see Box 35.1). These characteristics can often be traced a long way back in the history of ICIS, but at the same time have become more pronounced in recent research projects. They include the three core knowledge domains of assessment, innovation, and governance for sustainable development, but also a participatory approach to research.

As introduced in Chapter 1, sustainability problems are not only complex but also of a normative nature. The consequence of complexity is that the knowledge that science can contribute will be subject to severe limitations. The consequence of normativity is that knowledge alone is not sufficient to determine what the problems are and how they should be solved. In an open and pluralist society it also means that the diversity of values and interests of stakeholders should be taken into account. Research for sustainable development should thus be mindful of the limits to scientific knowledge and the diversity of stakeholder perspectives. A way to do this is through a transdisciplinary approach, which involves collaboration between scientists from different knowledge domains and societal actors, such as NGOs, governments, and companies. The development of integrated knowledge (assessment), novel products and practices (innovation), and new policy arrangements (governance) is then co-produced by multiple actors, including scientific researchers. Examples of multi-actor collaboratives aiming at integrated co-creation of knowledge, innovations and policies are the Living Labs. The study and further development of such labs in urban contexts is addressed in two ongoing research projects at ICIS, Urb@Exp (www.urbanexp.eu) and SmarterLabs (smarterlabs.uni-graz.at) which both use an action research approach. In this approach researchers engage with other actors in real-life “experiments”, activities which are jointly planned, implemented, and evaluated. In sum, research for sustainable development at ICIS is expected to increasingly acquire the characteristics of a combined “assessment”, “innovation”, and “governance” focus, taking a participatory, transdisciplinary approach, often involving action research. The topics studied and sustainability problems addressed may vary according to the available expertise and funding opportunities, although a few dominant clusters can be discerned (Figure 35.1).

Box 35.1 ICIS2020 Vision: research at ICIS in 2020

A clear strength of ICIS research is its aim to combine academic excellence with societal relevance. Its orientation towards the broad field of sustainable development and its focus on policy makers and other stakeholders, contributes not only to the scientific

debate about major societal challenges (e.g., in journal articles), but specifically also wants to be of practical relevance to policy makers and other societal stakeholders (e.g., by means of reports, guidelines, and toolkits for end-users, often developed through processes of co-creation). Another strength of the institute is its interdisciplinary and transdisciplinary research tradition, leading to innovative cross-overs and mixed methods at the interface of different disciplines to address sustainable development problems. ICIS researchers have also become more experienced in transdisciplinary research into sustainable development problems, especially through action research in urban contexts with policy makers and other stakeholders.

ICIS' vision is that research, education, and joint learning provide a knowledge base for policy making and innovation in pursuit of sustainability. Through its research, the institute wants to contribute to knowledge development, innovation, and action, and in this way intends to support sustainable development in particular places and contexts, especially at local and regional levels, as a basis for global sustainability. Starting from this ambition and building on promising research efforts from recent years, ICIS has developed a research framework to be applied to a limited number of sustainability challenges. This has resulted in a research agenda for the institute that is set until 2020. The integrative research framework is based on three interrelated knowledge domains, namely Assessment, Innovation, and Governance for Sustainable Development (see figure 35.1).

– *Assessment for Sustainable Development*, or Sustainability Assessment, is concerned with processes, methods, and tools to develop and combine knowledge from various scientific disciplines and/or stakeholders about a sustainability issue, such that integrated insights are made available to decision makers. The goal is the production and integration of knowledge, in order to better understand and address a sustainable development problem.

– *Innovation for Sustainable Development* is concerned with transformations in technology, organisation or behavioural patterns in order to address a sustainable development problem, or encourage fundamental changes that prevent the emergence of new sustainability problems. The goal is to learn from experiments and to provide trajectories for upscaling.

– *Governance for Sustainable Development* deals with collective action for the common good and focuses on how sustainable development issues are perceived and taken up by different actors within governance systems. The goal is to clarify actors' positions and interests and their interdependencies in governance.

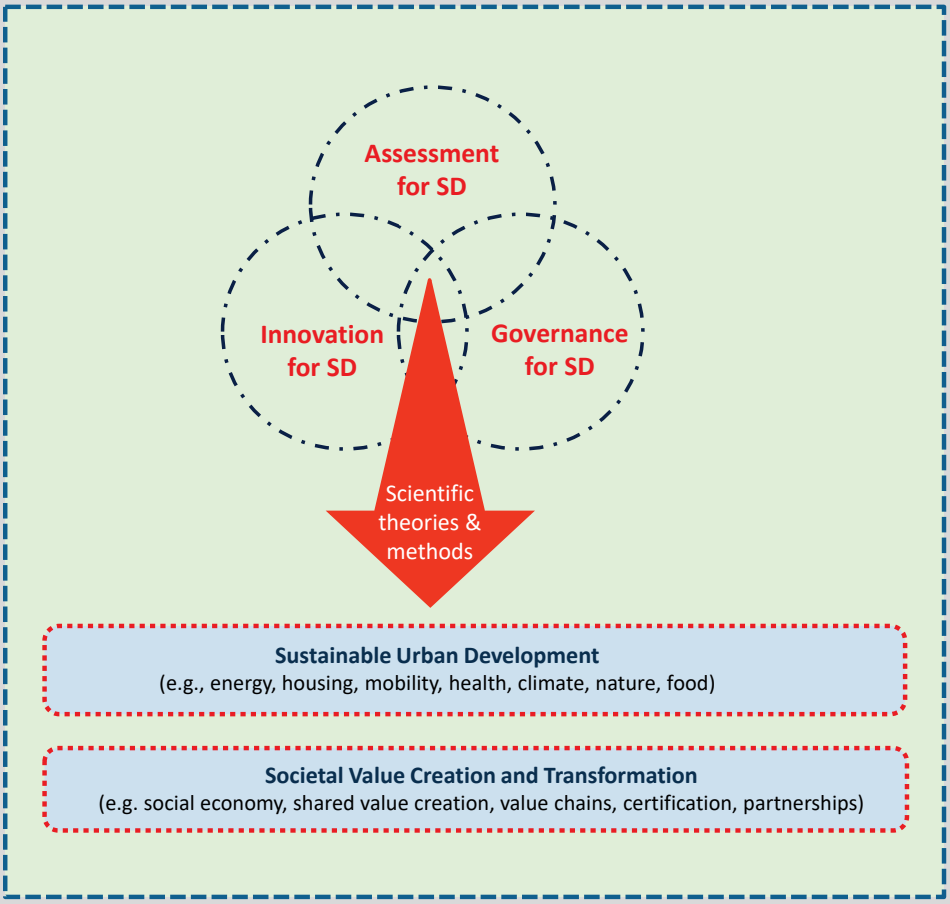

Figure 35.1 The ICIS research framework is based on three interrelated knowledge domains, which yield scientific theories and methods. These are applied – in co-creation with other actors – to societal challenges (e.g., Sustainable Urban Development, Societal Value Creation and Transformation).

By studying sustainable development challenges from these three domains or lenses in a coherent way, ICIS can contribute to problem structuring and analysis, can trigger innovative approaches, and can support policy making for sustainable development. In this way ICIS aims to span boundaries between science, policy, and society and support the capacity of public and private actors such as governments, businesses, NGOs, and citizens to steer development processes (e.g., urbanisation, technological change) into a more sustainable direction. Societal challenges currently being studied using this research framework are Sustainable Urban Development (e.g., energy, mobility, health), and Social Value Creation and Transformation (e.g., shared value creation, social economy, certification).