
Editorial: The Anthropocene turn in Knowledge-Based Development

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As we start the 2020s decade, we also enter a threshold that might be decisive for mankind to keep global temperature increase below a potential tipping point. The UN Environment Program (UNEP) has warned that global CO₂ emissions must fall by 7.6% every year through 2030 to maintain global temperature increase within a 1.5°C ceiling to avoid catastrophic consequences. This circumstance becomes a critical consideration for any program conceived under the broader scope of social, economic and cultural development.

Since about 50 years ago, the concept of development has been struggling with the viability of sustained growth. The very idea of progress and the ethos of modernity have been seriously questioned. Successive development paradigms were introduced during the last decades of the last century to balance the constraints of economic growth with an emphasis on other value dimensions such as quality of life, human development, subjective well being, sustainability, and discretionary time.

Knowledge-based development (KBD) has tried to provide a complete and consistent appraisal of value elements in a human activity system, in order to increase long-term viability. Knowledge here is regarded in its wider sense of intangible value (knowledge capital) as the most powerful leverage for development. The *International Journal of Knowledge-Based Development* has provided a global platform for publishing relevant research on theory and applications, particularly in the city-region domain, over the last decade. Models such as the knowledge city, capital systems, knowledge-based urban development, etc. have found in the IJKBD the prime source for scholars and practitioners in the field.

Enter the Anthropocene, a proposed geological epoch marked by human impact on Earth. It has served as an umbrella term for the several human-induced shifts in the state of the biosphere that are rapidly turning into existential risks, amongst which climate crisis is only the most widely known. Over the turn of the millennium, the mounting evidence and emerging perspectives on the scale and significance of the Global Existential Risks associated to The Anthropocene as well as the growing socio-economic dysfunctions at its bases became overwhelming. Thus, the possibility of exceeding the Planetary Boundaries able to sustain human life on Earth and causing a disruption to

the Biosphere on a geological scale, compounded by its economic and techno-political roots and impacts, has become by far the most prominent public issue of our days. The realities of the Anthropocene and the associated perspective of a new mass extinction severely compromising or even ending human existence constitutes an unprecedented ethical, scientific and cultural challenge at large. Hence, this journal becomes concerned with issues that, while continuing to involve knowledge and development, focus on specific aspects regarding human sense-making and adaptation throughout the Anthropocene.

The link between the role of knowledge in society and the Anthropocene has not been overseen. The annual *Knowledge Cities World Summit* has been a platform, particularly since 2016, to issues concerning Knowledge in the Anthropocene. Conversely, specialised publications such as the *Anthropocene Review* have carried papers related to diverse aspects of knowledge in society vis-à-vis the emerging epoch. Two major recent works underscore the current relevance of understanding the unprecedented dynamics of knowledge before the Climate Emergency: *The South Atlantic Quarterly* Special Issue on ‘Climate Change and the Production of Knowledge’ (Baucom and Omelsky, 2017) and the newly released book by Jürgen Renn *The Evolution of Knowledge – Rethinking Science for the Anthropocene* (Renn, 2020). At the urban level, some recent publications emphasise the lack of preparation of cities for facing the climate emergency and the need for a major overhaul of urban life. These include the Second Assessment Report of the Urban Climate Change Research Network: *Climate Change and Cities* (Rosenzweig et al., 2018), as well as the recent volumes by Dawson (2019), Caniglia et al. (2019) and the upcoming title by Allam et al. (2020).

Being the most critical moment in human history insofar we are facing an unprecedented existential risk for the species, every single aspect of contemporary culture is bound to be re-examined. Knowledge for development largely becomes Knowledge for the Anthropocene. Therefore, at IJKBD we will widen up our editorial focus to two lines that extend the journal’s identity. First, topics associated to the nature, production and distribution of knowledge in the Anthropocene (Knowledge for the Anthropocene). Second, topics related to the urban/regional tradition of IJKBD, in particular those related to urban capacities in confronting the realities of the Anthropocene as these unfold. What follows is a non-restrictive list of such topics.

- *Knowledge for the Anthropocene*. A more foundational perspective, looking at epistemic, social and behavioural science aspects of knowledge dynamics in the emerging epoch. Some aspects of interest include:
 - Nature of knowledge in the Anthropocene
 - Anthropocene literacy
 - Human response to the Anthropocene
 - Viable economic cultures
 - Epistemic Justice
 - Knowledge creation and transfer in the Anthropocene

- *Urban preparedness for climate crisis*. A technical perspective, looking at the level of preparation, in both consciousness and response capacity of cities, to face the Anthropocene. This might include:
 - Competencies for the climate emergency
 - Urban Transition and Regenerative Design
 - Deep Innovation
 - Preparedness indicators and benchmarking
 - Value practices
 - Capital Systems for the Urban Anthropocene.

It must be emphasised that these topics become of editorial relevance to IJKBD insofar these directly impinge upon Knowledge-Based Development. There are already several prominent journals dedicated to the Anthropocene and several others from subsidiary disciplines publishing related works. However, there are specific, often interdisciplinary, aspects of each of the two lines above that can best be approached from a developmental perspective on knowledge and urban life. While welcoming submissions in these two areas, the IJKBD will continue to serve the research topics traditionally published. In this way, this journal aims to contribute to increase awareness of the challenges of the Anthropocene and help cities to better deal with them.

Regarding the contents of issue 10(4), accepted papers provide a good sample of regular KBD topics, while some already hint at issues relating knowledge and the Anthropocene. First, the paper by Moreira et al. reports on the absorptive capacity generated by global pipelines at the San Francisco River Valley in Brazil. The case study made use of qualitative techniques and software-assisted content analysis with a focus on intra-cluster firm asymmetries, in order to formulate and test a series of hypothesis advancing the state of the question. Overall results indicate that while firms within the cluster under study effectively absorb knowledge generated by global pipelines, such absorptive capacity is asymmetric. This highlights the importance of managing cluster asymmetries at both, micro and macro-levels.

Next, the paper by Hu looks at smart work from the perspective of the sharing economy. The underlying study was concerned with how city planning could be informed by spatial smart work clustering in Canberra, taking into account both the benefits and disadvantages of digitally distributed work. Drawing on national statistics, urban mapping and a direct survey, the results suggest an integration of the smart work and sharing economy frameworks. While the sharing economy provides a spatial dimension, smart work adds a collaborative production perspective to the sharing economy. A critical appraisal of synergies and contradictions for sustainable urban planning opens up future research on wider environmental interdependencies of the knowledge economy.

The third paper by da Silva et al. deals with a characteristic KBD topic: the measurement and benchmarking of urban knowledge capital. In particular, this study carried out in Southern Brazil aims at designing and testing a satisfaction scale to appraise the citizens' perspective on the sustainability and smartness of their own cities. To this end, exploratory factor analysis, confirmatory factor analysis and discrimination analysis were conducted. Results suggest that citizens' satisfaction is mainly concerned

with health and safety, well-being, recreation, public transport, walkability, social inclusion and participation, primary services, city attachment, and the environment.

Finally, the paper by Al-Kfairy et al. continues with a consistent line of contributions on modelling aspects of innovation, SMEs and business clusters. In this work, the authors deal with factors contributing to growth of knowledge-intensive firms in Mjärdevi Science Park (MSP) at Linköping, Sweden. They implemented a panel data approach using a longitudinal dataset for both on- and off-cluster firms. Results highlight the importance of innovation capability in determining financial and employment growth. Networking, measured in terms of social expenditure, is identified as a major determinant of on-cluster innovation. The authors conclude that social events and networking activities between and within companies should be actively promoted by both firm and cluster managers.

This editorial initiates an explicit turn in the focus of this journal, encouraging contributions on aspects of Knowledge for the Anthropocene as well as aspects of Urban Preparedness for Climate Crisis. As I thank the associate editors and reviewers whose generous contribution continues to make this journal viable, I invite applications for Editorial Board membership to researchers with a background on one or more of the topics listed above. Their addition to current members should reinforce IJKBD's capacity to best contribute to this challenging editorial turn.

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