

Collaborative landscape research in Reunion Island: modelling and ‘managing boundaries’ to foster dialogue and knowledge integration

Guillaume Lestrelin¹, Xavier Augusseau¹, Daniel David², Danny Lo Seen¹, Pascal Degenne¹, Erwann Lagabrielle^{2,3}

¹ CIRAD, UMR TETIS

² IRD, UMR ESPACE-DEV

³ University of La Réunion

This paper reflects on collaborative landscape research currently being conducted in Reunion Island, an outermost region of the European Union. On this small tropical island also considered a major international biodiversity hotspot, policymakers and landscape planners must address important challenges, including low employment and high poverty rates, high population densities in littoral areas and partly uncontrolled urbanisation on the slopes causing important pressure on agricultural land and natural ecosystems (Martignac *et al.* 2011). Important progress has been made towards implementation of the European Landscape Convention with the finalisation of a regional landscape inventory, the publication of a landscape atlas and the drafting of landscape charters at the intermunicipal level. Yet, entrenched interests and the competing visions of actors involved in land governance challenge landscape planning (Lagabrielle *et al.* 2010). The design of landscape plans – a local collaborative planning process promoted by national environmental agencies since 1993 – is especially impeded by a lack of communication and coordination across the agricultural, urban and environmental sectors. As part of a broader research endeavour on spatial modelling and scenario planning, a series of land-use change models were co-constructed with various institutional actors in order to simulate *and* discuss future urbanisation patterns and impacts on landscapes. Significant emphasis was put on the heuristic and ‘catalytic’ values of the models: triggering and structuring information exchange and debate, questioning and integrating knowledge on land-use change and interactions, and potentially contributing to advance social learning (Reed *et al.* 2010). Building on notions of salience, credibility and legitimacy (Cash *et al.* 2003), this paper presents, from the standpoint of the researchers, some key preliminary results of this work. It describes how spatially explicit models, first used as demonstrators, have raised individual interests and facilitated the structuring of a collaborative research network. A link making up this network was later made pivotal by a charter established between the researchers and an intermunicipal organisation. This allowed for the emergence of a legitimate science-policy boundary organisation (Guston 2001). Once incorporated into a co-construction process, models then operate as boundary objects facilitating a shift away from statistical and sectorial readings towards integrated and territorialized perspectives (Harvey and Chrisman 1998). Regarding the everyday functioning of the project, three key strategies have contributed to bolster salience, credibility and legitimacy, and helped managing the tradeoffs among them. These are: (a) an explicit disconnection from formal policymaking and planning processes, (b) the use of dedicated ‘boundary managers’ for facilitating communication, negotiation and mediation between actors, and (c) reflexivity and the integration of a critical approach to social learning. At a time when European regions are looking towards 2020, this experience provides valuable insights into the potential contribution of participatory spatial modelling and scenario

planning to moving beyond inventories and broad intentions, integrating knowledge on land-use change, interactions and impacts on landscape quality, and exploring the social–ecological implications of possible futures.

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