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Conceiving and implementing participation: a case study on GAMA and Cormas

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Agent based modeling platforms, public participation, Science and Technology Studies

Abstract

Resulting from a number of concomitant trends, and over the last few decades, the use of Agent Based Modeling (ABM) to support participation in natural resources management has been increasing at a very fast pace. A number of scholars from computer sciences and social sciences alike see in ABM a productive way to represent and collectively explore solutions to “wicked problems”. They stress that the approach can foster participation by providing a means to discuss multiple viewpoints on how a territory or a pool of resources is managed. The notion of “participation” has been thoroughly discussed and critiqued in the scientific literature, notably in the field of development studies and more generally in the social sciences. In parallel, scholars have investigated the relations between participation and modeling [7, 2], including with specific reference to ABM approaches that can be unpacked as involving the development of ABM platforms, models and simulations [1, 6, 3]. Interestingly, though, this literature seldom engages with the question of how the ABM platforms themselves contribute to shaping the ways participation unfolds in practice; the subtle implication being that artifacts are seen as mere conduits materially ‘translating’ the intentions of people involved in their development and use. In this paper, we start from a different vantage point. Inspired by the field of Science and Technology Studies (STS), we propose to see ABM platforms not as neutral tools but as agents having differentiated affordances in terms of participation. In other words, developing and using a platform or another has implications for the form participation will take. The way participation unfolds is not only due to the artifact itself but is the product of individual choices reflecting professional norms, cultures, and interests within communities of practices of both developers and modelers. Our argument is based on an analysis of two communities of practices we have a professional proximity to, that of GAMA and Cormas. Through a qualitative review of this literature and in-depth open ended interviews with members of these communities of practices, we intend to shed light on the different ways participation is conceived and how it unfolded in practice. More broadly, we aim at contributing to an existing body of literature on the complex interplay between ABM and participation [4, 5], bringing into play a vast body of literature on the performativity of artifacts.

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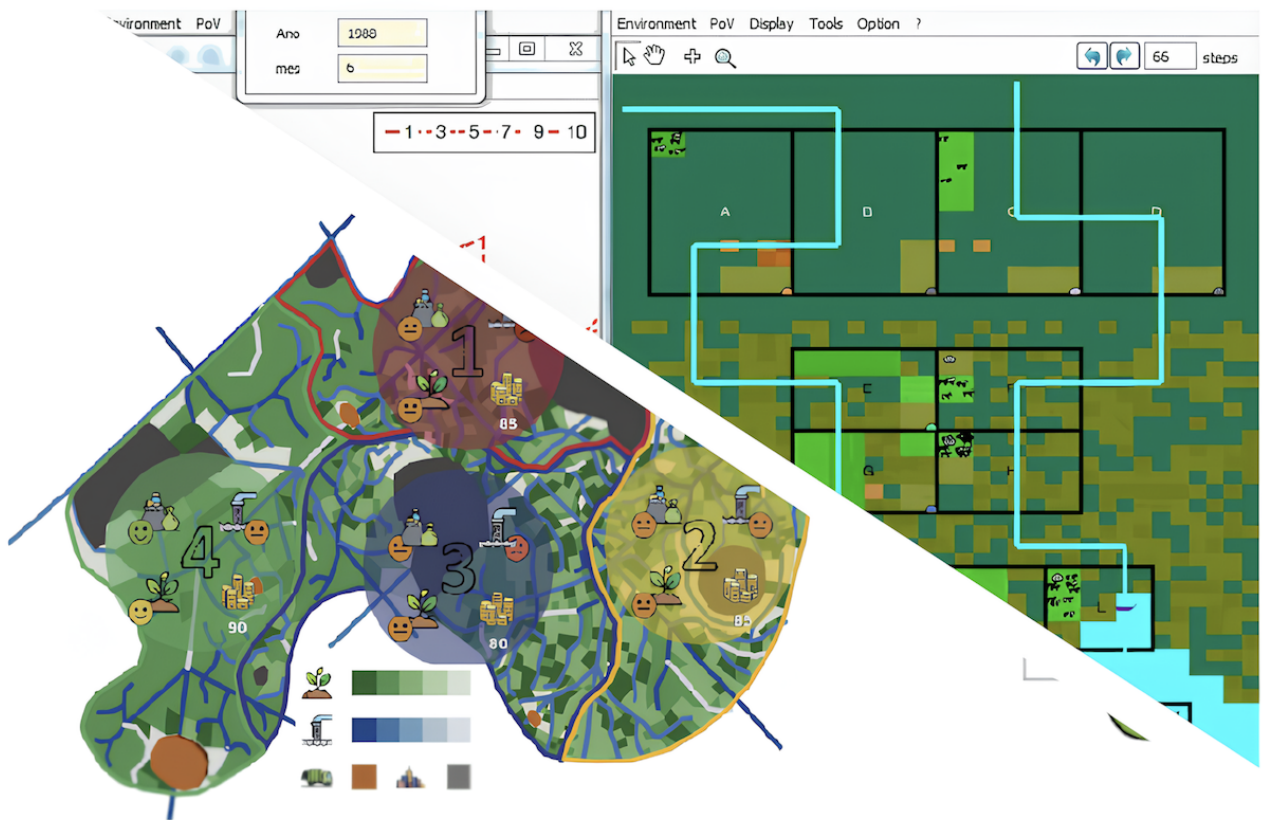


Figure 1: Bottom left: Interface of RAC model in GAMA; Top right: interface of Varzea model in Cormas