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Knowledge co-production and collective action in sustainable village transformation: A transition lab approach

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Abstract

Collaborative processes are crucial for sustainable transitions, but institutional dynamics, such as cultural barriers or hidden power imbalances, can significantly impact them. This study aims to understand how knowledge co-production and collective action develop in a rural community transition lab and by which contextual factors these are shaped. The transition lab focuses on sustainable and transformative land-use practices and is located in an oil palm-dominated landscape in Pematang Kabau Village, Jambi Province, Indonesia. The research uses a qualitative approach, drawing on data from workshops, interviews, participatory observations, and research journal notes. Data were analysed using the Critical Institutional Analysis and Development (CIAD) Framework guided by deductive-inductive thematic content analysis. Our preliminary results reveal that knowledge co-production occurs through interactions among actors, such as farmers, researchers, project facilitators, and local government representatives, that integrate local, scientific, and practical knowledge. These interactions occur, for example, in co-design activities for chili land management practices, where farmer group members share their experiences growing chili surrounded by oil palm plantations, researchers provide advice based on scientific studies, and facilitators bridge the dialogue between farmers and experts and facilitate collective decision-making. However, the disparity in access to information and the weakness of the documentation system hinder the process. Social learning mostly occurs at the level of practice improvement (single-loop learning) without fundamental changes to institutional governance (triple-loop learning). The weakness of formal rules, and village elites' political and economic domination also affect the effectiveness of collaboration. However, local norms such as mutual cooperation continue to play an important role in maintaining the group's social capital. Changes in practices and the enhancement of the group's collective capacity have impacted the village's transformation, but have not yet been uniformly institutionalized across all groups. Our study suggests that knowledge co-production and collaboration are essential prerequisites but insufficient to support sustainable transformation in the transition lab without an equitable power distribution, institutional strengthening, and a structured learning mechanism. This study contributes to analytical generalisation by uncovering the mechanisms at work in rural sustainability transitions, particularly in the context of weak governance and monoculture systems.

Keywords: CIAD framework, collective action, institutions , knowledge co-production, social learning, village transformation