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Integration of Indigenous and Scientific Knowledge in Disaster Risk Reduction: Resilience Building of a Marginalized Sampaguita Growing Community in the Philippines

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Abstract

A constructivist research methodology elucidated the evolved layers of risks in a sampaguita growing community in the Philippines. Integration of indigenous and scientific knowledge was a crucial process in livelihood disaster risk reduction and resilience building. Resilience processes empowered the marginalized community to escape chronic poverty and collectively act on other constraints including climate change-related risks. The resilience process of collective adaptation was a capability manifestation of making a choice to develop livelihood capitals in the face of disaster risks in a manner that does not degrade the natural resource base of the valued sampaguita livelihood.

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Keywords: indigenous and scientific knowledge integration, livelihood risk reduction, resilience building, marginalized community, constructivist methodology, sampaguita (*Jasminium sambac* [L.])

1. Introduction

Rice and vegetable farming are traditional income sources in the Philippines. Extreme or variable climate

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conditions, perceived now as increasing in frequency and intensity, greatly reduce or even wipe out rice and vegetable production at particular seasons. For the many marginalized households in the research setting, sampaguita livelihood is a diversification strategy to earn daily income. As sampaguita growing has now become a community livelihood, the risks associated with it have become complex to include those that bear upon human health, nature and the environment, ecology, production, and the general well-being of the community. This scenario has elucidated the sampaguita growers' stories that call for support from institutions and other organizations to include them in intervention programs that will help improve their plight. The call necessitates a convergence of research, analysis, and action about the problem of environment and development at the local level in the face of disaster risks as an approach for a sustainable livelihood.

As policy interventions in the Philippines' agricultural sector focus more on food sufficiency, there was no government support when the sampaguita livelihood started. Recognizing the sampaguita livelihood's value as a daily source of income enabling local peoples to procure the food they require, the local government in the study area collaborated with other institutions to provide risk reduction interventions. Since the sampaguita growers showed capability of undertaking livelihood diversification on their own, a more appropriate role of outside intervention should be to enhance the emerged collective learning and adaptation processes to perceived risks. The social processes of collective learning and adaptive action in response to risks are emerging as resilience attributes [1]. The key role in resilience building is the delivery of context-specific policies and programs that address the livelihood risks relevant to local peoples. Indigenous knowledge about livelihood risks and resilience processes are critical entry points for a contextualized science-based intervention that build on what the local peoples understand. As Rist and Dahdouh-Guebas [2] and Hounkonnou [3] assert, sustainable actions can only be achieved if science interventions are based on the local peoples' understanding and theories about their reality. In resilience view, Folke et al. [4] argue that innovative management of emerging complex risks in social-ecological systems can evolve when diverse types of knowledge are merged. In analyzing research literatures, Bohensky and Maru [5] cite that the link between knowledge integration and resilience remains a tenuous theoretical contention if empirical evidences remain dearth.

There are challenges related to the methods and processes in knowledge integration that matches local issues and context. King and Jiggins [6] emphasize the indispensability of a learning process that starts from the peoples' lived experiences in order to effect change. A constructivist research hence was used in this study as a systematic method of inquiry from the perspective of the insiders in their natural setting. The study analysed the contribution of contextualized knowledge integration in resilience building. Comprehending the relationship of knowledge integration and resilience is a research frontier that could contribute to the reduction of livelihood disaster risks in a marginalized community.

2. Materials and methods

The research was conducted in Sta. Cruz, a municipality in Laguna province. The choice of the study case was based on the observation that resilience to livelihood risks is a salient variable in the lifeworld of the sampaguita growers. The choice was also based on field access. Field access was established when the researcher led the facilitation of a sampaguita farmers' field school on integrated pest management (FFS-IPM) in the research locale from March 2007 to April 2008. The FFS-IPM was a collaborative project of the local government unit (LGU), University of the Philippines at Los Baños (UPLB), and Urban Harvest-User's Perspectives with Agricultural Research and Development (UH-UPWARD).

Participatory processes of diagnostic and action research were conducted in the FFS-IPM to explore the contribution of local peoples' perspectives in the development and application of technology innovations to address the risk of frequent chemical spraying in managing sampaguita pests and flowering. On hindsight, main focus on the perspectives of the sampaguita growers about this risk limited the success of the intervention project. Lack of support and interaction with the sampaguita growers for many years provoked mistrust about the goal of the LGU intervention. Limited understanding about local dynamics as well as the construction and meaning of knowledge and practices in sampaguita growing were also hindrances.