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"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

Analysis of social dynamics for the *in situ* maintenance of native potato agrobiodiversity in Paucartambo, Peru

Maria Cordero-Fernandez¹, Giovanna Chavez-Miguel², Michelle Chevelev-Bonatti²

¹Humboldt-Universität zu Berlin, Dept. of Agricultural Economics, Germany

Abstract

Agrobiodiversity, a key component of sustainable food systems, is funded upon social interactions of farmers that allows their maintenance. The Andes, considered a hotspot of agrobiodiversity, is the centre of origin of a wide variety of potatoes and tubers, which are maintained in situ on the highlands by family farmers at a small-scale. Farmer-based agrobiodiversity maintenance offer potential for strengthening food security of rural populations, conserving the biocultural heritage, and ensuring the persistence of traditional farming livelihoods. The maintenance of agrobiodiversity on the Andes relies on social dynamics related to the exchange of intra-ecological products, knowledge, seeds, and to some extent, collective farming practices. This study investigates social dynamics related to agrobiodiversity management in Paucartambo - Cuzco, a region characterised by its high levels of varietal diversity, traditional communal farming practices, and its cosmovision. We apply methods from ethnography, including semi-structured interviews, focus groups and participants observation, as well as elements from visual anthropology, i.e., film-based interviews and workshops. Our results shown that ancestral communal dynamics are currently being replaced by individual practices due to the competitive logic of public incentives for conservation, affecting thereby the local social fabric and transforming the way agrobiodiversity is maintained. At the same time, the emergence of trans-local conservation networks, such as the Association of Native Potato Guardians of Peru (AGUAPAN), advance new organisational mechanisms aimed at strengthening regional farmer-based conservation networks by generating new spaces of convergence. By analysing how local actors coordinate efforts to maintain agrobiodiversity in the current context of socio-environmental transformation, we argue that emerging organisational mechanisms aimed at nurturing the social fabric are needed for agrobiodiversity maintenance. Based on farmer perceptions, we emphasise the need for proactive measures for supporting agrobiodiversity conservation and generate recommendations for fostering organisational and leadership capacities that help strengthen autonomy and self-governance of local organisations.

Keywords: Agrobiodiversity, farmer seed systems, social dynamics, social-ecological systems, traditional knowledge

²Leibniz Centre for Agric. Landscape Res. (ZALF), Sustainable Land Use in Developing Countries (SUS-Land), Germany