

SDC 2019 Annual Meeting Abstracts

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Title: Assessing Conservation Efforts: An Agricultural Household Model for Agrobiodiversity Conservation in An Andean Landscape



According to the Convention on Biological Diversity (CBD), agrobiodiversity is being shaped and developed through local and traditional agricultural practices of farmer's communities. These communities are custodians and managers of agrobiodiversity. Some of the main services provided by agrobiodiversity conservation include conservation of genetic resource diversity, food security for subsistence-based economies and resilience in the context of climate change. Small-scale agricultural practices across the Andes have promoted agrobiodiversity conservation by having a diversified portfolio of Andean crops and varieties, different agricultural production zones, a system of seed exchange and cultural practices that enhance the biodiversity of agricultural landscape in the Andes. Despite this, Andean food production systems are under threat, including local knowledge and the culture and skills of farmers who have specialized in fewer financially profitable crop species and varieties. Our study aims to provide a better understanding of Andean household decisions in the context of agrobiodiversity loss, specifically native cultivar loss. We use a household agricultural model to characterize preferences, production and consumption decision variables when cultivating native Andean tubers. The utility maximization model considers the limited cash-generating activities, preferences for native tuber's consumption and participation on specific cultural practices. This allows to understand the trade-offs between meeting cash needs and native tuber cultivation, that is the tradeoffs between economic benefits and conservation benefits for the household. We show that current conservation efforts including schemes such as Payment for Ecosystem Services fail to achieve agrobiodiversity conservation goals when labor-related cultural practices and generational characteristics are not considered in the design of these conservation efforts. The model is parametrized for the community of Kiuñalla, in Apurimac, Peru. This research informs landscape managers with agrobiodiversity conservation goals on Andean landscapes by providing information on the main characteristics of small-scale farmers that drive agrobiodiversity conservation, the tradeoffs between economic benefits and conservation benefits, and the importance of certain cultural practices in the sustainability of Andean small-scale farming.