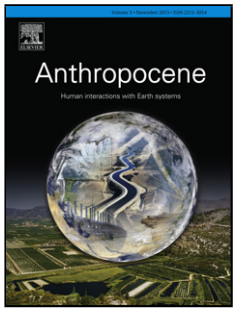
Accepted Manuscript



Title: A hybrid-epistemological approach to climate change research: Linking scientific and smallholder knowledge systems in the Ecuadorian Andes

Author: <ce:author id="aut0005" author-id="S2213305417300024-333ca49614870e0689825f383905ead1"> Santiago López<ce:author id="aut0010" author-id="S2213305417300024-f699d7bb5d8c3ba0d834e5016228f4ad"> Jin-Kyu Jung<ce:author id="aut0015" author-id="S2213305417300024-4bf6342c87e4a0dd2180d317f499bd2e"> María Fernanda López

PII: S2213-3054(17)30002-4
DOI: http://dx.doi.org/doi:10.1016/j.ancene.2017.01.001
Reference: ANCENE 128

To appear in:

Received date: 27-7-2016
Revised date: 27-12-2016
Accepted date: 3-1-2017

Please cite this article as: López, Santiago, Jung, Jin-Kyu, López, María Fernanda, A hybrid-epistemological approach to climate change research: Linking scientific and smallholder knowledge systems in the Ecuadorian Andes.Anthropocene http://dx.doi.org/10.1016/j.ancene.2017.01.001

A hybrid-epistemological approach to climate change research: Linking scientific and smallholder knowledge systems in the Ecuadorian Andes.

Authors and affiliations

Santiago López [*a] email: cslopez@uw.edu
Jin-Kyu Jung [a] email: jkjung5@uw.edu
María Fernanda López [b] email: maflopez@flacso.edu.ec

Corresponding author [*]
Affiliation [a] : University of Washington Bothell (WA – USA)
Affiliation [b]: Facultad Latinoamericana de Ciencias Sociales (Quito-Ecuador)
Professional address of the corresponding author:
University of Washington Bothell
School of Interdisciplinary Arts and Sciences
18115 Campus Way NE
Bothell, WA 98011-8246
phone:+001 – (425 352 3393

Abstract

Effective responses to the impacts of climate change require the recognition that people conceptualize and experience environmental changes differently, and require the support of a range of global-to-local interdisciplinary efforts that allow a dialog between the biophysical and social sciences. In this study, we use a hybrid epistemological framework that integrates scientifc and local knowledge systems, methodological approaches, and geographic scopes to: 1) shed light on climate change in the equatorial Andes as reported by scientific and local knowledge systems, and 2) understand the role that climate factors play on land use and agricultural change in natural resource dependent communities in the region. We analyzed weather station (n =5) data and downscaled climate data using parametric and non-parametric statistical tests, and spatial analysis techniques to detect spatio-temporal climate trends between 1965 and 2013. We also analyzed climate variability in the past four decades using qualitative information derived from a semi-structured survey (n =36) and life history smallholder interviews (n =8) collected in three research sites. Our study reveals significant warming trends in the region which is corroborated by