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Vegetation Change and Livelihood Strategy. A macro-scale analysis from Tanzania
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This paper addresses the tension between natural resource preservation and poverty alleviation in Tanzania. Much of the relevant literature focuses on (i) variations in forest governance and their consequences for forest cover change, (ii) the tendency of poor subsistence farmers to use forest resources as insurance against shocks, or (iii) deforestation on account of agricultural commercialization in tropical areas, characterized by a revenue enhancing move from subsistence farming into either cash crop or biofuel production. In each case, potentially poverty alleviating livelihood choices enter into conflict with natural resource preservation. Yet, we are not aware of empirical analyses mapping broad livelihood choices (including subsistence, commercial farming, livestock production and non-agricultural wage employment) and vegetation changes across a range of habitats, including forests. The aim of this paper is to explore how habitat change is linked to livelihoods in order to identify conditions for poverty alleviating sustainable livelihood choices.

We propose a structural equations model that (i) explores the effect of climate shocks (or trends in weather change) and policies related to either infrastructural development or irrigation on (A) migration of people across a wide range of habitats (including forests, woodlands, bushlands, grasslands and swamps) and (B) a wide range of livelihood choices within those habitats and then (ii) links those livelihood and migration choices to changes in vegetation within those habitats. The model will be estimated with the use of nationally representative living standards measurement surveys for Tanzania for 2008/09, 2010/11 and 2012/13 aggregating livelihood choices and migration experiences across 409 enumeration areas and matching these choices and experiences with satellite data on infrastructural development, climate shocks and weather trends, and habitat maps. While key climate, infrastructure and habitat geo-variables are available in the datasets themselves, we shall compare the results we obtain with those provided by standard satellite data depositories such as the National Oceanic and Atmospheric Administration and the Climate Research Unit of the University of East Anglia.