**Expert Group Meeting: Population Dynamics and Climate Change**

**24-25 June, 2009, London, UK**

# Population dynamics and deforestation: Prevailing theory and evidence from the tropics

**William Pan, DrPH MS MPH**
**Department of International Health**
**Johns Hopkins Bloomberg School of Public Health**

## Abstract

One of the most contentious scientific and political topics at the turn of this century has been the importance of anthropogenic effects on the natural environment. The complexity of human-environment interactions not only obfuscates the identification of causal pathways, it complicates action from science to policy. In an attempt to bridge this gap, the objectives of this paper are to: (1) Synthesize the prevailing theories regarding human-environment relationships with a specific focus on population effects on tropical deforestation; (2) Contrast drivers of deforestation in three tropical forest regions (Central and South America, Southeast Asia, and Africa) based on an extensive review of literature; and (3) Provide recent evidence from the Amazon (Ecuador and Peru) demonstrating the impacts of population on deforestation. Within the purview of these objectives, empirical evidence across regions is provided to contend that researchers (generally) have accepted the idea that human population is *associated* with land use/land cover change (LUCC); however, consensus regarding the mechanisms through which population is either causally or structurally associated with LUCC has not been fully reached. It is argued that this disagreement is due primarily to the underlying *and* overarching contexts that make population both a proximate and distal driving factor of LUCC. Context, the prevalent socio-cultural, political and economic pressures at a defined scale (global, regional, local, etc.), operates in tandem with population to influence land processes. Several strands of the population-deforestation relationship are shown to be consistent across contexts; however, it is recognized that the extraordinary variability among eco-regions is perhaps matched by contextual variability. Thus, a one-size-fits-all approach to theoretical and programmatic population policies to mitigate deforestation is likely to be inefficient and misguided. Rather, policies that recognize and respond to scale-specific contextual relationships are recommended to minimize population effects on deforestation.