

**ROBB, JANE [POSTER]**

*Using Exploratory Factor Analysis to Explore Drivers of Deforestation, Forest Degradation and Enrichment in a Proposed REDD+ Project in the Sierra de Las Minas Biosphere Reserve, Guatemala*

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This study has used exploratory factor analysis in an attempt to explore the underlying drivers of forest cover change in a proposed REDD+ project area of the Sierra de Las Minas Biosphere Reserve in Guatemala, as part of the Climate Nature and Communities Guatemala (CNCG) project and the development of the national UN-REDD+ (Reduction of Emissions from Deforestation and Forest Degradation in Developing Countries) programme.

Guatemala is currently preparing their national REDD+ R-PP, of which an exploration of national drivers of deforestation, degradation and enrichment is a compulsory aspect required by the UNFCCC. An understanding of these drivers is essential for a country to develop effective policies and strategies to reduce deforestation and degradation as part of REDD+. This study is an attempt at overcoming the current challenge of finding a methodology that explores underlying drivers (indirect and complex interactions between social, political and economic factors) as well as providing quantitative results that can be combined with GIS to explore spatial components of drivers.

A questionnaire containing "attitude statements" was developed using key themes obtained from workshops conducted by the University del Valle de Guatemala, and other collaborating institutions in Guatemala, which were used to explore stakeholder's attitudes in response to drivers of deforestation, degradation and enrichment. Respondents could answer on a scale of 'strongly agree' to 'strongly disagree' to each of the attitude statements. The questionnaire was disseminated to landowners and labourers in the Sierra de Las Minas Biosphere Reserve by collaborating NGO Fundacion Defensores de la Naturaleza, as landowners and labourers were identified as those who make the final decisions on whether to deforest or not, or whether to be employed in work that involves deforestation, degradation or enrichment.

Our results produced a stable six factor solution using an orthogonal varimax rotation from 138 responses and 28 statements using principal axis factoring in SPSS v.22. Collaborative discussions with the University del Valle de Guatemala, Fundacion Defensores de la Naturaleza and two focus groups conducted with landowners and labourers north and south of the reserve produced the naming of the factors representing potential drivers of deforestation, degradation and enrichment: 1) Lack of environmental conscience and education 2) Underdevelopment and corruption 3) Lack of government support for community organisations 4) Collaboration for protection of natural resources 5) Lack of rules and norms for protection of natural resources 6) Lack of sustainable capacity building for development. The results show agreement with current knowledge of key issues in forest management and REDD+ projects. Our next task will be to explore which drivers relate to which type of forest cover change: deforestation, degradation or enrichment. Then, using further statistical analysis techniques, we can explore the physical impact these drivers may have on forest cover change. Some of the potential drivers identified, such as underdevelopment and corruption, are not currently being discussed in Guatemala in a REDD+ context, however addressing these issues may be a route to reducing deforestation and forest degradation in the long term.