NITROGEN BUDGET IN SOUTH AMERICA: OBSERVATION AND MODELING

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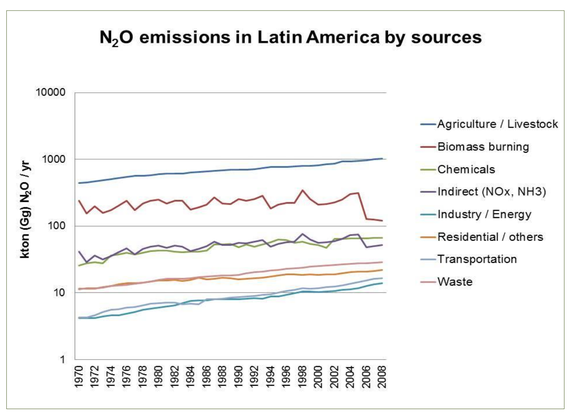
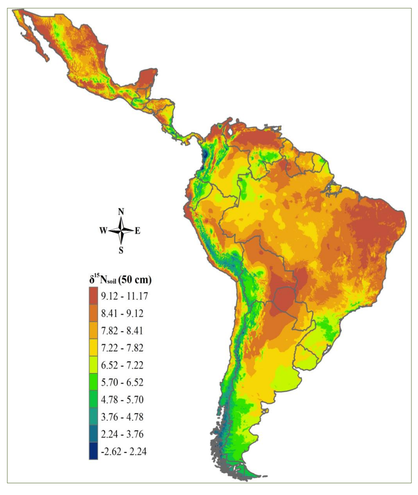
INTRODUCTION

The lack of Information on the nitrogen cycle in Latin America is a serious impediment to provide a proper evaluation and projection on how human activity is altering nitrogen pools and turnover at regional and global scales. Therefore, it was created the **Nitrogen Human Environment Network (Nnet)**, a broad integrative network of research and outreach across multiple ecoregions and socioeconomic background in Latin America. The results obtained from all observational activities (wet deposition, atmospheric concentrations and BNF) are integrated in the modeling work and also through a social dimension analysis

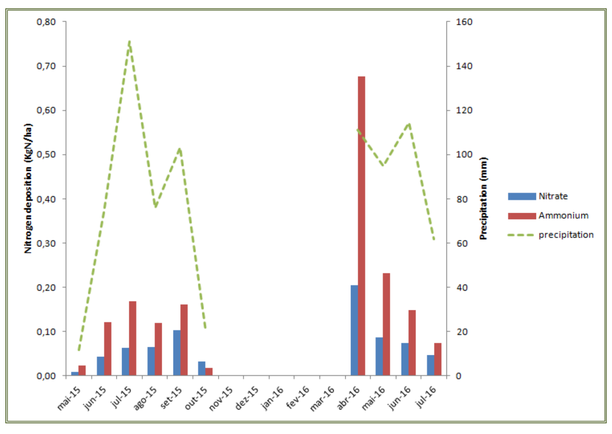
RESULTS (OBSERVATION)



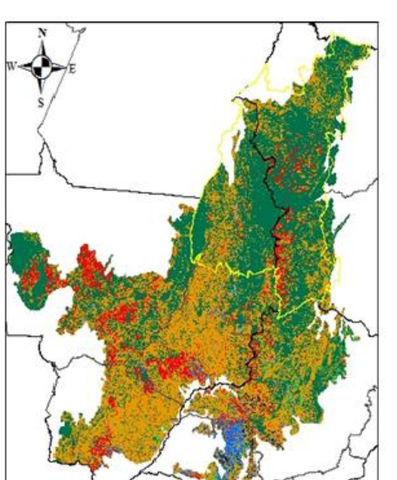
Agriculture and livestock dominate the N_2O emissions, followed by biomass burning from deforestation. Increasing importance of waste and industrial emissions are notable



$\Delta^{15}N_{plant-soil}$ isoscape interpolation, for the Latin America, showed important regional fluctuation N dynamic in the region

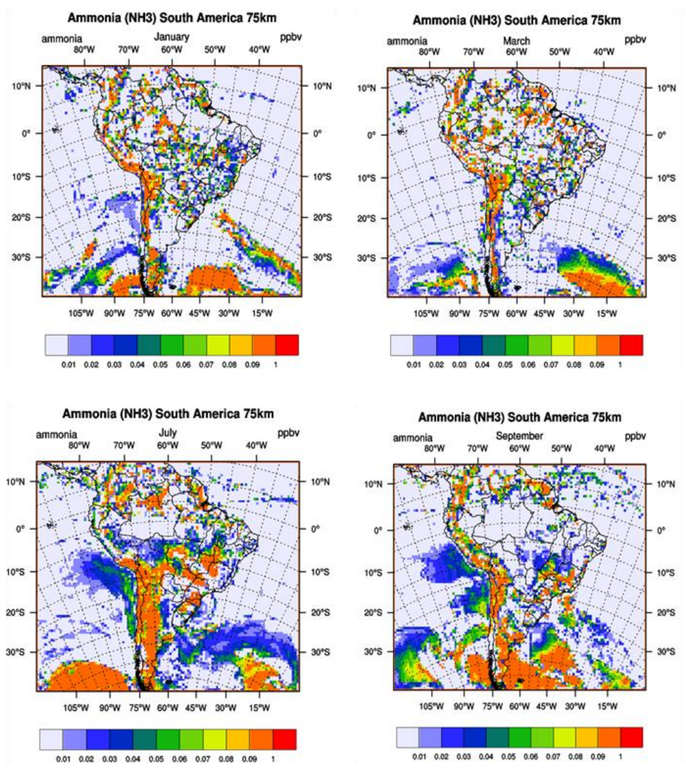


Subsequent drought conditions in the monitoring years showed increased volume-weighted concentrations of reactive nitrogen (NH_4^+ and NO_3^-) in Altos de Pipe, Venezuela



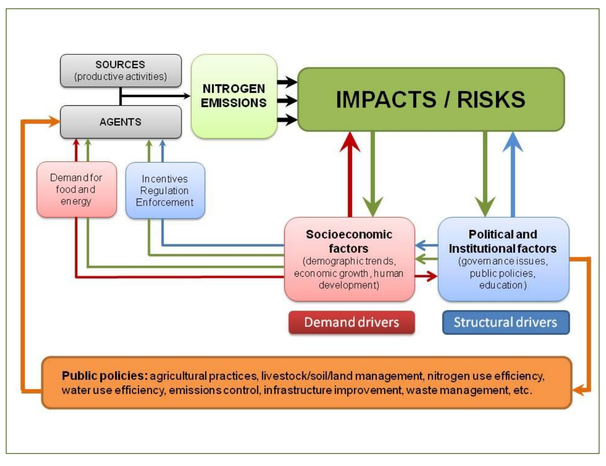
Results indicate nitrogen mining in pasture regions of the Brazilian Cerrado

RESULTS (MODELING)



EURAD-IM coarse grid (75 km) simulations of monthly average Ammonia concentrations in ppbv for January, March, July and September (2016) over South America

SOCIAL DIMENSION CONTEXT



Conceptual framework of nitrogen emissions drivers in Latin America

MAIN CONCLUSIONS

A peer-review literature review indicated low participation of social scientists in publications related to benefits/threats of nitrogen in Latin America. No publication lead by a social scientist was identified. Science and nitrogen management approaches are still in the diagnostic phase of the problem, assessing and measuring the effects of human-induced changes in the nitrogen cycle. Lack of a clear communication strategy bringing a close interaction among social, political and environmental scientists was also identified

ACKNOWLEDGMENTS

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