

SGA Ecosystem Assessment Mentoring Scheme Report

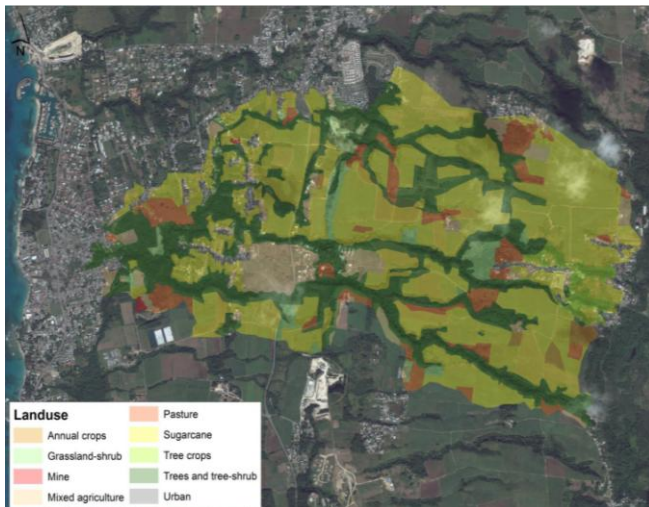
Brian Kastl
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Bogota, Colombia

My mentor Juan Sebastian Lozano and I met in Bogota, Colombia 9-14 August to embark in training on the use of the InVEST (Integrated Valuation of Environmental Services and Tradeoffs) and RIOS (Resource Investment Optimization System) models to inform policy making. We met on three separate days of 4 hours each day. Mr. Lozano has continued to teach me the process and techniques in using these ecosystem service assessment and valuation tools for my work in quantifying and valuing sediment and nutrient retention ecosystem services in Barbados for the project *Sustainable Water Management under Climate Change in Small Island States of the Caribbean*. Since my time in Bogota, Mr. Lozano and I have exchanged over 100 emails to support progress on the project. Skype “Screen-sharing” calls have also been useful to allow for the live viewing of ArcGIS work on the screens of one another.



Mr. Lozano (left) and Brian (right) in Bogota after a meeting to discuss ecosystem service assessment models that generate scenarios on nutrient and sediment runoff



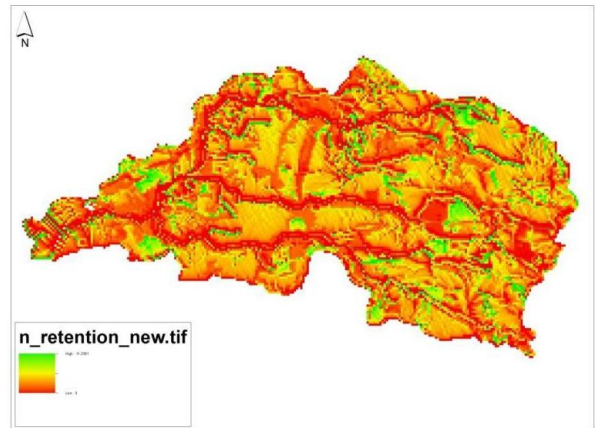
A land use map of the study watershed in northwestern Barbados was used as model input as well as a visual to stimulate discussion with stakeholders on future scenarios

I found the SGA mentoring scheme to be a streamlined model to jumpstart assessments and build collaborations. Prior to my engagement in the mentoring scheme, I had an academic background from Masters and Fulbright research in watershed management. I also had environmental policy and economic valuation experience with the Asian Development Bank (ADB), International Union for Conservation of Nature (IUCN), and the Wildlife Conservation Society (WCS). However, during these experiences I recognized that there is often a gap between policy implementation and the communication of

rigorous watershed science. The mentoring scheme has been a tremendous opportunity for me to learn ecosystem assessment tools that bridge this divide.



I led a stakeholder engagement meeting in Barbados that allowed researchers and national officials to discuss the use of ecosystem assessment tools in the decision-making process



Preliminary modeling results on baseline nutrient retention variability across the watershed of the study.

I used the tools that I had learned with Mr. Lozano to engage stakeholders in a scenario-building process that allowed watershed scientists to meet with national-level decision makers. With the information gathered during these meetings I have continued to model the effects of various land use scenarios on the functioning of sediment and nutrient retention ecosystem services. Without this opportunity that the SGA Network provided me to learn the InVEST models with Mr. Lozano during our personalized one-on-one training, my leadership in this project would not have been possible. The mentoring scheme enabled me to help decision makers in Barbados move forward in assessing their ecosystem services. I anticipate that this work will consequently lead Barbados towards land management solutions that support future provisioning of watershed-based ecosystem services.

Ecosystem Services Partnership (ESP) Conference

This conference in San Jose, Costa Rica, was an invaluable time to learn about the technicalities and trends in ecosystem service assessments. In Costa Rica, forest coverage has increased simultaneously with GDP. Economic inequality, however, worsened. Through a framework of attributing value to nature, this conference brought together world leaders on the topic to tackle these issues globally. The local issues of forest management were well aligned with the methodologies I learned to assess forest-based ecosystem services with Mr. Lozano.



A visit to a carbon neutral coffee plantation and processing center in Costa Rica, where I initiated informal discussions on the use of ecosystem assessments in coffee certification

One particularly helpful session was the session *Aqua Tica Financing Mechanisms for Ecosystem Services in Costa Rica*, which provided insights on others' endeavors with InVEST and RIOS. The *SGA Network* session provided the best discussion on the practicality of potentially standardizing ecosystem services metrics globally. One advantage of such harmonization was provided by a United Nations official, who explained the need to use standardized methodologies in order to ensure the validity of trans-boundary ecosystem service value comparisons. However, another practitioner expressed that the uniqueness of local contexts also necessitates the use of a diversity of metrics for valuation.

Expansion of mentoring

Within one month of my engagement with Mr. Lozano I began training a PhD student, Akilah Stewart, at the University of the West Indies, Trinidad on the use of InVEST and RIOS models. She is also interested in quantifying sediment and nutrient retention ecosystem services. We initially discussed the compatibility of the models with her research objectives. Since that time she has begun using the models, and I have shared with her my lessons learned and I have anticipated challenges she may face. Mr. Lozano has additionally given his time to mentoring Ms. Stewart.

Future benefits

I am certain that the lessons learned during the mentoring scheme will extend well beyond my engagement during the mentoring scheme. The skill sets I developed with Mr. Lozano, the ecosystem assessment framework I learned at the ESP Conference, and the breadth of applications I experienced at the SGA Network Annual Meeting in Dubai have all helped me to formulate my current PhD research on *the communication of hydrologic ecosystem services to forest managers*.

I look forward to continue working with Mr. Lozano, expanding engagement in the SGA Network, and attending future SGA Annual Meetings. I am grateful for this opportunity, so please do not hesitate to contact me with any questions or opportunities to help the SGA Network reach its goals.