

# Coastal Conservation Challenges and Opportunities in Placencia Belize.

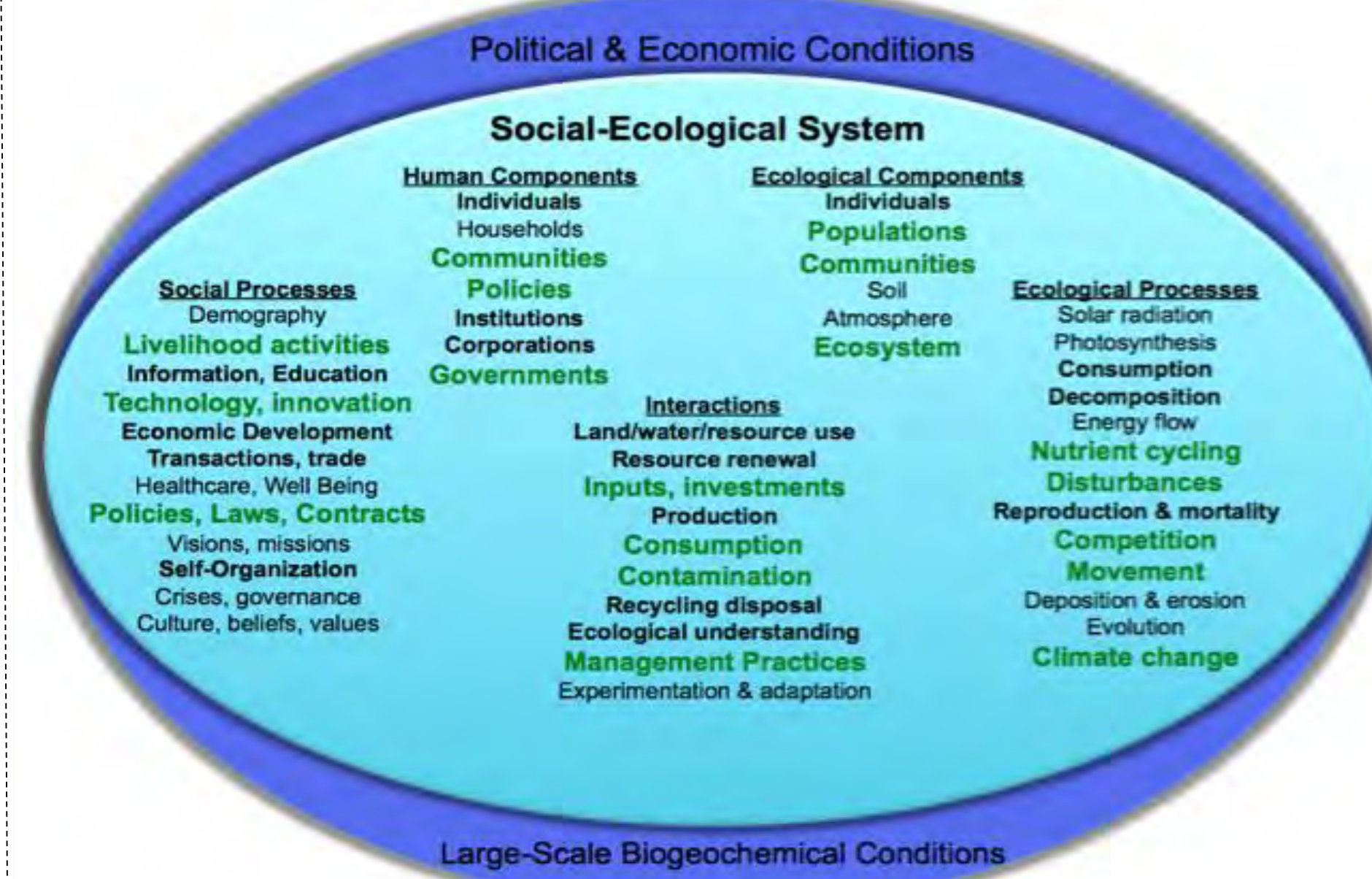
## 1 BACKGROUND AND RATIONALE

“Our thatched roof village has been replaced by concrete castles.”  
- Mrs. Rosenda (Placencia Village Elder)

My practicum was conducted in the terrestrial and marine ecological management zones around Placencia Village, within the Stann Creek District of Belize. This area includes the village of Placencia, Placencia Lagoon, and the Gladden Split Silk Caye Marine Reserve.

This coastal area, at the Southern Peninsula of Belize, provides important economic and ecological services for the local and regional inhabitants. As a hub of economic activity, the area is developing rapidly through intensive tourism. However, the revenue streams, environmental considerations, and resource extraction implications for this area extend significantly beyond its borders. Understanding the key challenges to sustainability within this critical resource basin can aid in efforts to evaluate, monitor, and manage the encompassed natural and anthropomorphically developed systems; based on development models conducive to sustained use and environmental stability.

### Contextual-Conceptual Framework



Font	Description
Font	Font
Bold, Underlined	Categorical realms of the socio-ecological framework
Bold	Processes peripherally engaged
Bold, Green	Processes directly engaged

This conceptual framework was adapted from an existing model that seeks to integrate the different elements social and ecological dynamics. Initially introduced in the 1970s as a conceptual model, the *Social-Ecological* model was formalized in the 1980s by Urie Bronfenbrenner, who postulated “in order to understand human development, the entire ecological system in which growth occurs needs to be taken into account. (Bronfenbrenner, 1994)”

To understand the role my field practicum serves and how it relates to development within the community serviced, this graphic and narrative highlight areas engaged within the socio-ecological framework. The resource can be used to demonstrate how my field practicum experience fits into the broader context of sustainable coastal resource management in Placencia

## 2 PARTICIPANTS

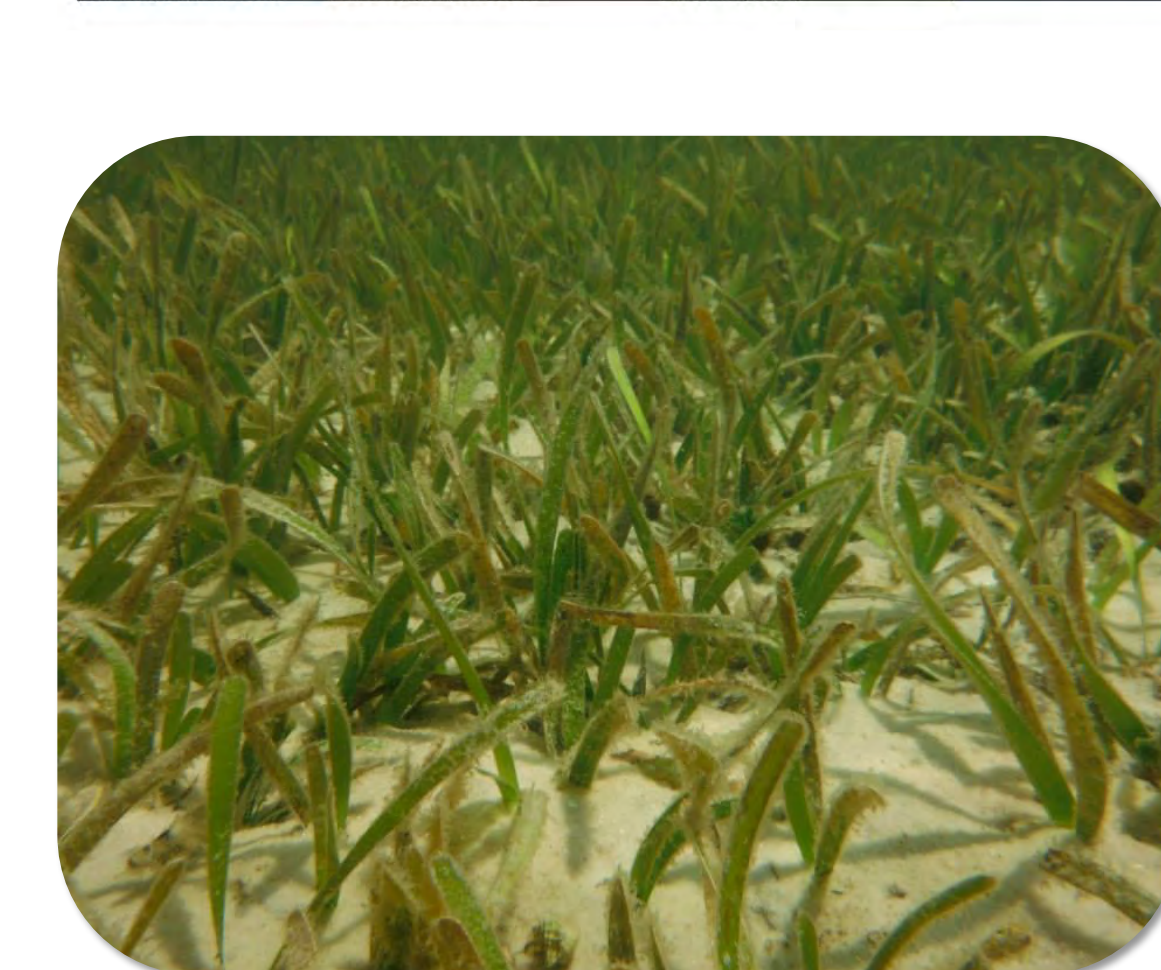
Southern Environmental Association (S.E.A) supported this student research activity from May 16 – August 1, 2016. The host organization (S.E.A) is the nationally sponsored (district) conservation management authority, providing monitoring, reporting of environmental health data, and enforcement of policy and regulations. My practicum engaged a network of environmental managers, non-governmental organizations, and academic institutions working within Belize, all of which are considered to be stakeholders.



Field Sampling	Seasonal commercial harvests	Seasonal population data
Coral Bleaching	Conch, Lobster, Snapper, Cucumber	Conch, Lobster, Snapper, Cucumber
Bleached coral (coastal wash up)	Commercial by-catch	Whale Shark sightings
Terrestrial and marine plastics	Lionfish population data	American Alligator population

Primary Sites	Field Sites	Secondary Sites
S.E.A. (host org.) office	Little Water Caye Research Station	Orange Walk, Belize
Extended Stay Accommodation	Buttwood Caye	Annual Lionfish Tournament
Local-centric eateries	Regional tourist destinations	Annual Lobster fest (2016)
Tourist-centric eateries	Sarteneja, Belize	Harvest Caye

Society	Economy	Environment	Development Administration
Group 1: Society	Group 2: Economy	Group 3: Environment	Group 4: Dev. Admin
Historical references	Ecological resource situation	Caribbean ecology	Regional institutions
Leadership	Belize importance	Environmental education	Caribbean development
Human waste streams	Caribbean economic development	Human dimensions of nature	Central dev. institutions
Cultural reference guides	Tourism and Hospitality	Marine plastics	Leadership development
Local access literature	Local access literature	Use of water water fish	Non-profit administration

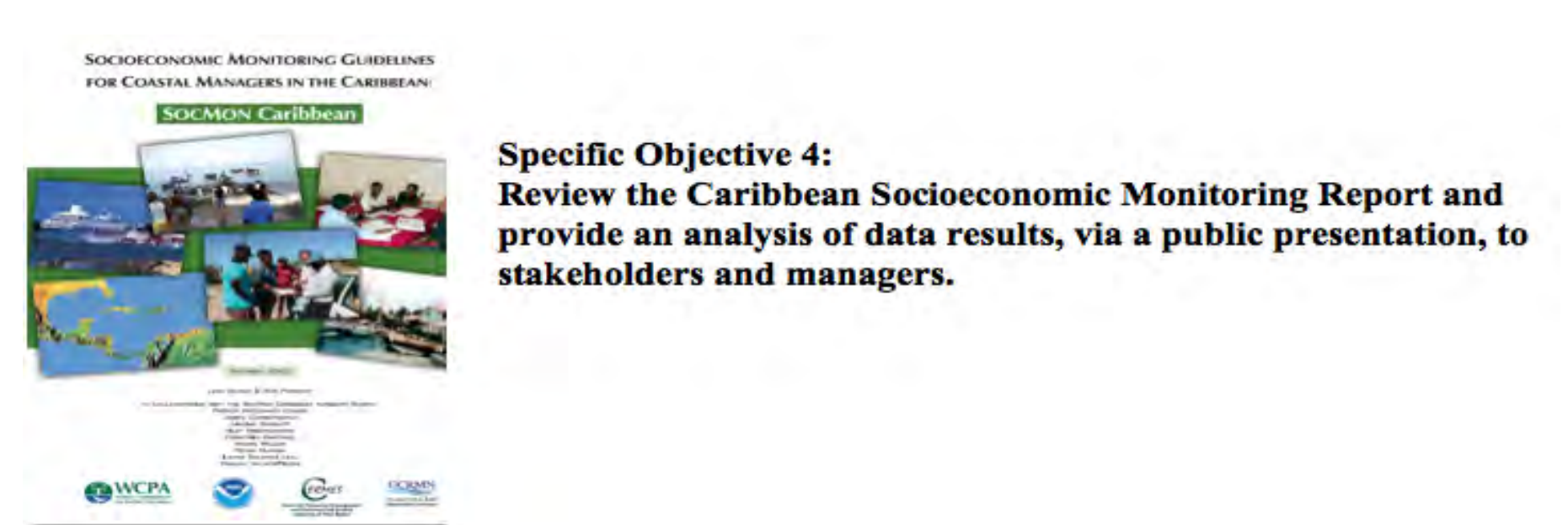


## 3 OBJECTIVES

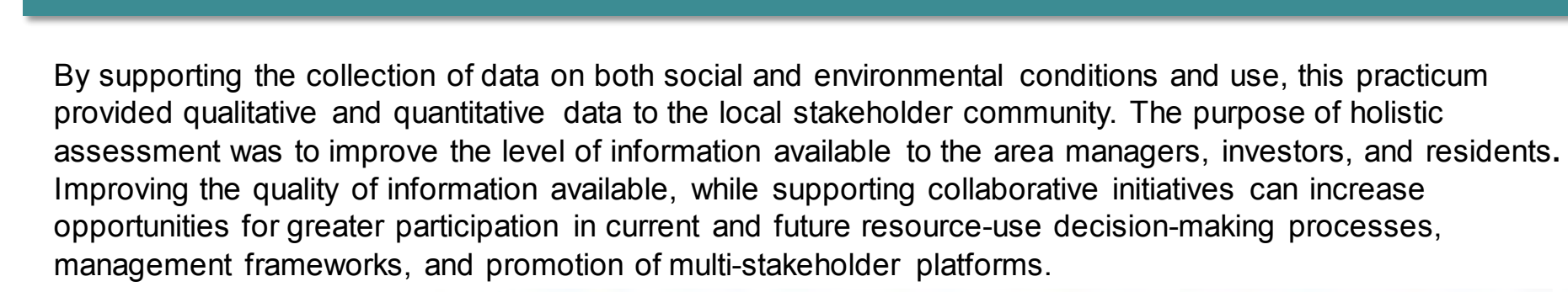
Specific Objective 1: Improve understanding of how stakeholders are using resources.



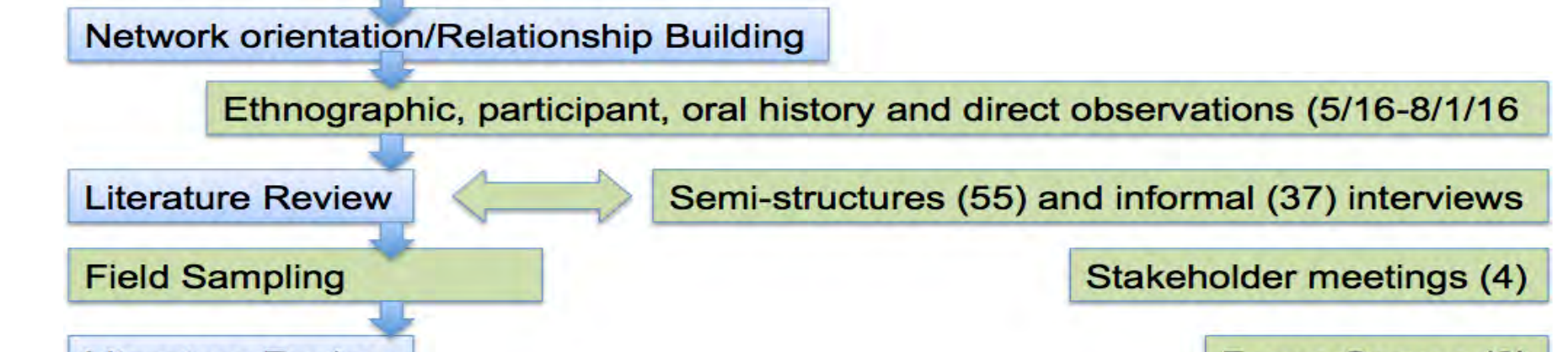
Specific Objective 2: Improve visibility of how stakeholders are monitoring, managing, and developing resources, while anticipating environmental impacts



Specific Objective 3: Support the compilation of coastal natural resource and environmental data around Placencia Village conservation management areas.



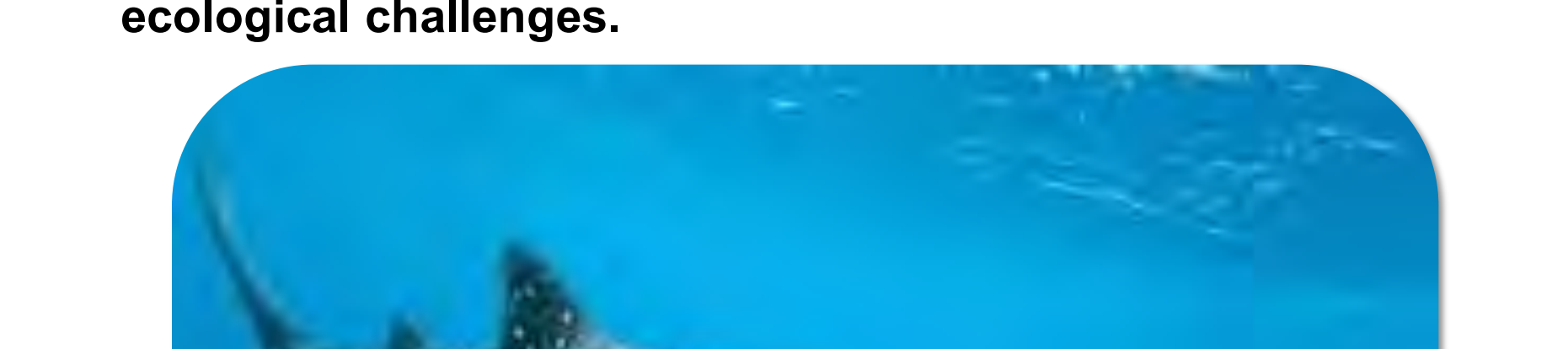
Specific Objective 4: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.



Specific Objective 5: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.



Specific Objective 6: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.



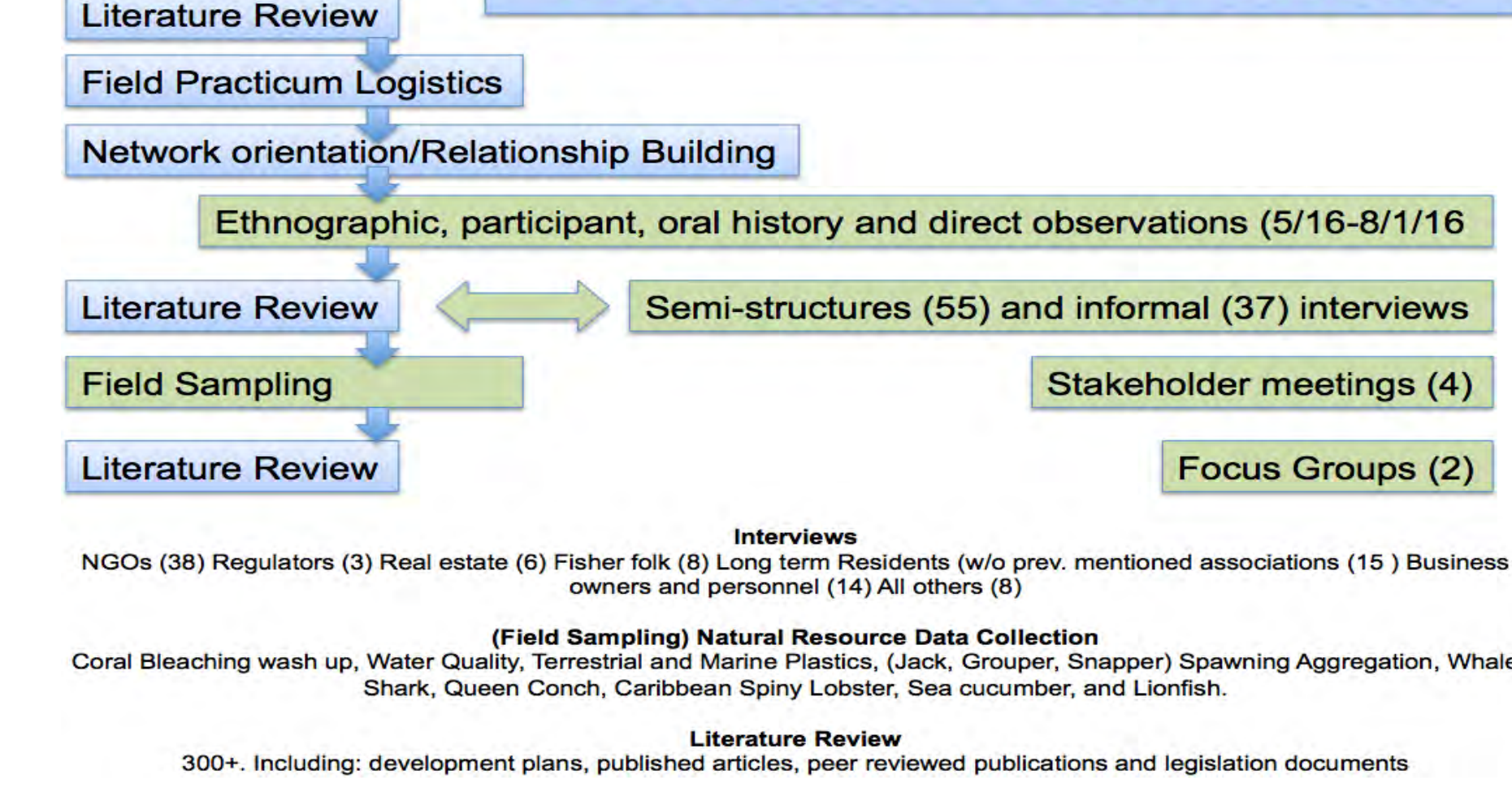
Specific Objective 7: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.



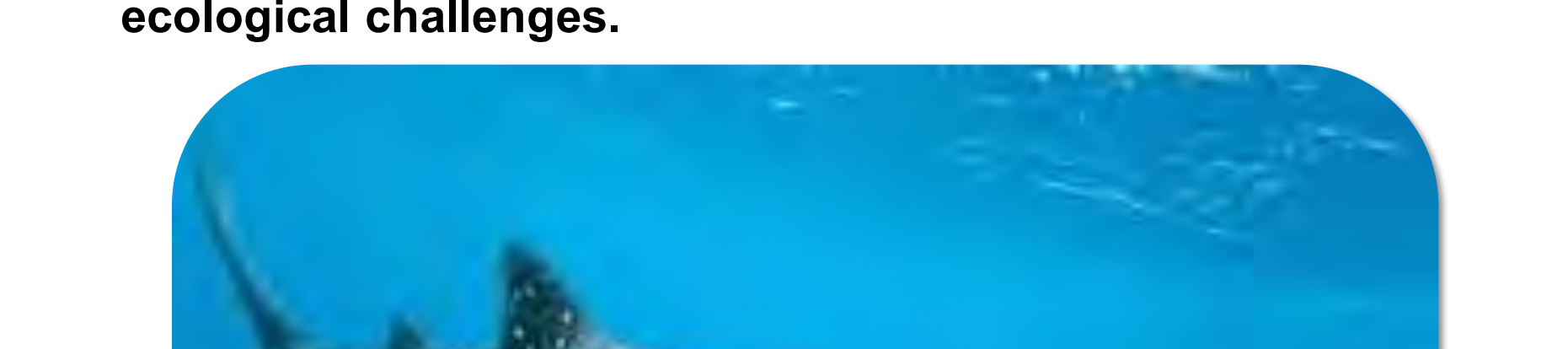
## 4 METHODS

By supporting the collection of data on both social and environmental conditions and use, this practicum provided qualitative and quantitative data to the local stakeholder community. The purpose of holistic assessment was to improve the level of information available to the area managers, investors, and residents. Improving the quality of information available, while supporting collaborative initiatives can increase opportunities for greater participation in current and future resource-use decision-making processes, management frameworks, and promotion of multi-stakeholder platforms.

### Methods Flow Chart



Specific Objective 8: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.

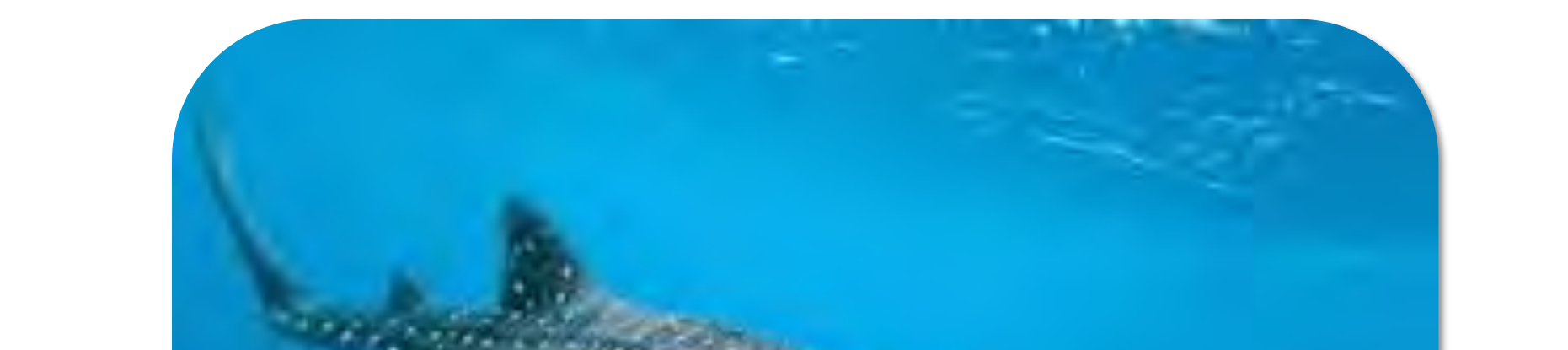


Specific Objective 9: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.



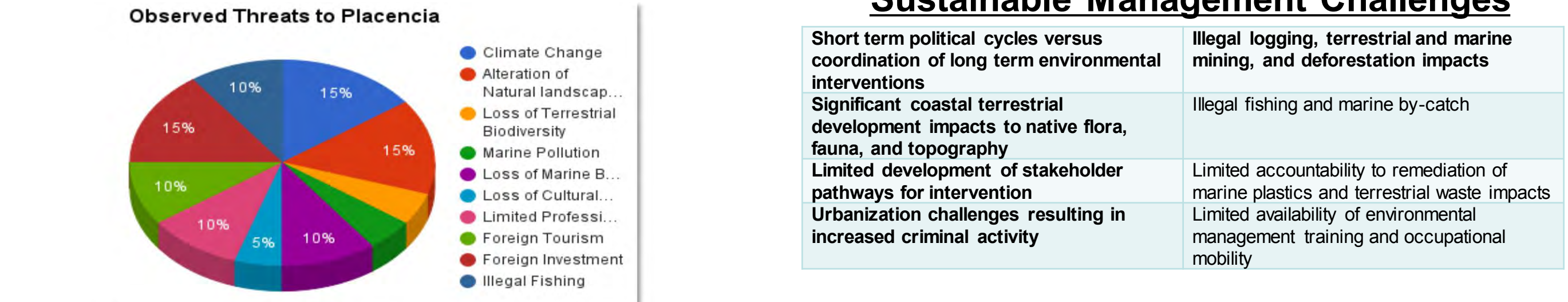
## 5 ACTIVITIES

This effort provided recommendations for advancing conservation management strategies within the Placencia marine and terrestrial resource basins. Data will help to provide analysis of development trends within the ecosystems. Analysis may provide important insights related to improving local engagement in resource planning, development trends, and forecasting for future social-ecological challenges.



## 6 RESULTS

Placencia has quickly become a premier destination for tourists, retirees, expats, and multi-national entities such as Norwegian Cruise lines (Little, K. 2010). The rate of development in the region has been staggering, which has paved the way for threats that include rapidly changing culture, diminishing resources, shifting biodiversity migratory patterns, increased pollution, and marginalized livelihood strategies (Sheppard, E. et. All. 2009). Placencia village has many logistical challenges in its capacities for sustainability and long-term development and within stakeholder use. The ecosystem services contribute to almost every industry represented within Placencia. The (marine) biological significance as a spawning and breeding areas are under pressure due to the rapid expansion of (terrestrial) construction, development, habitat removal, and reduction in the quality and volume of services, due to the impacts of human and environmental degradation (Sanchirico, J. Mumby, P. 2009).



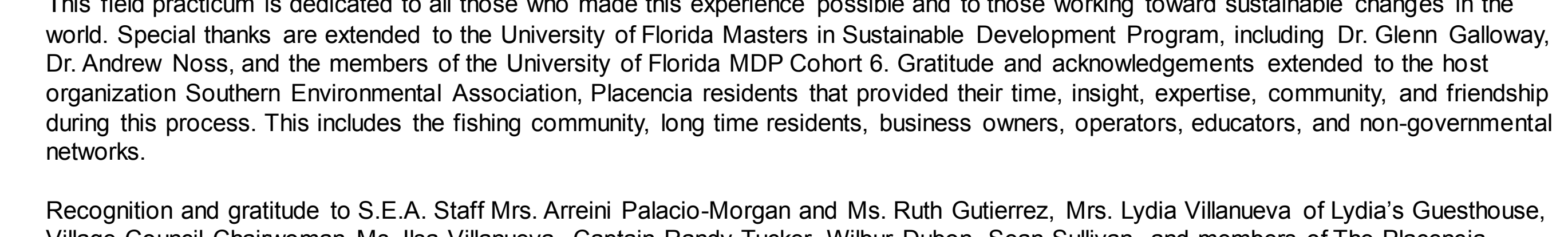
## 7 CONCLUSIONS

Arbitration, remediation, and conservation function as critical components in how to sustain the MAR Barrier reef system for future generations. However, policy makers and residents alike must realize the weight and implications that un-mitigated climate change will bring about to the biome. Stakeholders should be prepared to face those challenges with the best science, technology, and passion to avoid the worst case scenarios of global climate change and what that means to local systems.

Placencia's challenges are mostly symptomatic of the “growing pains” being experienced by rapid development across the peninsula. Many of these problems have solutions being developed but progress is slow. There is legislation being proposed and implemented to address marine systems, forest products, etc. A sewage system will eventually get installed but there are political and bureaucratic and cultural barriers to grassroots mobilization. The principal differences to be anticipated relate to the scale by which certain things are being felt now versus what will be more visible to the public, in a decade or so.



Specific Objective 10: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.



Specific Objective 11: Review the Caribbean Socioeconomic Monitoring Report and provide an analysis of data results, via a public presentation, to stakeholders and managers.



## 8 REFERENCES

Bronfenbrenner, Urie (1984). *International Encyclopedia of Education* Vol 3, 2nd Ed. Oxford: Elsevier  
Little, K. “Paradise from the Other Side of Nowhere: Troubling a Troubled Scene of Tourist Encounter in Belize.” *Journalism of Tourism and Cultural Change* 8, 1-2 (2010): 1-14  
Sheppard, E., P.W. Porter, D.R. Faust and R. Nagar (2009). *A World of Difference: Encountering and Contesting Development*. New York/London: Guilford Press, Chapter 5, “The Third World and Neoliberal Globalization.”  
Sanchirico, J. and P. Mumby. 2009. Mapping ecosystem functions to the valuation of ecosystem services: implications of species-habitat associations for coastal land-use decisions. *Theoretical Ecology* 2(2): <http://link.springer.com/article/10.1007/s12080-008-0034-8> Accessed 4/12/16.

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## 9 DEDICATIONS AND ACKNOWLEDGEMENTS

This field practicum is dedicated to all those who made this experience possible and to those working toward sustainable changes in the world. Special thanks are extended to the University of Florida Masters in Sustainable Development Program, including Dr. Glenn Galloway, Dr. Andrew Noss, and the members of the University of Florida MDP Cohort 6. Gratitude and acknowledgements extended to the host organization Southern Environmental Association, Placencia residents that provided their time, insight, expertise, community, and friendship during this process. This includes the fishing community, long time residents, business owners, operators, educators, and non-governmental networks.

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