Preregistration

From Global to Local: Structuring community-based monitoring in Northern Colombia using Essential Biodiversity Variables

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Study Information

Title	From Global to Local: Structuring community-based monitoring in Northern Colombia using Essential Biodiversity Variables
Short title	Pre-registration example Productivity and reproducibility class

Description Essential biodiversity variables have been created in order to harmonize monitoring efforts throughout the world. However, they have been mostly applied at global, national and regional scales. By using them at local scales, they can connect these wider range initiatives to more local scales. To keep track of biodiversity changes, monitoring is an important approach to inform about the status and trends of biodiversity. More specifically, community-based monitoring has the potential to connect the needs of the local communities to the importance of preserving biodiversity. The implementation of this tool empowers communities and supports the identification of requirements and conservation actions needed in the territory. A community-based monitoring scheme was proposed to local communities according to their interests and environmental issues identified in the area. They actively participate in projects related to the conservation, restoration or preservation in their territory.

Hypotheses This study is meant to be exploratory, and therefore is not hypothesis driven.

Design Plan

As part of the implementation of a community-based biodiversity monitoring scheme in Montes de María region in Colombia, a set of indicators selected by the communities, that aim to answer three monitoring questions of interests to the three local associations in the area were selected (Arce Plata et al., 2020). The three questions are:

1. Is forest restoration working?
2. What species are there in crops and in dry forests?
3. Difference between birds in monocultures, agroforestry zones and dry forests?

To calculate these indicators, seven monitoring methodologies were defined from which the members of the three associations will collect the data (Figure 1). Two methodologies associated with the measurement of precipitation and flow were added, because it was of interest to the three associations to know about the water and climate dynamics of their territory.

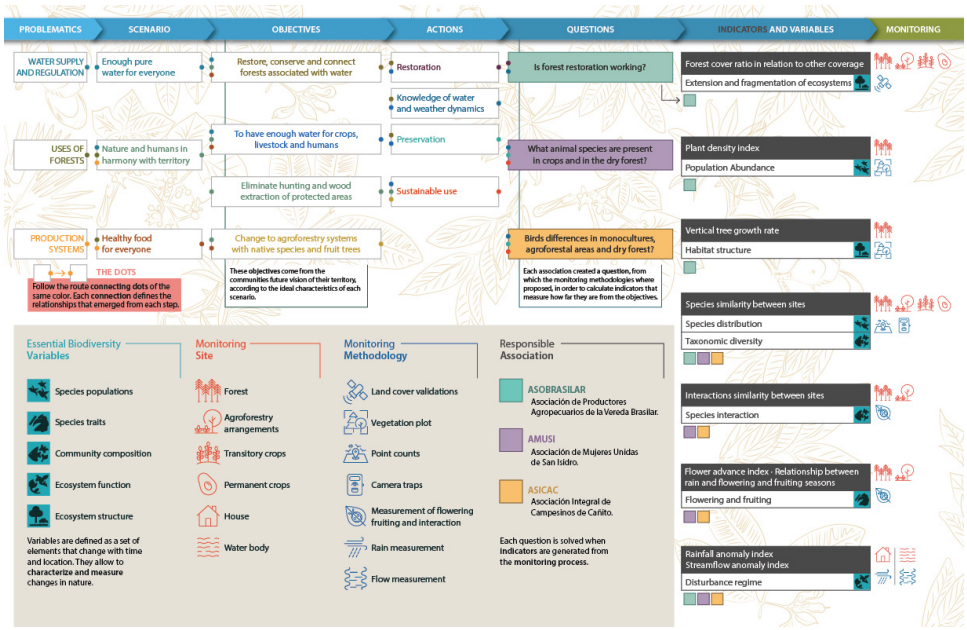

Figure 1: Figure 1. Summary of the key concepts and elements identified with the local communities

Study type This is an **Observational Study**. Data is collected from study subjects that are not randomly assigned to a treatment.

Blinding No blinding is involved in this study.

Study design From the seven methodologies proposed. Two have been considered first to be implemented first. :

1. Point counts (Method 03)
2. Rain measurement (precipitation) (Method 06)

Randomization This will not be a randomized study.

Sampling Plan

A plan for each methodology was established considering the daily activities of the local communities and a frequency is suggested according to the methods generally used.

Method 03. Point count

For this methodology, birds or mammals observed within a period of 15 minutes in

for this. In total three monitoring points will be established.

It is advised to carry out this monitoring daily at the same time, from which calculations can be made per week and per month. For this reason, it is recommended to locate the point in a place that is visited frequently (i.e. in front the house).

Existing data

Registration prior to creation of data. As of the date of submission of this research plan for preregistration, the data have not yet been collected, created, or realized.

Explanation of existing data

Pending.

Data collection procedures

Due to connection limitations in the area, the data collection will be done in paper forms, but there will be one person in charge to upload these data to a digital version of these forms created with KoboToolbox. The information uploaded to these forms can be downloaded to several formats, like csv, xls and others according to the type of data collected.

These data will be loaded to an Amazon Relational Database Service (RDS) where the data will be re-estructured to produce the results to show to the communities.

For the encoding of variables in the KoBoToolBox formats, the name of each question begins with two letters indicating the type of answer:

dt - for dates and times

nm - for numerical values

tx - for text type response

ct - for categorical responses

fl - for attachments

Each monitoring point has a code with the following structure: 01M01V003P001 (Methodology-Municipality-Vereda-Point), through this field the responses corresponding to a particular project can be filtered. A digit for the monitoring point boxes was increased since it was detected that it would quickly reach more than 100, due to methodologies such as flowering and counting points.

	Additional data for the monitoring points like coordinates, location and observations will be registered on a form called "Monitoring commitments".
Sample size	Enter your response here.
Sample size rationale	Enter your response here.
Stopping rule	Enter your response here.

Variables

Manipulated variables	Enter your response here.
Measured variables	Method 3. Species occurrences, feeding behavior and strata used by monitoring site. Method 6. Precipitation data in cm^3.
Indices	Method 03. Morisita-Horn similarity index Method 06. Rainfall anomaly index

Analysis Plan

Statistical models	No response
Transformations	No response
Inference criteria	

Data exclusion	No response
Missing data	Pending
Exploratory analyses (optional)	Outputs from these data have been planned to be of use by the communities, therefore to the moment no complex transformations and processes have been planned in order to have a clear output that they can use for their processes.

Other

Other (Optional)	The local communities have agreed to participate on this project and have given the authorization to register the data in order to show them the processed results in a decision support system developed by the Alexander von Humboldt Institute in Colombia, called Biotablero.

References

Arce Plata, M. I., Herrera-Varon, Y., Gutiérrez Montoya, C., & Londoño Murcia, M. C. (2020). *Monitoreo comunitario de la biodiversidad en Montes de María.* Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.