Presidencia de la República Dominicana
Consejo Nacional para el Cambio Climático
y Mecanismo de Desarrollo Limpio

UNEP DTU PARTNERSHIP

CAT-Adaptation:

Basic national methodology for the agricultural sector: focus on the Banana agrosystem

Dominican Republic

Prepared by: National Council for Climate Change and Clean Development Mechanism

I. I. INTRODUCTION

The Dominican Republic in its political constitution establishes adaptation as a national priority, this is, to guarantee a territorial development that is resilient to Climate Change [1]. Likewise, the National Development Strategy (END-2030)[2] considers adaptation to Climate Change as one of the axes for the achievement of development. The decree that formalizes the National Climate Change Policy [3] and empowers the Ministry of Economy, Planning and Development (MEPYD), Ministry of Environment and Natural Resources and the National Council for Climate Change and Clean Development Mechanism (CNCCMDL) for the mainstreaming of the climate change issue, to reduce vulnerability and achieve low emission growth.

In this sense, ICAT has been supporting the definition of the Transparency Framework for the Dominican Republic, to guarantee an integrated and efficient climate action that facilitates the follow-up of the country's actions established in its Nationally Determined Contribution (NDCs), which responds to priorities and needs, in accordance with good international practices.

The adaptation component is working on the development of a series of methodological tools to support the development of the monitoring and evaluation framework for adaptation actions. For the purposes, a series of basic tools have been identified to support the establishment of a Monitoring and Evaluation System in the agricultural sector that will support the resilience objectives, based on the elements identified in the case study (with potential to replicate in other agrosystems) that, in addition to responding to agricultural sector strategies, the National Development Strategy and contributing to identify progress in achieving the Sustainable Development Goals.

[1] Art. 194 of the Political Constitution of the Dominican Republic. Available for download at: https://www.one.gob.do/Multimedia/Download?ObjId=75805
[2] Available for download at: http://economia.gob.do/mepyd/wp-content/uploads/archivos/end/marco-legal/ley-estrategia-nacional-de-desarrollo.pdf
[3] Available for download at: http://economia.gob.do/mepyd/wp-content/uploads/archivos/planificacion/politica-cambio-climatico-julio-2016.pdf

II. II. METHODOLOGY

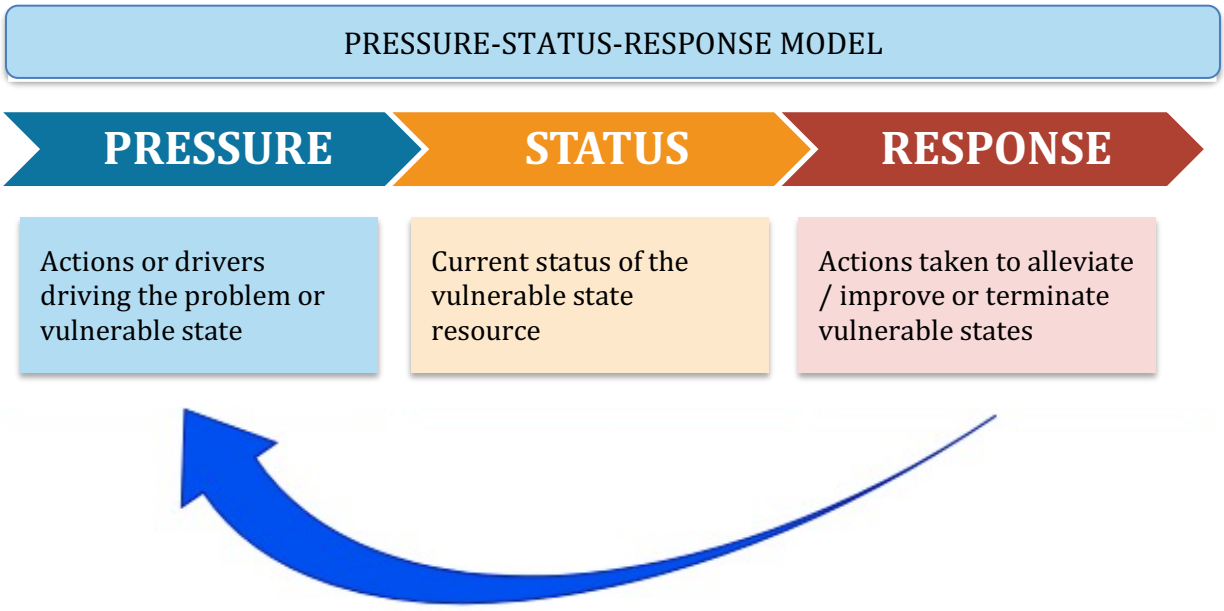
The identification and selection of the methodology was mainly based on literature review and consultation with experts, based on the experience of the Dominican Republic. For the purposes, the following criteria must be met.

1) That allows obtaining information on the coverage of the developed adaptation actions.
2) That allows to evaluate the effectiveness of the measures in reducing vulnerability or increasing adaptive capacity.
3) Focus from bottom to top (Bottom-up)
4) Respond to the defined adaptation objective
5) That it serves as support and is compatible with other systems (ODS, END, Mitigation, others)
6) To support decision making with timely information
7) That disposes feedback processes of the lessons learned
8) 8) Easy implementation

Some of the experiences that served as a basis were the execution of the GEO-Dominican Republic report, which follows the Global Environmental Outlook (GEO) methodology which analyzes environmental trends considering a broad set of social, economic and environmental variables based on the Simplified Pressure-State-Response (PER) model, in addition to several methodological applications for sustainability analysis and evaluation as a model for monitoring and monitoring indicators of water resource sustainability in the agricultural sector, among others.

III. III. PRESSURE-STATUS-RESPONSE MODEL

The Pressure-State-Response (PER) scheme is based on a logic of causality, where human activities and climate drivers exert pressure and change the quality and quantity of the resource (state), likewise, society responds to these changes to through environmental, economic and sectoral policies (responses). It is important to note that, although it is a logical scheme in terms of the relationship between pressures, state and actions, it suggests a linear relationship of the interaction between human activities and the environment, which is not usually true and hides the complex aspects of These interactions. In this organizational scheme, the indicators are classified into three groups: pressure, status and response:



Pressure Indicators: They try to describe the pressures exerted by different human activities and the influence of climate parameters on resources. These are classified in turn into two groups: the first considers the direct pressures on the environment, frequently caused by human activities, the second takes into account the variations of the climate parameters that modify the conditions of resources or activities under analysis.

State Indicators: They try to respond to vulnerable states that are affected, in varying quality, quantity of resources. These should provide information on the situation of vulnerable states and their changes over time.

Response Indicators: They present the efforts made by society, institutions or governments aimed at reducing vulnerable states or increasing resilience. In general, response actions are directed towards two objectives: i) pressure agents and ii) state variables.

ADJUSTED MONITORING AND EVALUATION SYSTEM

The analysis scheme that is used for the construction of the Model, has been carried out based on literature review and consultation with experts and is explained in the following graphic:

WATER

PRESSURE → **STATUS** → **RESPONSE**

- Human Activity – Agriculture – Flood Irrigation System not optimized
- Climate Change – Reduction of usable flows for irrigation
- Climate Change – Precipitation Reduction

→ Water Availability in Irrigation Canals

→
- Crop Calendar
- Optimization / Change of Irrigation Systems (Intra plot)
- Construction / Rehabilitation of Irrigation Infrastructure (Irrigation Channels and Water Works
- Crop Change and Varieties (Biotechnology and Agrotec Validation)
- Genetic selection of drought resistant varieties

SOIL

- Human Activity – Agriculture – Fertilizer Abuse
- Climate Change – Low availability of moisture in soil
- Climate Change – Evapotranspiration Increase

→ Degradation and aridization of arable land

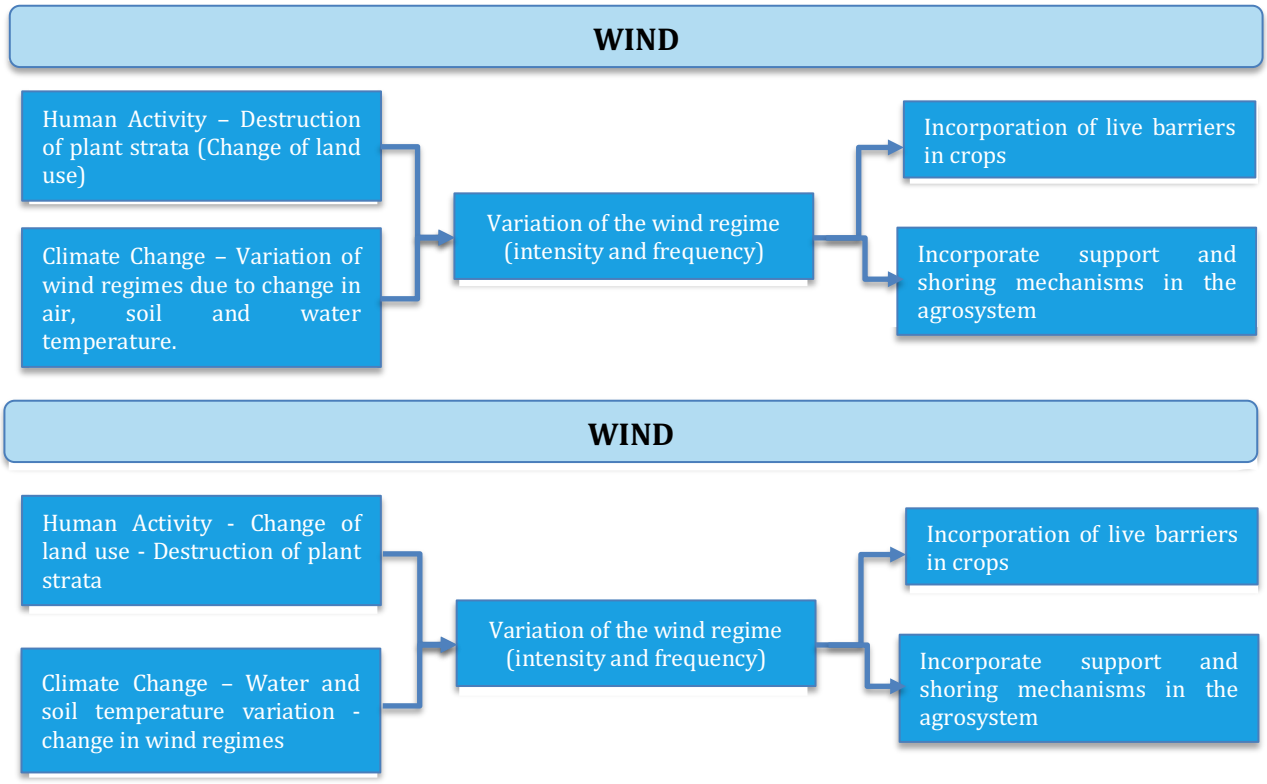
→
- Soil inoculation with organic material
- Introduction of animal species compatible with the agrosystem to generate biodiversity
- Increase of species for soil coverage

PEST AND DESEASES

- Human Activity - Agriculture - selection of flooding soils
- Climate Change – Soil saturation and flooding of arable land (Increase in Precipitation)

→ Increase of pests due to waterlogged soils

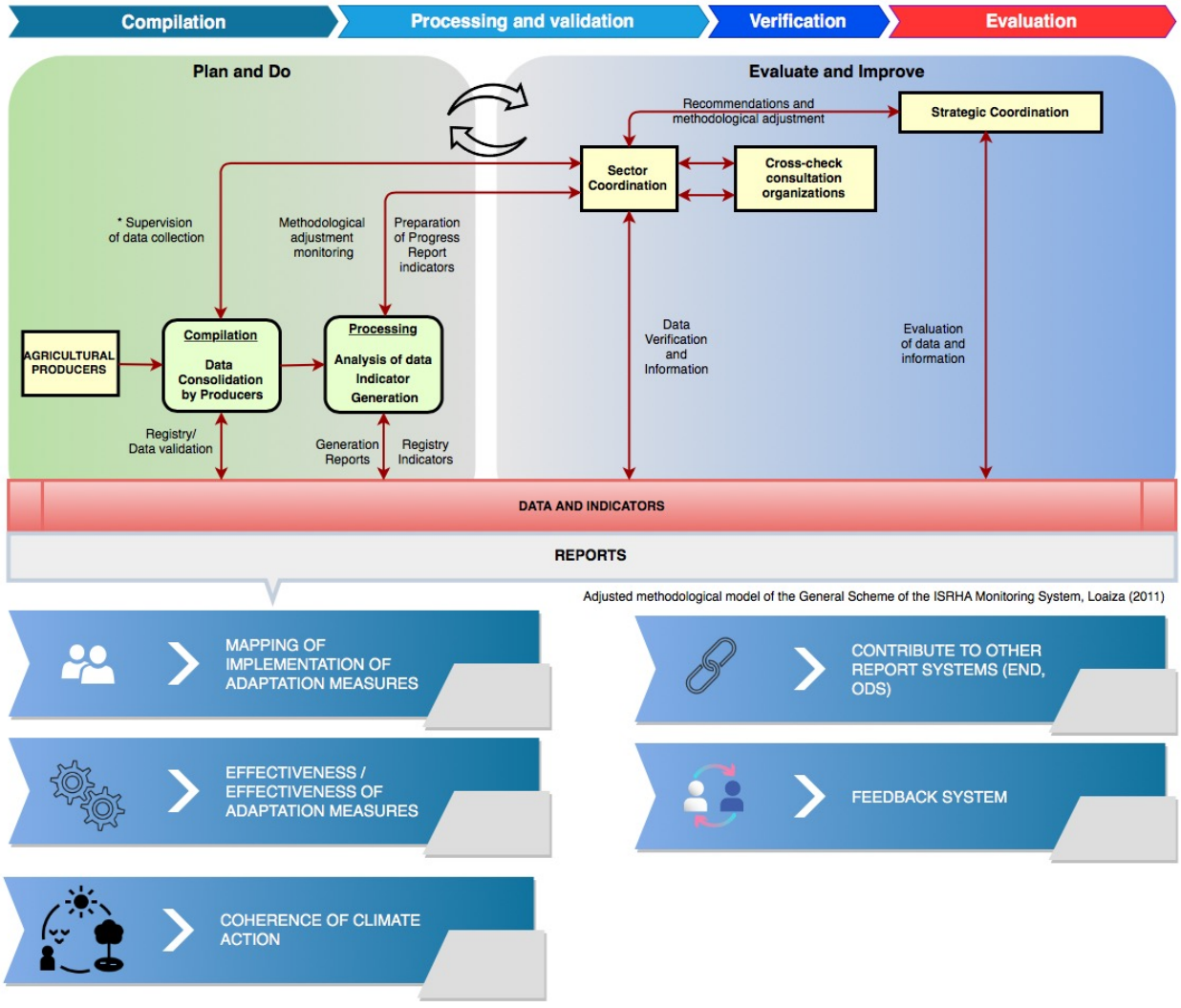
→
- Good practices aimed at integrated pest management
- Genetic selection of pest resistant varieties
- Early Alert Fumigation Protocol Optimization



The construction of the adjusted Monitoring and Evaluation model is based on the proposed methodological approach and is adjusted based on the case study selected, and the consultations with experts from the Banana sector in the Dominican Republic, to meet the criteria of the methodology to be used.

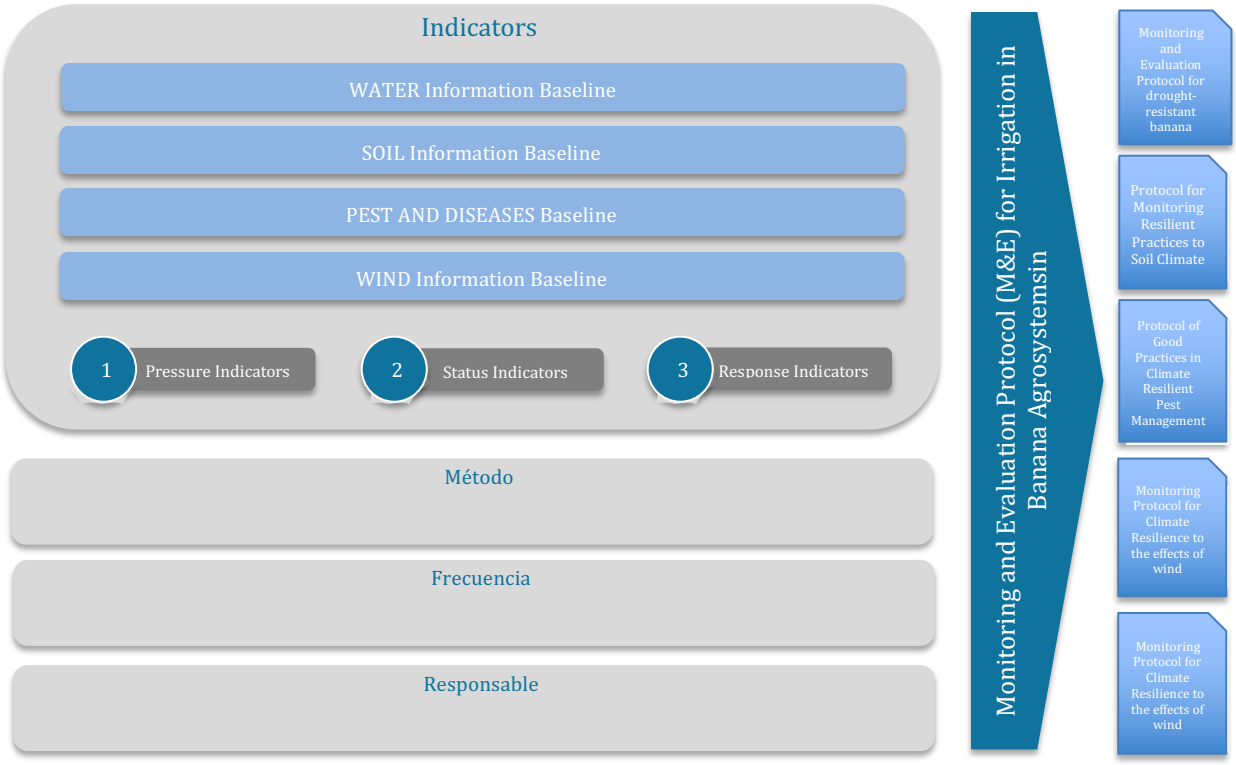
In the proposed model, it maintains a bottom-up approach, since it intends to generate information from producers, through the levels of information / data consolidation, data analysis and construction of indicators, sector coordination and strategic coordination, from where it is intended return with the required adjustments, from all levels of the information chain.

Another aspect that stands out is the collaborative construction of the database and information of the system, where all contribute to the information base, with predefined roles and identify some basic mechanisms of quality control of information for guarantee the integrity of the system.



The final expectation of the system is to be able to generate a series of reports that provide detailed information on the implementation of the measures, responses aimed at adapting the sector. In addition, allow the effectiveness and effectiveness of these response measures to be assessed in relation to the vulnerable states identified or the variation of the vulnerable states over time, ensure the coherence of climate action, guaranteeing feedback and serving as a reference or interoperating with other existing measurement systems.

The idea is to start from an analysis of the current situation with indicators (baseline) that can be used to infer progress over time, as well as build protocols based on information exchange agreements that guarantee the standardization of information with the one that feeds the system.

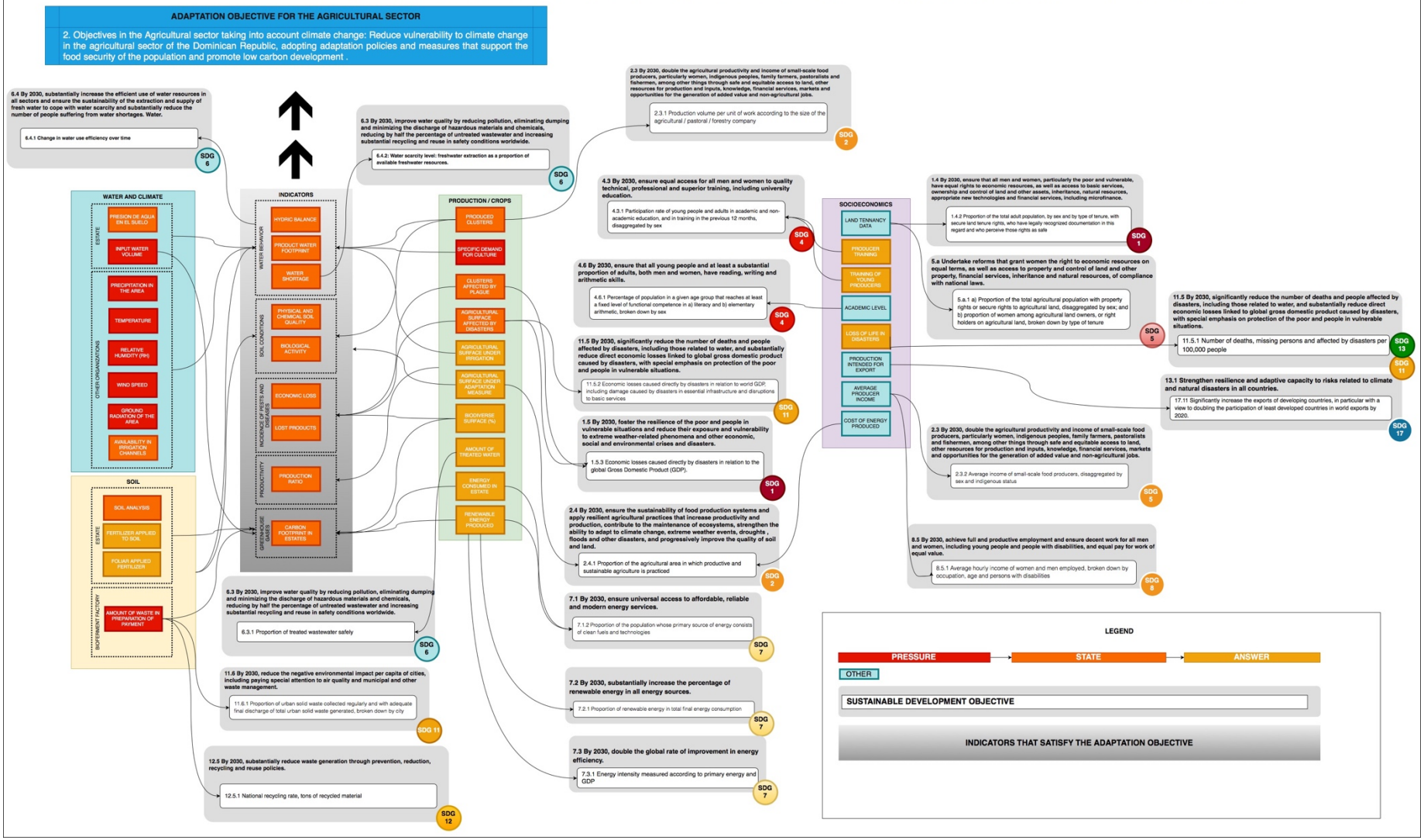


Recapitulating the Adaptation Framework of the Agricultural sector, where it is emphasized that the objective of adaptation is:

"Reduce vulnerability to climate change in the agricultural sector of the Dominican Republic, adopting adaptation policies and measures that support the food security of the population and promote low carbon development"

This leads us to the identification of a series of "key indicators" that guarantee support for achieving this objective. From the Case Study and consultation with the experts, a series of parameters and indicators that contribute to the construction of these key indicators have been identified, as seen in the following graph.

PARAMETERS AND INDICATORS OF THE BANANA AGROSYSTEM M&E



In the previous graph, Pressure, State and Response parameters and indicators can be identified, as well as a series of "key indicators" to contribute to the adaptation objective. As well as the contributions or links of each one of the parameters and indicators identified within the Sustainable Development Goals.