



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



CAT-Adaptation: **Basic national methodology for the** **agricultural sector: focus on the** **Banana agrosystem** **Dominican Republic**

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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 Change¹. 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 Policy³ 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

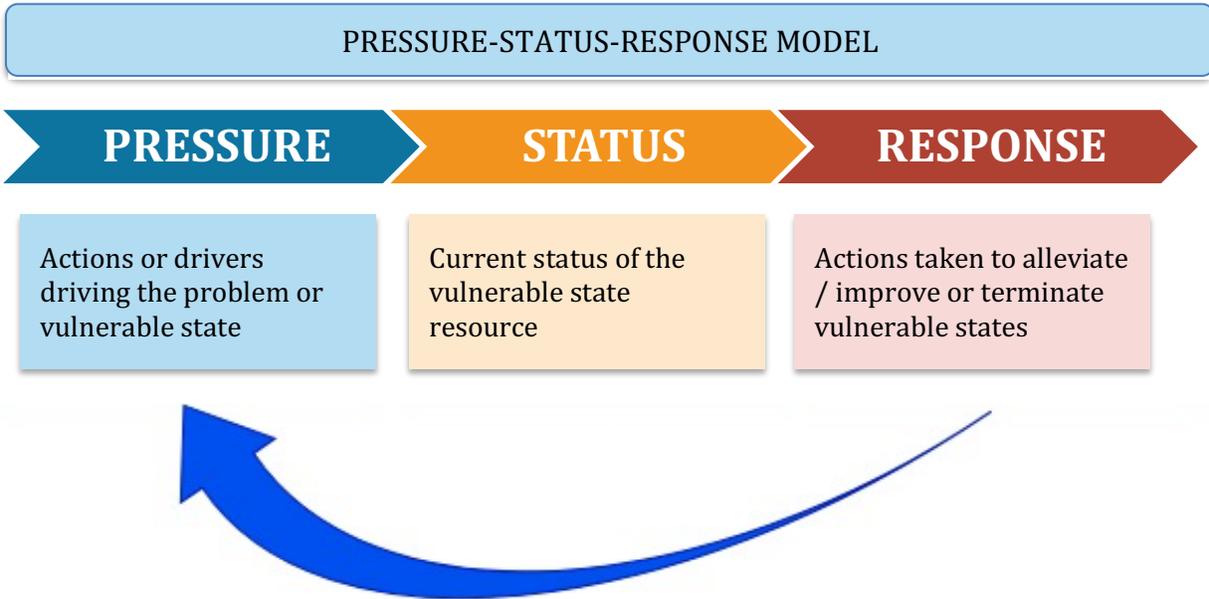
The identification and selection of the methodology was mainly based on literature review and consultation with experts, based on the experience of the Dominican Republic. For the purposes, the following criteria must be met.

- 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.

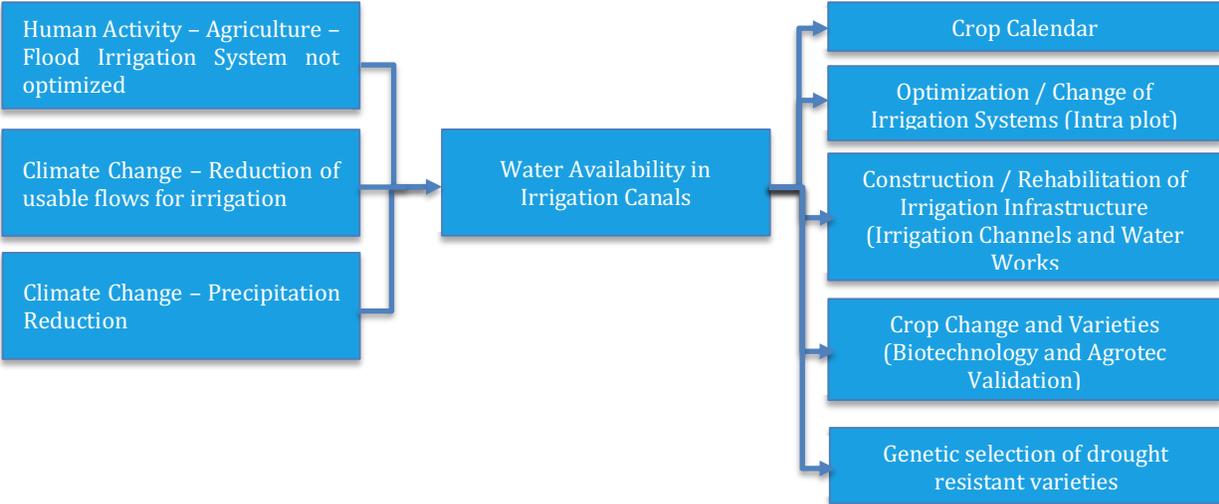
Response Indicators: They present the efforts made by society, institutions or governments aimed at reducing vulnerable states or increasing resilience. In general, response actions are directed towards two objectives: i) pressure agents and ii) state variables.

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

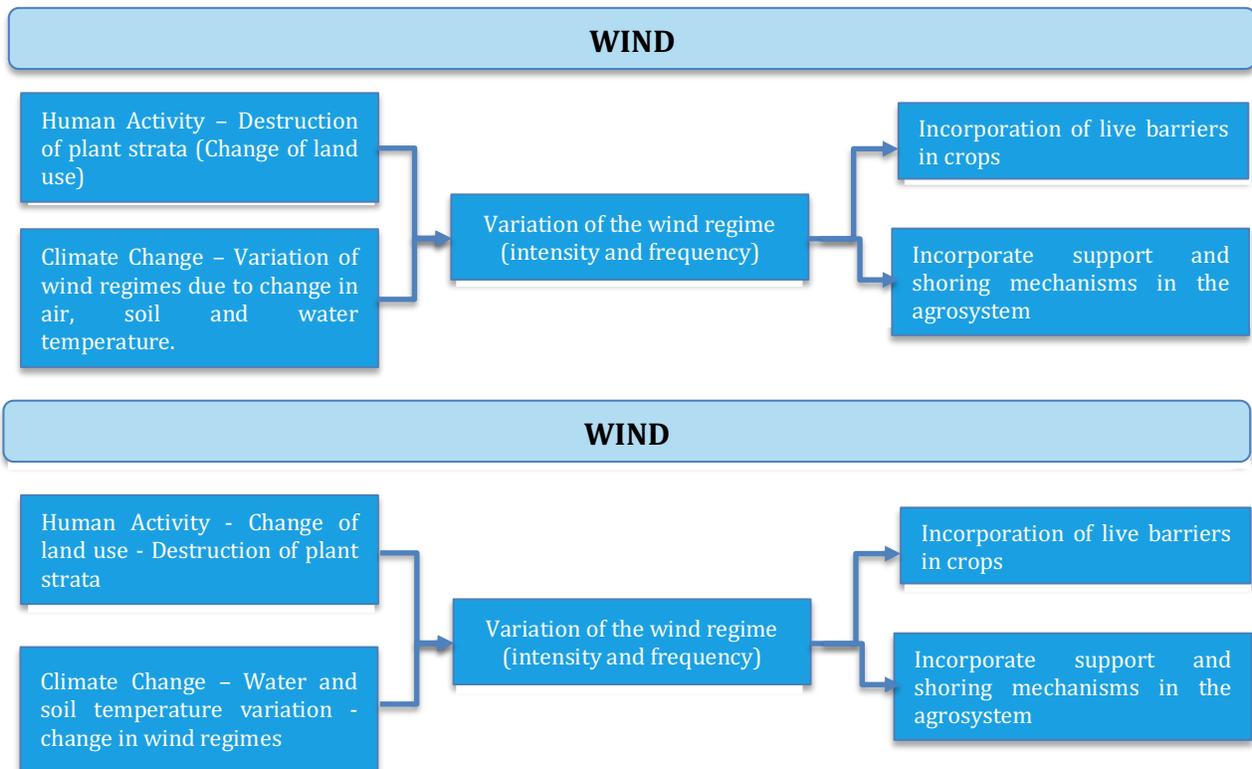


SOIL



PEST AND DISEASES

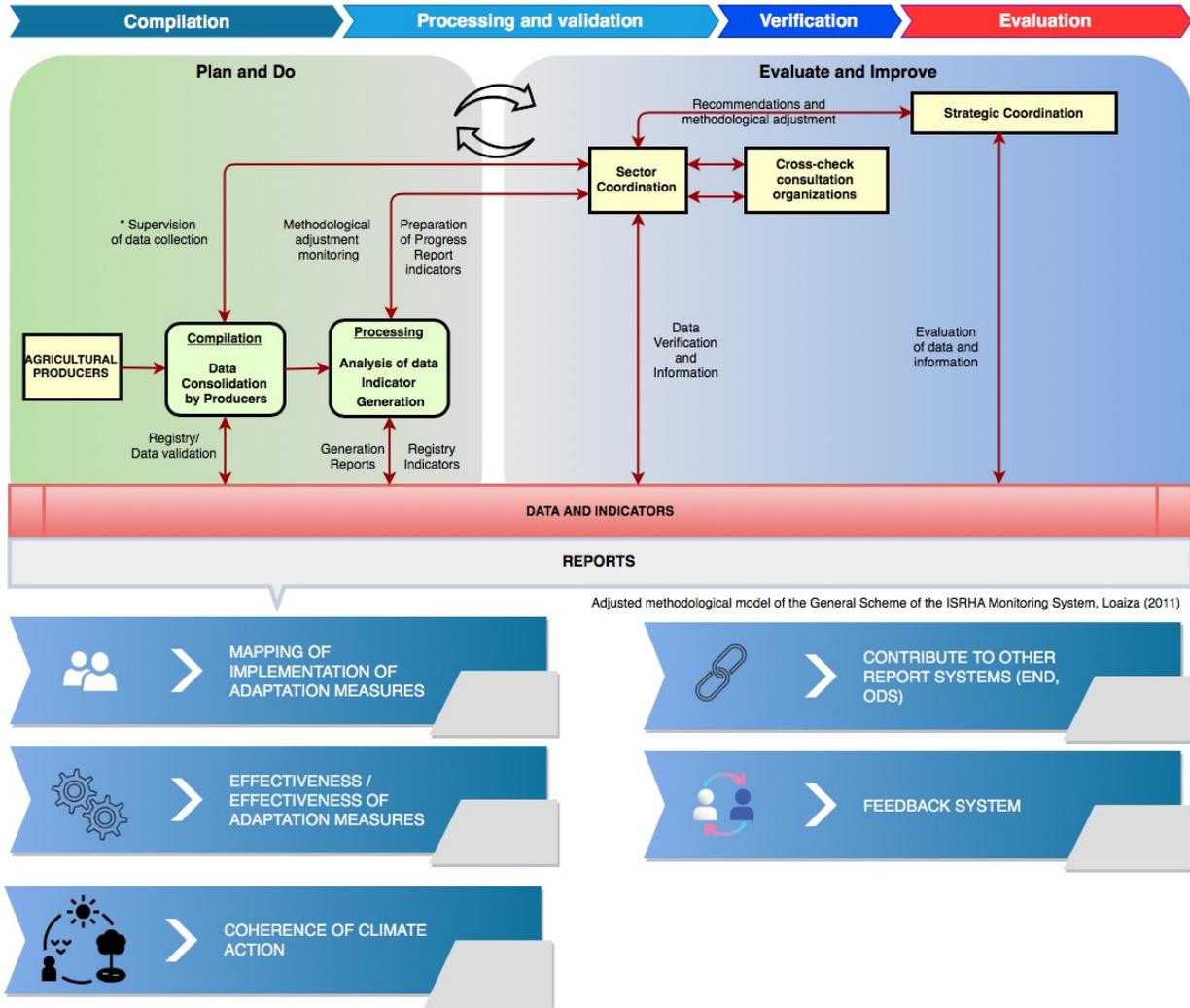




The construction of the adjusted Monitoring and Evaluation model is based on the proposed methodological approach and is adjusted based on the case study selected, and the consultations with experts from the Banana sector in the Dominican Republic, to meet the criteria of the methodology to be used.

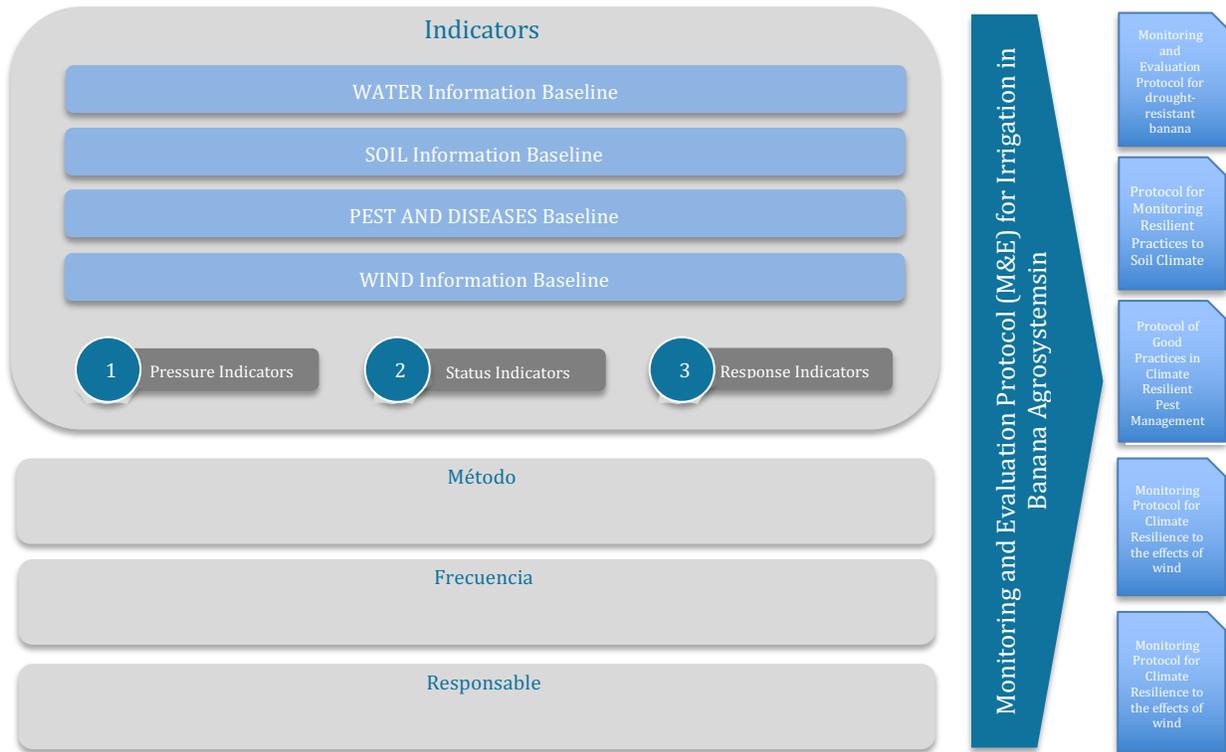
In the proposed model, it maintains a bottom-up approach, since it intends to generate information from producers, through the levels of information / data consolidation, data analysis and construction of indicators, sector coordination and strategic coordination, from where it is intended return with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

ADAPTATION OBJECTIVE FOR THE AGRICULTURAL SECTOR

2. Objectives in the Agricultural sector taking into account climate change: 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.

6.4 By 2030, substantially increase the efficient use of water resources in all sectors and ensure the sustainability of the extraction and supply of fresh water to cope with water scarcity and substantially reduce the number of people suffering from water shortages. Water.

6.4.1 Change in water use efficiency over time

SDG 6



6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing the discharge of hazardous materials and chemicals, reducing by half the percentage of untreated wastewater and increasing substantially recycling and reuse in safety conditions worldwide.

6.4.2: Water scarcity level: freshwater extraction as a proportion of available freshwater resources.

SDG 6

2.3 By 2030, double the agricultural productivity and income of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fisherfolk, among other things through safe and equitable access to land, other resources for production and inputs, knowledge, financial services, markets and opportunities for the generation of added value and non-agricultural jobs.

2.3.1 Production volume per unit of work according to the size of the agricultural / pastoral / forestry company

SDG 2

4.3 By 2030, ensure equal access for all men and women to quality technical, professional and superior training, including university education.

4.3.1 Participation rate of young people and adults in academic and non-academic education, and in training in the previous 12 months, disaggregated by sex

SDG 4

4.6 By 2030, ensure that all young people and at least a substantial proportion of adults, both men and women, have reading, writing and arithmetic skills.

4.6.1 Percentage of population in a given age group that reaches at least a level of functional competence in literacy and in arithmetic, broken down by sex

SDG 4

11.5 By 2030, significantly reduce the number of deaths and people affected by disasters, including those related to water, and substantially reduce direct economic losses linked to global gross domestic product caused by disasters, with special emphasis on protection of the poor and people in vulnerable situations.

11.5.2 Economic losses caused directly by disasters in relation to world GDP including damage caused by disasters in essential infrastructure and disruptions to basic services

SDG 11

1.5 By 2030, foster the resilience of the poor and people in vulnerable situations and reduce their exposure and vulnerability to extreme weather-related phenomena and other economic, social and environmental crises and disasters.

1.5.3 Economic losses caused directly by disasters in relation to the global Gross Domestic Product (GDP)

SDG 1

2.4 By 2030, ensure the sustainability of food production systems and apply resilient agricultural practices that increase productivity and production, contribute to the maintenance of ecosystems, strengthen the ability to adapt to climate change, extreme weather events, droughts, floods and other disasters, and progressively improve the quality of soil and land.

2.4.1 Proportion of the agricultural area in which productive and sustainable agriculture is practiced

SDG 2

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services.

7.1.2 Proportion of the population whose primary source of energy consists of clean fuels and technologies

SDG 7

7.2 By 2030, substantially increase the percentage of renewable energy in all energy sources.

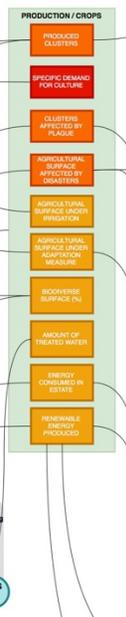
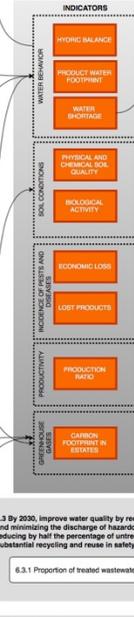
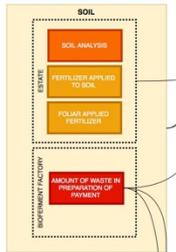
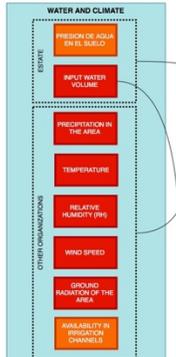
7.2.1 Proportion of renewable energy in total final energy consumption

SDG 7

7.3 By 2030, double the global rate of improvement in energy efficiency.

7.3.1 Energy intensity measured according to primary energy and GDP

SDG 7



6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing the discharge of hazardous materials and chemicals, reducing by half the percentage of untreated wastewater and increasing substantially recycling and reuse in safety conditions worldwide.

6.3.1 Proportion of treated wastewater safety

SDG 6

11.8 By 2030, reduce the negative environmental impact per capita of cities, including paying special attention to air quality and municipal and other waste management.

11.8.1 Proportion of urban solid waste collected regularly and with adequate final discharge of total urban solid waste generated, broken down by city

SDG 11

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse policies.

12.5.1 National recycling rate, tons of recycled material

SDG 12



1.4 By 2030, ensure that all men and women, particularly the poor and vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control of land and other assets, inheritance, natural resources, appropriate new technologies and financial services, including microfinance.

1.4.2 Proportion of the total adult population, by sex and by type of tenure, with secure land tenure rights, who have legally recognized documentation in this regard and who perceive these rights as safe

SDG 1

5.a Undertake reforms that grant women the right to economic resources on equal terms, as well as access to property and control of land and other property, financial services, inheritance and natural resources, of compliance with national laws.

5.a.1 a) Proportion of the total agricultural population with property rights to secure rights to agricultural land, disaggregated by sex, and b) proportion of women among agricultural land owners, or right holders on agricultural land, broken down by type of tenure

SDG 5

11.5 By 2030, significantly reduce the number of deaths and people affected by disasters, including those related to water, and substantially reduce direct economic losses linked to global gross domestic product caused by disasters, with special emphasis on protection of the poor and people in vulnerable situations.

11.5.1 Number of deaths, missing persons and affected by disasters per 100,000 people

SDG 11

13.1 Strengthen resilience and adaptive capacity to risks related to climate and natural disasters in all countries.

17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the participation of least developed countries in world exports by 2020.

SDG 17

2.3 By 2030, double the agricultural productivity and income of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fisherfolk, among other things through safe and equitable access to land, other resources for production and inputs, knowledge, financial services, markets and opportunities for the generation of added value and non-agricultural jobs.

2.3.2 Average income of small-scale food producers, disaggregated by sex and indigenous status

SDG 5

8.5 By 2030, achieve full and productive employment and ensure decent work for all men and women, including young people and people with disabilities, and equal pay for work of equal value.

8.5.1 Average hourly income of women and men employed, broken down by occupation, age and persons with disabilities

SDG 8

LEGEND



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.