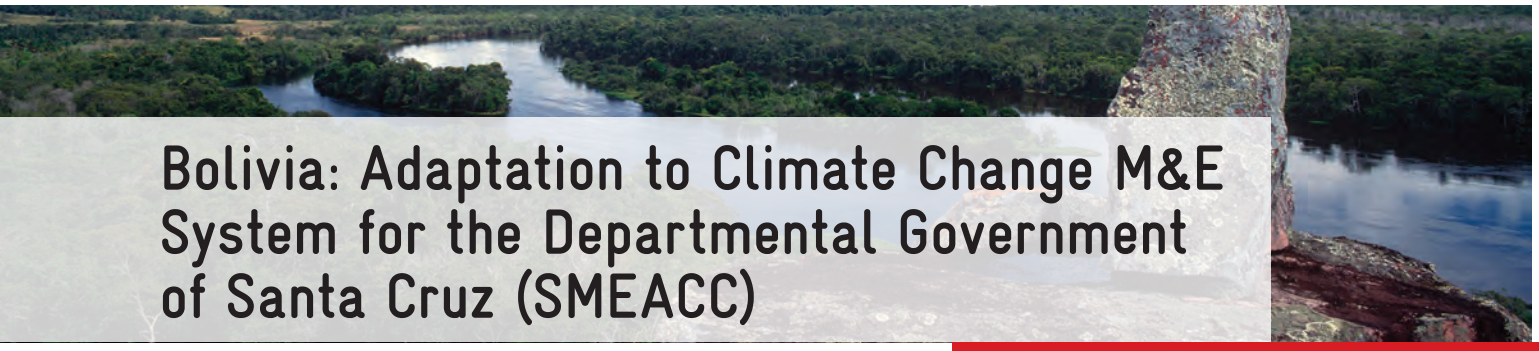

Bolivia: Adaptation to Climate Change M&E System for the Departmental Government of Santa Cruz (SMEACC)

1. Context

Policy context

In 2014, **the Autonomous Departmental Government of Santa Cruz (ADGSC)** published the Economic and Social Departmental Plan for Development, which mentioned climate change impacts as a present concern. Furthermore, it acknowledged the need to identify and implement policies and actions for reducing the negative effects of climate change on biodiversity, agriculture, livestock and water availability for different uses.

In that context, the ADGSC under its **Departmental Secretariat of Sustainable Development and Environment (DSSDE)** created the Climate Chance Department Program (CCDP). The CCDP elaborated and implemented the Climate Change Department Policy and the Adaptation to Climate Change Strategy. Following the strategy's guidelines, the CCDP designed the **Adaptation to Climate Change Monitoring and Evaluation System (SMEACC)**. In its initial phase, the SMEACC, identified five sectorial programs implemented by the ADGSC, which in their conception did not consider explicitly adaptation to climate change. Nevertheless, after an analysis, some of the activities of the five programs had the potential to reduce the vulnerability or increase the resilience to climate change, through institutional capacity building and training.

In order to know the effectiveness of those activities in reducing the vulnerability to climate change, the ADGSC identified the need to develop the SMEACC.

Purpose of the M&E System

The purpose of SMEACC is:

1. **to learn**, in order to understand which adaptation needs have been properly attended and which require additional efforts;
2. **to improve adaptation management**, to verify if the five key sectorial programs are on track to contribute to the adaptation to climate change or, if required, to make adjustments on their activities. Also, monitoring and evaluation of the reduction process of vulnerability to climate change will produce lessons learned and best practices that will contribute to improve the development of new policies and plans that are in the process of elaboration or implementation; and
3. **to account** for the use of public resources. The improved understanding of why and how adaptation measures prove to be efficient will be reported to the decision makers to strengthen the governance process.

M&E Guidebook for national adaptation M&E systems

An M&E guidebook by GIZ in collaboration with the Adaptation Committee, the LDC Expert Group and IISD outlines key considerations for the development of country-specific adaptation M&E systems. It is structured along four building blocks on which this factsheet is based:

- **Context:** what is the policy context and purpose of undertaking M&E?
- **Content:** what information is required to address the purpose?
- **Operationalization:** how will the information be gathered and what are the institutional arrangements?
- **Communication:** how is the generated information used and disseminated?

GIZ & IISD (2015): Developing national adaptation monitoring and evaluation systems: A guidebook.

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Scale: level of application and aggregation

The system will operate on a subnational level, inside the boundaries of the Santa Cruz Department and the aggregation level is horizontal, composed by five key sectorial programs.

Objectives of the five key sectorial programs that SMEACC works with:

Fire Management Program: establish strategic and operative guides for the implementation of an adequate fire management, reduce the quantity and magnitude of forest fires and avoid negative effects for the environment, economy and society.

Climate Change Department Program: implement adaptation and mitigation measures to increment the population resilience to climate change.

Good Livestock Practices Program: increase the well-being of farmers, through an improvement of facilities, hygiene and management of the farms, the health and biosecurity of the cattle.

Irrigation Strengthening Program: strengthen the monitoring, supervision and evaluation of the irrigation projects' activities in order to have an adequate control of the project elaboration, construction and operation, and assure the quality of the irrigation systems.

Natural Conservation Units Program: protect and maintain the natural resources in protected areas in the department. Based on the adequate management of those areas, it focusses on the sustainability and stakeholder participation to improve the living conditions of the people that live in protected areas.

2. Content

Establishment process

In the period between November 2015 and April 2017, the SMEACC was conceptualized under the coordination of the Climate Change Department Program of the DSSDE. The process included the phases and activities as shown in figure 1.

Focus and approach

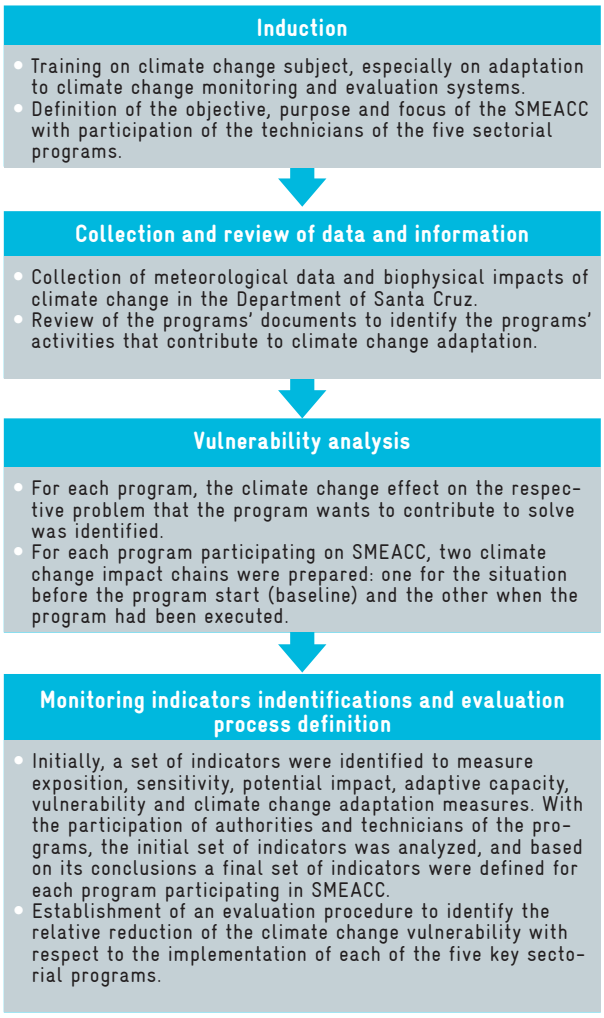
The SMEACC design has a hybrid approach, since it focusses not only on processes but also on adaptation results. The system monitors the implementation process of the programs, especially of those activities that are considered to reduce climate change vulnerability or increase the climate resilience in the frame of the scope of each program. In addition, the SMEACC evaluates the results of the adaptation process, quantifying the vulnerability changes over time.

Indicators

The SMEACC was designed as a scalable system, allowing the inclusion in the medium or long term of all the remaining programs of the Autonomous Departmental Government of Santa Cruz, which are currently implementing. To make this possible, the system and its indicators were organized in five subsystems, namely: (i) Meteorological variables; (ii) Irrigation Strengthening; (iii) Climate Change Departmental Program; (iv) Good livestock practices; (v) Fire management; and (vi) Natural Conservancy Units. From all subsystems mentioned, the Meteorological Variable Subsystem is the core of the SMEACC, as it directly interacts with the others subsystems.

In total, the SMEACC makes use of 42 monitoring indicators, as expressed in table 1.

Figure 1 Key phases and activities of the conceptualization of the SMEACC



Gender considerations

Even though Bolivia in general and Santa Cruz in particular have already been working to increase gender equity, it is necessary to measure that process in relation to climate change impacts and climate change adaptation. Therefore, SMEACC will monitor its indicators by collecting data for women and men differentially. Besides that, during the first three years of system implementation, the system will analyze the way in which women would be more affected by climate change, in order to include some specific monitoring indicators in the future.

Table 1 SMEACC's monitoring indicators by subsystems

Subsystem	Monitoring indicator type						Total
	Climatic exposure	Climatic Vulnerability	Potential Impact	Adaptation measurement	Scope	External pressure	
Meteorological Variables	4						4
Fire Management Program		1	1	5			7
Climate Change Department Program		1	3	4			8
Good Livestock Practices Program		1	5	2	1		9
Irrigation Strengthening Program		1	3		1		5
Natural Conservation Units Program		1		2		6	9
Total	**4**	**5**	**12**	**13**	**2**	**6**	**42**

3. Operationalization

Data collection and analysis

From the start, it was defined in a participatory way among the five key sectorial programs that the SMEACC's monitoring indicators must only use the data and/or information collected or generated by the programs themselves, in order to reduce financial and human resources. That agreement permits to create better conditions for the system's implementation.

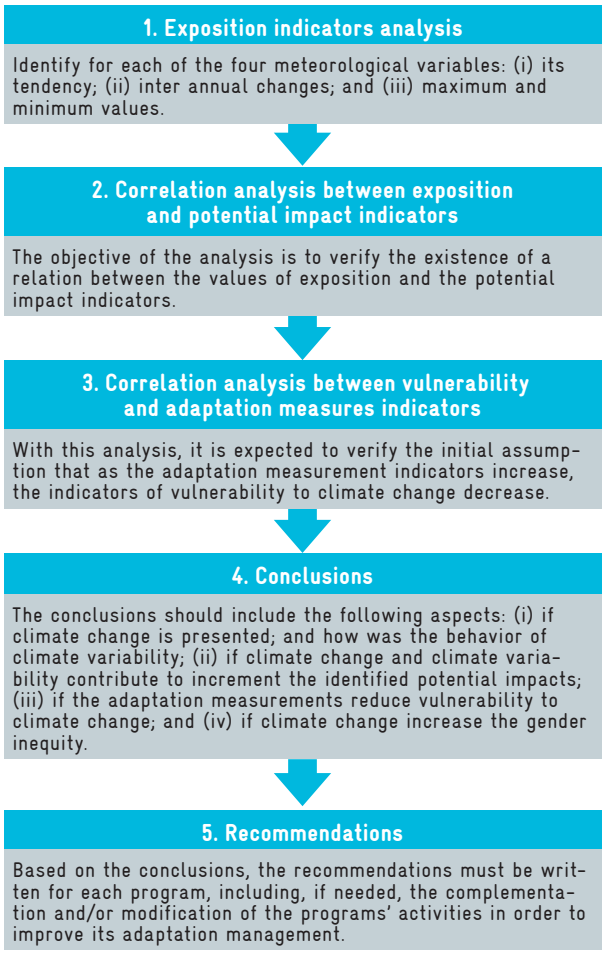
During the initial phase of three years, each program will annually generate data and/or information required to feed in the monitoring indicators. They will be submitted directly to the Climate Change Department Program (CCDP) for its processing. In addition, to generate data and information to feed their own monitoring indicators, CCDP is in charge of collecting and processing the meteorological data. This includes the anomalies of annual precipitation, temperature, wind speed and relatively humidity.

The annual monitoring of the 42 monitoring indicators of SMEACC, will allow not only to register the progress in the implementation of adaptation measurements, but also the behavior of the exposition, potential impact, adaptive capacity and vulnerability to climate change indicators. Every three years, there will be an evaluation of the adaptation to climate change process with the objective to measure the effectiveness and results of that process. The evaluation will be carried out by CCDP in conjunction with each of the sectorial programs, and will adhere to the steps shown in figure 2.

Institutional arrangements

For the SMEACC operation, three types of roles were established:

Figure 2 Activities included in the adaptation to climate change evaluation procedure.



System administrator: During the initial phase, which endured the first three years, the administration will be responsible for the CCDP. After the first 'system adjustment', the administrative role will pass to the Planning Direction of the Autonomous Departmental Government of Santa Cruz.

Data providers. The five key sectorial programs will be the data providers. Additionally, the Hydrological and Meteorological National Service will be the provider of meteorological data.

User. During the first three years of SMEACC implementation (initial phase), the system users will be staff that works in the Autonomous Departmental Government of Santa Cruz.

Resources needed

During the first three years of SMEACC operation, it is expected that there is no need to use additional financial and human resources besides the one that each program currently has. After the first 'system adjustment', based on the program resource availability, additional resources could be required to generate new specific indicators.

4. Reporting and outlook

Outputs and reporting

At the beginning of the SMEACC operation, the reports generated by the system will be internally distributed in the Autonomous Departmental Government of Santa Cruz (ADGSC). The updated monitoring indicators spreadsheet for each sectorial program corresponding to its subsystem and the Meteorological Variable Subsystem will be submitted annually. In addition, every third year, an 'Evaluation Report' will be prepared, and submitted to the authorities of ADGSC and the program coordinators.

At least once a year, the CCDP, as system administrator, will inform the inhabitants of Santa Cruz on the progress made on the SMEACC implementation as well as on some results generated by the system. This will be made possible through a digital publication prepared by CCDP, called 'UXIAMPAE' (which means in the Besiro native language 'Good News').

Lessons to date

During the design phase of SMEACC and the first months of its implementation some lessons could be learned:

- Even though it is easy to perceive the climate change impacts in Santa Cruz, the process of defining the monitoring indicators was not an easy task. For instance, at the beginning, there was a restriction established, to use only the data and/or information normally collected or generated by each program.
- The lack of historical data of most of the monitoring indicators of SMEACC, precluded to know the sensitivity of each indicator to climate change exposure and climate change impacts.
- The current SMEACC design marks not the end of the process, but its beginning, since it is required to improve the design every third year in the 'System Adjustment'. In order to better achieve the purpose of the SMEACC, the relevance of all indicators and the evaluation procedures will be reviewed.

What's next?

Albeit the budget constraints that the Autonomous Departmental Government of Santa Cruz is currently facing, the compromise and the effort of the five key sectorial programs, the inclusion of the SMEACC as part of the Climate Change Adaptation Department Strategy and the Institutional Strategy Plan of the ADGSC permitted, in a participative manner, the design of the system, its operation, its scalability and a continuous improvement. The SMEACC could be considered as the first adaptation to climate change monitoring and evaluation system at departmental level that will support the decision taking in order to reduce the climate change impacts.

For further information

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- Autonomous Departmental Government of Santa Cruz, Productive Development Secretariat. Responsible of the sectorial programs: PFR y PBPP.

This factsheet is part of a **series of factsheets about national adaptation M&E systems.** The series was initially published as part of the 2014 study 'Monitoring and Evaluating Adaptation at Aggregated Levels: A comparative analysis of ten systems' by GIZ & IISD. All country factsheets are available on www.AdaptationCommunity.net under 'Monitoring & Evaluation'.

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