

# CLIMATE SMART LIVESTOCK PROJECT



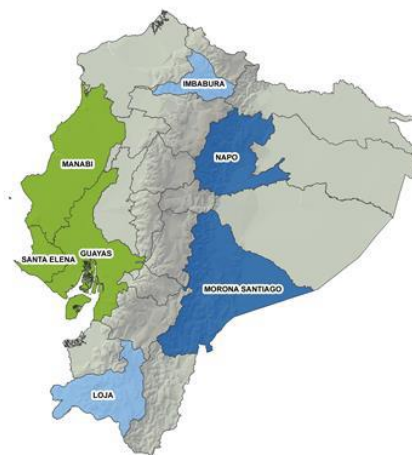
## INTEGRATING REVERSION OF LAND DEGRADATION AND REDUCTION OF THE RISK OF DESERTIFICATION IN VULNERABLE PROVINCES

### **EXECUTIVE SUMMARY** **MAY, 2020**

## 1. BACKGROUND

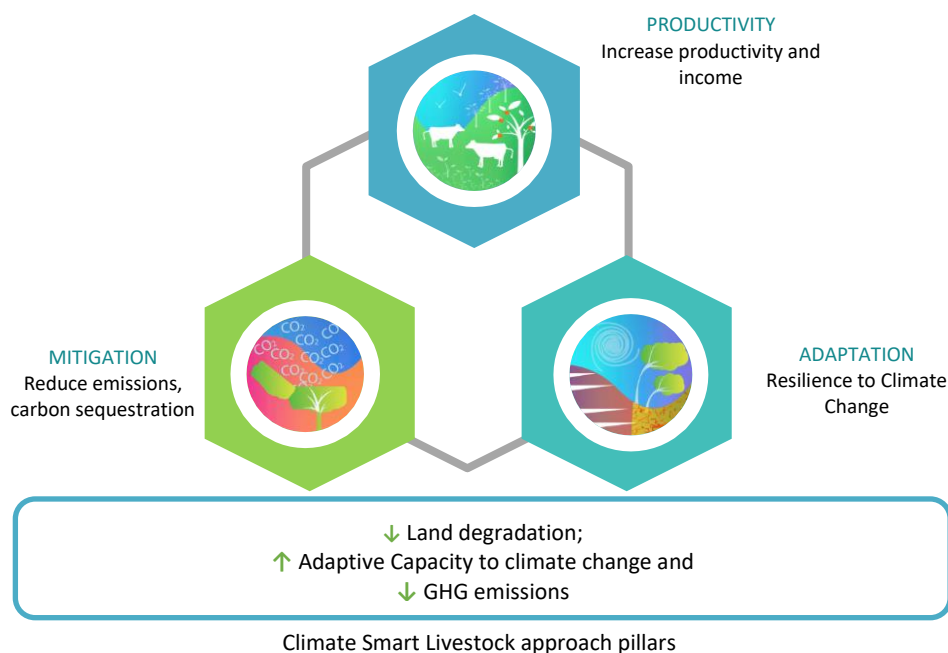
In Ecuador, the agricultural sector accounts for 7.8 % of the GDP and the livestock sector represents 6.97% of this percentage. According to data published in 2018, cattle farming is predominantly extensive in Ecuador with 4.05 million heads (equivalent to 67%) and 4.23 million hectares of natural and cultivated grassland (average animal stocking rate of 0.68 AU/ha).

Nonetheless, cattle farming suffers from productive inefficiency (5.93 liters/cow/day and an average of 30-36 months of fattening), occupying large areas of land, with poorly used pastures and CO<sub>2eq</sub> emissions per unit of milk or meat inversely proportional to the level of productivity. In addition, livestock sector also represent an important contribution to national greenhouse gas emissions, according to the National GHG Inventory (8.56%).



Intervention provinces across Ecuador

Recognizing the social and economic relevance, but also the environmental cattle production impacts, the Ministry of Agriculture and Livestock (MAG for its Spanish acronym) along with the Ministry of Environment (MAE for its Spanish acronym) proposed to implement the “Climate Smart Livestock” (CSL) Project in Ecuador. Since August of 2016, the project has been working in seven provinces of the country with technical support of the Food and Agriculture Organization of the United Nations (FAO) and funding from the Global Environment Facility (GEF).



The **Climate Smart Livestock Project** in Ecuador aims to:

- I. Increase productivity and improve producers' incomes.
- II. Reduce greenhouse gas emissions.
- III. Increase the adaptation of productive systems to climate change by building institutional capacity to incorporate the CSL approach into national and local policy.

## 2. PROJECT CONTRIBUTION

The Climate Smart Livestock Project, throughout its implementation period, has achieved:

- **Increased productivity:** 37 Farmer Field Schools have been put in place for producers to develop their capacities, holding 887 training workshops. Additionally, through the implementation of good livestock practices, 1056 cattle farmers report an increase on income (15.83%), productivity (12.85%) and efficiency (27.18%).
- **Enhanced resilience to climate change:** The project aims to strengthen resilience and climate adaptive capacity by implementing activities at farm level. In this context, efficient cattle management has enabled to conserve and restore 3,275 and 438 hectares of forest, respectively. Similarly, the monitoring process indicate an increase in adaptive capacity (+10.61%) and a reduction in vulnerability (-5.20%) and climate risk (-5.80%) due to the implemented practices. These results also imply that climate change vulnerability has decreased from moderate to low.
- **Reduced greenhouse gas emissions:** The Global Livestock Environmental Assessment Model (GLEAM), developed by FAO, was the basis to generate two tools for monitoring GHG emissions: one at national level and other at farm level (web application). These tools display the results as total emissions from the farm, intensity of emissions and a reference value in the region. This information provides farmers with a reference value to improve their productive systems and reduce their emissions. In four years of field implementation, GHG emissions have been reduced in 75.271,2 tons  $\text{CO}_2\text{eq}$  and 138.231,38 tons of Carbon were sequestered in pasture due to the implementation of good livestock practices and



### 3. PROJECT IMPLEMENTATION

The implementation of the CSL approach responds to an intervention strategy based on:

#### I. Implementing practices at field level

1. **Farmer Field Schools (FFS)**, incorporating 100% practical training at local scenarios and adult education techniques. The field intervention was implemented through the articulation between the provincial technical teams and local institutions (MAG, MAE, Universities, ONGs and local governments). Because of this intervention: 40,388 hectares have been influenced with the CSL approach and 1,056 beef and dairy cattle producers (33% women) are permanently linked with the project.
2. **Co-financing** with local counterparts for the implementation of good livestock practices (producers, local governments, etc.)
3. **Technical assistance** provided by the project team and partner institutions to ease the adequate implementation of the acquired knowledge.
4. **Monitoring** of GHG emissions and climate risk to evaluate the field intervention impact.
5. **Sustainability of the CSL approach** through strategic alliances to disseminate the experiences generated by the intervention.

#### II. Strengthening national and local institutions

Capacity development processes have been implemented at a national level, aimed for rural extension technicians from the Ministry of Agriculture and Livestock to strengthen the links with cattle producers and generate training curricula (**66 participants – two national and seven regional workshops**). At the provincial level, 33 training workshops were held with the participation of 356 male technicians and 228 female technicians permanently linked to the CSL project in the seven provinces.

#### III. Enhancing financing options and expanding the evidence base

**The development of tools to quantify GHG emissions and determine climate risk** at farm level is part of the activities carried out by the project. This technological innovation has been key not only for monitoring and analyzing the effectiveness of the approach, but also for taking the first steps to promote sustainability and replicability at the national level.



Currently, Telefónica (Spain) is developing these tools as mobile App, with FAOs technical support, to ease access for cattle producers without Internet connectivity.

In May 2019, FAO and BanEcuador (main public bank of the country) signed an agreement in order to strengthen technical capacities in the analysis and design of green financial products. The CSL Project, having designed the web tools, became a key ally for BanEcuador for the design and development of a **Green Credit Line** to promote sustainable livestock actions.

BanEcuador has allocated USD13.6 million for microcredits with a preferential interest rate. To date, there are 180 credit operations within the framework of the trial period of this credit line, which represents a total of USD 934,871 and a potential emission reduction of 1,011,015.57 kg CO<sub>2</sub>eq/year.

The establishment and capacity building process of seven community saving and credit schemes have strengthened the inclusion of microfinance. To date, credit allocation by the **community saving and credit schemes** sums up to USD 25,000. Business promotion has been developed by the implementation of six **centers of agricultural services**. These local startups mobilize USD 39,480.

#### IV. Supporting enabling policy frameworks

The project has enabled the preparation of seven **Land Use and Development Plans (LUDPs) proposals**, through participative analysis carried out via 11 workshops with 212 participants, incorporating the CSL approach, pasture use zoning (7 plans), GHG emissions, climate risk and policies at province level.

Secondly, the Climate Smart Livestock Management Strategy is under development, further strengthening the national livestock policy.

## 4. STRATEGIC ALLIANCES

Beyond the CSL Project's objectives, the initiative surpassed expectations regarding holistic strategic alliances with key stakeholders in Ecuador and the region:

- I. As mentioned earlier, on May of 2019, **BanEcuador B.P. and FAO** signed an agreement to generate a **green credit line** aiming to benefit small and medium cattle farmers focusing on the sustainability of their activities at farm level. In order to encourage good livestock and environmental practices, through the CSL approach, public financing for the economic and social development of





producers was a strategic and necessary move. Along the process, the CSL team provided the web tools already designed and technical assistance to the bank's team to monitor the producers GHG emissions and climate risk to access to green credit.

- II. **South-South cooperation:** The project is one of the pioneers in the CSL approach in the region, which is why several spaces have been developed for the exchange of experiences and lessons learned, with countries such as Uruguay, Dominican Republic, Peru and Colombia. Meetings were held to show the work carried out in Ecuador within the framework of the project, with special emphasis on the web tools to quantify GHG emissions and climate risk, green credit line, gender approach and field intervention strategy.

### First Ecuadorian - Colombian Workshop on Climate Smart Livestock



The Climate Smart Livestock Project scaled up its intervention at the regional level during the **First Ecuadorian - Colombian Workshop on Climate Smart Livestock**, which brought together experts and key stakeholders for livestock activity in both countries. The CSL Project and the National Open and Distance University (UNAD for its Spanish acronym) of

Colombia promoted the initiative, in a binational context of climate change, efficient livestock systems, and loss of natural ecosystems and biodiversity, with great challenges for Academia, research, and transfer and adoption of sustainable technologies. During the event, the results of actions, which aim to increase the ability to mitigate and adapt to climate change; decrease deforestation; promote resilience; and decrease soil grassland and GHG emissions, were presented by the technical teams.

- III. As an effort to share an accessible platform to all users, the CSL Project paired up with Telefónica (Spain) in order to develop **two mobile applications** for producers to **calculate direct GHG emissions** at a national and farm level and **estimate climate risk** at farm level. Currently, Telefónica is developing these tools as mobile App, with FAOs technical support, to ease access for cattle producers without internet connectivity.



- IV. The project collaborated with **El Ordeño S.A.**, one of the biggest dairy producers in the country. The objective of the initiative was to contribute to the sustainable development of producers, strengthening capacities of technical teams, calculating GHG emissions, and designing a training strategy for producers. The trial phase was carried out in Cayambe, a parish of the Pichincha



province, by collecting data from 49 farms linked to the company and quantifying their GHG emissions with the web tools developed by the CSL project. Furthermore, the alliance aimed to optimize their production as a result of the implementation of good practices with a CSL approach.

## 5. CSL PROJECT AND SUSTAINABLE DEVELOPMENT GOALS (SDG)

Across the board, the CSL Project intervention and activities are aligned and support the achievement of the Sustainable Development Goals, specifically:



- **SDG #5- Gender Equality:** The project developed focal groups, focusing on gender issues. It aimed to assure the participation of women and the equal opportunity leadership. In addition, gender relationships in livestock production systems (28 focal groups, with 239 producers) were identified, which was used to adjust the capacity development process to the requirements of men and women.



- **SDG #2 – Zero Hunger:** The project aimed to increase productive capacity and improve the producer's income through the implementation of good livestock practices. Because of this intervention, 40,388 hectares have been influenced with the CSL approach and 1,056 beef and dairy cattle producers (33% women) are permanently linked with the project. The implementation of good livestock practices has allowed producers to increase their income on 15.83%, productivity on 12.85% and efficiency on 27.18%.



- **SDG #13 – Climate Action:** Monitoring of GHG emissions and adaptive capacity in the livestock sector through the CSL approach implementation is one of the most important aims of the project. The results regarding the implementation impact of good livestock practices on the 165 pilot farms indicate productivity improvement (+12.85%), GHG emissions reductions (-26.27%) and climate adaptive capacity increase (+10.61%). The implementation of good livestock practices allowed to: 1)



reduce livestock production systems vulnerability to climate change (from moderate to low) and, 2) reduce 75.271,2 t CO<sub>2</sub>eq during four years of field intervention.



- **SDG #15 – Life on Land:** Efficient cattle management has allowed the conservation of 3,275 hectares and the restoration of 438 hectares of forest.



- **SDG #17- Partnerships:** The project made strategic alliances with key stakeholders in Ecuador and the region. The agreement with BanEcuador allowed to mobilize additional financial resources for improving the productivity of beef and dairy cattle producers, linked to the CSL project. Regarding the collaboration with “El Ordeño S.A” c, it facilitated to make a diagnosis of the productive status of their suppliers (includes GHG emissions) and to generate a proposal to address the identified problematics.

Furthermore, the partnership with Telefónica promote the development, transfer, dissemination and diffusion of GHG and climate risk quantifying web tools and ease access for cattle producers without Internet connectivity.

Finally, South-South cooperation for CSL project constituted an opportunity to share experiences and exchange lessons learned about the CSL approach with other countries in the region (Peru, Colombia, Dominican Republic and Uruguay). These partnerships foster awareness of global goals and sustainable practices and ensure the continuity of efforts and the inclusion of all stakeholders in the design and implementation of relevant activities.

