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## Info brief: Latin America South-South Exchange

### Sustainable livestock and its relationship with forests

Paraguay,  
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#### KEY MESSAGES

1. Progress towards achieving sustainability in the livestock sector offers economic opportunities, contributes to food security and helps to reduce poverty. However, achieving these objectives requires minimizing the sector's environmental and social risks to ensure there is a balance between the economy, society and the environment, as well as the sector's close relationship with forests.
2. The South-South Exchange provided a unique space for intersectoral discussion, showing that dialogue can be crucial for coherently developing sustainable value chains, through integrating both actors and sectors that are directly and indirectly linked to the livestock sector.
3. Although lessons learned from sustainable development practices in other sectors, such as coffee and cocoa, have been shared and are now affordable, successful sustainable livestock experiences still need to be capitalized upon.
4. Before investing in environmentally sustainable measures, the livestock sector needs a positive return and appropriate incentives.
5. Meat consumption will continue to increase for at least the next 30 years, which means there will be an increase in the use of natural resources and emissions from the sector.

#### READ THIS SUMMARY

- if you are involved in the livestock sector
- if you want to learn more about sustainable livestock practices in Latin America
- if you are working on forest protection or REDD+ (Reducing emissions from deforestation and degradation) and want to have a broader perspective on its link to the livestock sector.

## INTRODUCTION

The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, with the support of the Government of Paraguay, represented by the Ministry of Environment and Sustainable Development (MADES) and the Ministry of Agriculture and Livestock (MAG), organized the **South-South Exchange “Sustainable livestock and its relationship with forests”** from 6 to 7 November in Asunción, Paraguay.

The workshop sought to create a space for exchange and dialogue among producers, government institutions, aid agencies, industry, civil society organizations, financial institutions and traders. **The objective was to contribute to the analysis of livestock activity, with a particular focus on the meat chain and its link with international climate change goals, commitments and agreements.** Special attention was given to different livestock production models and their environmental impacts, more specifically, deforestation. The workshop also created a space for exchanging good practices and tools that promote sustainable livestock practices in the region.

Livestock is one of the main drivers of deforestation, but also one of the most important rural and agricultural economic activities in many Latin American countries thanks to its direct contributions to food security and the importance of related product processing activities. This workshop was therefore an important opportunity to share ideas and experiences relating to the sector's sustainability, which is fundamental for the economy of several countries.

Progressing and transforming the livestock sector provides economic opportunities and can also help improve food security and reduce poverty. However, achieving these objectives will require minimizing any environmental and social risks associated with the transformation process, while also guaranteeing economic, social and environmental sustainability during the sector's development, including its relationship with forests.

Traditional livestock activities in the region often have significant negative impacts on the environment, such as deforestation, ecosystem fragmentation, species extinction, decreased soil productivity and reduced and polluted water resources, among others. These impacts not only have negative consequences for the environment, but also for the sector, the economy and countries' growth. In response, several countries in the region, along with companies and producers, are working on developing policies, measures and actions to improve

the sector's environmental performance. The aim is to promote greater alignment between the production practices and economic development of the livestock sector and the national policies that guide the country in managing its forests, including its REDD+ strategies, Sustainable Development Goals (SDGs) and international climate change commitments.

## LIVESTOCK SECTOR CHALLENGES IN THE TRANSITION TO SUSTAINABILITY

The livestock sector faces a series of challenges to significantly improve its environmental performance, both in terms of greenhouse gas emissions and its impact on forests and ecosystems. These activities are directly related to deforestation and also pose other risks for the environment, such as contamination of soils and water resources, as well as having a series of impacts on biodiversity that are yet to be fully determined.

### 1. Greenhouse gas emissions

The livestock sector contributes significantly to greenhouse gas emissions. Overall, livestock contributes 14.5 per cent to total greenhouse gas emissions, two thirds of which are from cattle. According to the Food and Agriculture Organization of the United Nations (FAO), Latin America is responsible for 17 per cent of the global livestock emissions.<sup>1</sup> Methane and nitrous oxide are the livestock-related greenhouse gases that have the greatest impact. Methane, which is mainly produced by enteric fermentation and manure storage, is a gas that has a global warming effect 28 times greater than carbon dioxide, according to the Intergovernmental Panel on



*Planting trees on farms is a step towards more sustainable livestock.*  
Photo credit: UN-REDD

<sup>1</sup> <http://www.fao.org/news/story/en/item/197623/icode/> and <http://www.fao.org/resources/infographics/infographics-details/en/c/238839/>

Climate Change (IPCC).<sup>2</sup> Nitrous oxide, which comes from manure storage and organic and inorganic fertilizer usage, is a molecule with a global warming potential 265 times greater than carbon dioxide.

Mitigation strategies aimed at reducing the intensity of the sector's emissions are needed to meet the growing demand for livestock products driven by population and purchasing power growth in emerging economies.

Significant challenges remain in generating robust and accurate information needed to estimate the level of emissions produced by enteric fermentation and manure. Only seven of the 34 countries in the region use detailed methods to estimate the livestock sector's actual methane emissions.

## 2. The impact of livestock activities on forests

Forests play a fundamental role in mitigating global climate change by removing CO<sub>2</sub> from the atmosphere and storing it in biomass and soil. Changes in land use – in this case, the conversion of forests to land for agricultural or livestock uses – not only release greenhouse gases into the atmosphere (after forests are cut down, releasing their stored carbon), but also reduce its ability to capture and store carbon.

Expanding the agricultural frontier to implement livestock-related activities is one of the main drivers of deforestation in Latin America. According to a study conducted by the National Institute for Space Research (INPE) using satellite imagery, 62.2 per cent of Brazil's deforested area is used as pasture, 21 per cent is unused and is covered by renewable secondary forests, and just 4.9 per cent is cultivated. This therefore indicates that the world's largest rainforest is being destroyed primarily to feed cattle.<sup>3</sup>

In addition, according to FAO, approximately 70 per cent of grazing areas of Latin America and the Caribbean are undergoing degradation processes to various degrees. The regions most susceptible to the pushing back of the farming and livestock frontier correspond to the Amazon ecosystems in Brazil, the South American Chaco in Argentina, Paraguay and Bolivia and the arid and semi-arid areas of Argentina and Chile.<sup>4</sup>

The expansion of the agricultural frontier for livestock activities at the expense of forests generates a loss of carbon dioxide sequestration. This source of emissions constitutes 9.2 per cent of global emissions, according to the IPCC.<sup>5</sup>

To counteract the impacts of livestock farming, some countries in the region have been implementing actions to promote the sector's sustainability and reduce its carbon emissions.

For example:

- Argentina: Organic beef certification systems
- Bolivia: Programme for the sustainable development of cattle
- Brazil: Carbon-neutral meat seal, Resource Efficiency Programme for Brazil's Beef Supply Chain
- Chile: Conservation and Sustainable Use of the Patagonian Steppe for Sustainable Livestock initiative
- Colombia: Programme for sustainable livestock
- Paraguay: Agreement for the creation of a sustainable livestock policy and technology transfer in the region, programme for livestock intensification among Mennonite cooperatives
- Uruguay: Climate-smart livestock production and land restoration in Uruguayan pastures and sustainable Uruguayan livestock systems, based on the guidelines of the FAO Livestock Environmental Assessment and Performance (LEAP) Partnership.



*Livestock can be a significant driver of deforestation.*  
Photo credit: UN-REDD

<sup>2</sup> <http://www.fao.org/gleam/results/en/>

<sup>3</sup> [https://www.foeeurope.org/sites/default/files/publications/foee\\_hbf\\_meatatlas\\_jan2014.pdf](https://www.foeeurope.org/sites/default/files/publications/foee_hbf_meatatlas_jan2014.pdf)

<sup>4</sup> <http://www.fao.org/americas/prioridades/ganaderia-sostenible/en/>

<sup>5</sup> <https://www.ipcc.ch/report/ar5/wg3/>

### 3. Lack of funding sources to improve the sustainability of the livestock sector

In order to successfully transition to a sustainable livestock sector, it is essential to have the support of the financial sector to ensure competitive production as well as environmental sustainability. The support of adequate funding mechanisms can facilitate the effective participation of producers in business opportunities in the livestock sector. These mechanisms can allow producers to take risks inherent in production changes and technological improvements in order to develop environmentally sustainable livestock production practices.

At the regional level, livestock producers still lack access to the funding needed to ensure their activities are sustainable. This is due to various factors, including the lack of a definition and criteria on the sector's "sustainability", as well as the lack of incentives aligned with the sector's interests.

For example, the [Sustainable Finance Roundtable of Paraguay](#) is a voluntary, self-regulatory initiative of the banking sector, whose objective is the inclusion and standardization of environmental and social criteria for granting credit to the economy's different sectors, thus promoting the environmental, social and economic sustainability of their credit portfolios. The Sustainable Finance Roundtable of Paraguay has developed a specific standard for financing the livestock sector, titled "[Environmental and Social Guide for Sustainable Financing of the Livestock Sector](#)". This guide covers geographic information systems (GIS) usage, field inspections and technical support for producers.

### 4. Lack of participation of small-scale producers in change processes

As important global actors in the livestock sector, Latin America and the Caribbean have significant potential to contribute to climate change mitigation and adaptation. The region's potential to reduce emissions from the livestock sector is up to 30 per cent.<sup>6</sup> To achieve this goal, the sector must establish mechanisms that will guarantee the collaboration and inputs of small and medium-scale producers. Approximately 80 per cent of the region's livestock producers are small-scale family farmers who use traditional extensive farming practices.<sup>7</sup> So far, the actors involved in the debate on the sector's

sustainability have been larger producers, who may be more significantly impacted if their production methodologies change.

However, small-scale producers express great concern and demand support to adapt production models to the effects of climate change, which each year presents greater challenges for the sector's economic, social and environmental sustainability. The debate centres around negative feedback loops, in which the market increasingly offers low prices to small-scale producers, thereby weakening investment. As a result, the sector is weakened, receiving significant meat and dairy imports that small-scale producers cannot compete with due to their prices. Rather than reducing livestock production, these systems lead producers to expand their activities to non-degraded soils that allow for a better income, even if this is in the short-term, since soils degrade quickly.

**Four types of practices could be applied in the region to support the desired change, according to the event speakers:**

1. Productivity improvements to reduce the intensity of emissions per unit of meat. Emissions can be reduced by 20–30 per cent by improving animal feed, genetics, health and husbandry, and also by reducing the sector's territorial expansion and land release.
2. Soil carbon management through restoring pasture quality, improving landscape and grazing management and creating conditions for the restoration of ecosystem services, watershed protection and carbon sequestration.



A father and son work together on their family farm in Puriscal (Costa Rica).  
Photo credit: UN-REDD

<sup>6</sup> <http://www.fao.org/news/story/en/item/197623/icode/%20y>

<sup>7</sup> <http://www.ipsnews.net/2016/09/stockbreeding-opportunity-and-threat-for-a-sustainable-latin-america/>

3. Better integration of livestock into the circular economy, which aims to generate zero waste and reuse each component of a given economic process in another process. It will be important to close the nutrient cycle and integrate pest management to reduce emissions at each stage of this production process.
4. Generation of economic incentives through the development of financial tools and products that allow the productive sector to transition towards sustainable models and through market recognition in terms of the price differences of sustainable products.

## COLOMBIA: SUSTAINABLE MEAT AND FORESTS

Under the Rainforest Alliance Sustainable Agriculture Standard, which has environmental requirements that include deforestation parameters, Colombia is already involved in sustainable meat production. The production of this “premium” meat, which is still an emerging activity, involving some 300,000 animals per year and a 100 per cent price premium, is built around three axes. The first axis is to recognize the demand in order to determine how much more can be generated and what quantities can be sold. The second axis is a well-defined quality protocol: the meat must be tender and tasty and displayed on special shelves. The third axis is to define the fundamental principles: what levels of animal welfare will be required, how much deforestation and reforestation will occur, what will the water use look like and how environmentally friendly are the basins used?

Despite the fact that the livestock sector contributes three times more to gross domestic product (GDP) than the coffee sector and has created 800,000 jobs, Colombian livestock is not as developed as might be expected, due to a number of internal and external issues. However, there is a decision to enhance modernizing criteria, such as traceability and sustainability, in order to open new markets, following a specific directive from the Office of the President. Some 45 entities comprise the Colombian Roundtable for Sustainable Livestock Production, which is preparing a public-private agreement between governments and meat producers to avoid deforestation in attempts to move away from the deforestation dynamics of the last 10 years. The implementation of large-scale policies and plans in the country is also complicated by the existence

of more than 600,000 livestock farms, almost all of which have less than five animals.

### Carbon taxes

The implementation of economic instruments that put a price on carbon is growing worldwide, with the aim being to contribute to the achievement of national climate change mitigation targets. These instruments include carbon taxes or taxes on fossil fuel use and emissions trading initiatives. According to the World Bank, by February 2017, around 24 countries and subnational jurisdictions had adopted or planned to adopt a carbon tax. The adopted tax rates range from \$3 to \$168 per ton of CO<sub>2</sub>e. Countries in Latin America that have adopted carbon taxes include Mexico (in 2014), Colombia (in 2016), Argentina (in 2017) and Chile (in 2017). In Mexico and Colombia, emissions trading mechanisms were also implemented during 2018.

The adoption of the carbon tax in 2017 in Colombia and the implementation of emissions trading mechanisms have helped improve forest conservation in the country. Among the tax-based economic instruments that exist in Colombia, the following stand out:

- National Carbon Tax (Law 1819 of 2016)
- carbon offset compensation scheme (2017)
- Emissions Trading System (2018).

## POSSIBLE CONTRIBUTIONS TO ENCOURAGE SUSTAINABILITY IN THE LIVESTOCK SECTOR

### 1. National and international mechanisms to encourage sustainability in the livestock sector

#### a. Compensation and payments for environmental services

Payments for environmental services (PES) and compensation for environmental services (CSA) are two basic institutional mechanisms used worldwide to generate incentives for local actors to provide environmental services. Depending on the context of their implementation and the objectives of their promoters, these schemes assume different characteristics and fulfil various functions.<sup>8</sup>

#### b. Payments based on REDD+ results

REDD+ is a mitigation option developed by Parties to the United Nations Framework Convention on Climate Change (UNFCCC). The aim is to offer economic incentives to developing countries that have reduced their greenhouse gas emissions from deforestation and forest degradation and to invest in actions that help reduce emissions in this sector, including measures proposed in nationally determined contributions (NDC). Developing countries receive payments based on their results, which are measured in tons of reduced CO<sub>2</sub> equivalent (CO<sub>2</sub>e) compared against a pre-determined reference level. REDD+ not only focuses on deforestation and forest degradation, but also includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.<sup>9</sup>

In the specific case of Paraguay, the possibility of implementing Law No. 3001/06 on the valuation of and compensation for environmental services in cooperation with the REDD+ programme has been analysed.<sup>10</sup> It is economically feasible to offer payment incentives for reducing deforestation-related emissions (CO<sub>2</sub>) by decreasing the area of natural forests to be converted into pasture for livestock. As presented during the exchange, at current prices of \$5 per ton of CO<sub>2</sub>e, the programme could cover the opportunity cost (for agro-livestock) of 61 per cent of deforestation-related



Joao Shimada of Earth Innovation Institute giving a presentation on livestock and forests at the South-South Exchange.  
Photo credit: UN-REDD

emissions. If the price were \$2 more, this would rise to 81 per cent. The gross income would be between \$55 million and \$91 million, with the reduction concentrated in the Chaco region, where 16 per cent of the forest area, or almost 4 million hectares, was lost in two decades (1990–2011). From 2000–2015, almost 5.5 million hectares of forest were lost, with an annual average loss of 366,000 hectares. Under the law, landowners are required to maintain at least 25 per cent of their land as natural forests (a percentage that can almost double). The economic incentive not to exceed this is therefore key. Each year, Paraguay slaughters 2 million heads of livestock, 70 per cent of which go to foreign markets (the European Union and Chile, among others), whose quality standards require modernized plants and chains. Markets are now increasingly willing to pay a little more if the product comes from sustainable forestry (with a possible health background: what are first quality suggestions, then become requirements). In this sense, the Paraguayan Roundtable for Sustainable Beef has been created to safeguard economic profitability, through ensuring environmental responsibility and social inclusion, according to its aims.<sup>11</sup>

#### c. Nationally determined contributions

Within the framework of the Paris Agreement on Climate Change, countries proposed NDCs through which each country defines the mitigation (reduction of greenhouse gas emissions) and adaptation (measures to reduce the

<sup>8</sup> <http://www.fao.org/climatechange/25191-0fd2e476121157ad35384dfa68dad15d7.pdf>

<sup>9</sup> <http://www.unredd.net>

<sup>10</sup> Law No. 3001 on the valuation of and compensation for environmental services, <http://www.bacn.gov.py/archivos/2085/20131031120352.pdf>

<sup>11</sup> Labbate, G., Ruiz G., Marshal E. and Martino D. (2016). Paraguay: cambio de uso del suelo y los costos de oportunidad. Sinergias entre REDD+ y la Ley de Valoración y Retribución de Servicios Ambientales [Paraguay: change in land use and opportunity costs. Synergies between REDD+ and the Law on the Valuation of and Compensation for Environmental Services]. Panama City. [http://archivo.seam.gov.py/sites/default/files/4-%20Cambio%20uso%20suelo%20y%20costo%20de%20oportunidad%20\(1\).pdf](http://archivo.seam.gov.py/sites/default/files/4-%20Cambio%20uso%20suelo%20y%20costo%20de%20oportunidad%20(1).pdf)

expected impact of climate change on communities and ecosystems) actions they will carry out to ensure that global temperature increases remain well below 2°C, with respect to pre-industrial levels.

All countries in the region recognize the potential of forests in contributing to emissions reduction and disaster risk reduction, identifying the forestry sector as key to achieving their NDC targets. Proposed measures include: implementation of REDD+ strategies, restoration and reforestation, conservation activities, integrated landscape management and agroforestry.

#### d. Nationally appropriate mitigation actions

Nationally appropriate mitigation actions (NAMAs), which were launched at the thirteenth meeting of the Conference of the Parties in Bali, in 2007, are an instrument for implementing specific targets, through which developing countries indicate the mitigation actions they are willing to take as part of their contribution to global efforts. It was also agreed that NAMAs should have an impact that can be measured, reported and verified. NAMAs can be policies aimed at transformational change within an economic sector or actions across sectors for a broader national focus.<sup>12</sup>

12 <http://www.namacafe.org/en/what-nama>

### COSTA RICA: NATIONAL STRATEGY FOR LOW CARBON LIVESTOCK

The National Strategy for Low Carbon Livestock (ENGBC) presents the guidelines Costa Rica has developed for the sector to respond to the growing demand for productivity and profitability, in order to reduce greenhouse gas emissions, sequester more carbon dioxide and ensure better adaptability to climate change. The strategy aims to contribute to Costa Rica's national development and carbon-neutral objectives. One of the goals for the livestock sector is to increase carbon sequestration in secondary forests on livestock farms.

The strategy is explicitly geared towards achieving changes in livestock farming that contribute to making it more eco-efficient, which particularly include:

- a) Promoting livestock activities as a profitable business, overcoming the conservative attitude towards them – especially among some producers – and overcoming the vision of having a farm and cows. This is to be achieved with greater participation of families, especially young people.
- b) Promoting specialized dairy farms with less climate-vulnerable systems and less reliance on grain-based foods. This would involve partially replacing such foods, brought onto the farm from elsewhere, with legumes and genetic innovations in livestock, which despite possibly resulting in less production per cow, could be more profitable.
- c) Promoting specialized livestock breeding and fattening for meat production in more intensive grazing systems and supplementing feed with cut fodder and other fodder produced on farms, to improve the efficiency of the entire cycle and achieve higher quality animals in less time, with greater integration between the three stages (breeding–development–fattening).
- d) Reorienting small-scale livestock farming, which predominantly involves cattle production, by implementing quality systems in order to produce more meat and milk per grazing animal.
- e) Promoting livestock farming in areas of the country that are most suitable for the most productive and profitable systems and less exposed to climate vulnerability, making use of the most appropriate technologies to reduce greenhouse gas emissions, which will also lead to greater eco-efficiency.
- f) Moving rapidly towards more intensive livestock farming, which is dependent on more nutritious and digestible pastures and fodder, while also taking into consideration the need for special attention to be paid to the development of new ingredients for concentrates, as a complementary measure.
- g) Improving the coordination of primary production and the meat and dairy industries, especially at the territorial level; creating greater added value and fostering partnerships among actors in the livestock sector.

For example, in Costa Rica, NAMAs are used as an instrument for implementing the National Strategy for Low Carbon Livestock (ENGBC) and are added to the PES of the National Forestry Financing Fund (FONAFIFO), with the aims of making livestock more profitable, increasing productivity, generating more carbon sequestration and fewer emissions and making activities more resilient to climate change, all of which adheres to NDCs, following the signing of the Paris Agreement in 2015.

According to a report by the Costa Rican Ministry of Agriculture and Livestock, livestock is responsible for about 23 per cent of the country's total greenhouse gas emissions.<sup>13</sup> However, it is also in livestock ranches where the greatest carbon sequestration is expected, since these are silvopastoral systems. Due to the country's high elevations, mountains and tropical climate, producers leave trees to grow, even on steep slopes, as a way of protecting their animals from the sun and also for cultural reasons that connect forests to the conservation of high-value water. FONAFIFO, through its incentive programme, pays at least \$64 per hectare each year to producers that maintain or conserve trees on their land, offering further incentives for the use of timber species.

According to the same report, 52 per cent of Costa Rica's surface is green, with the 2014 Agricultural Census noting that livestock ranches have 24 per cent forest cover and increasingly use improved pastures, in line with the objectives set by the NAMAs.

#### e. Initiative 20x20

Initiative 20x20,<sup>14</sup> launched by 11 Latin American countries (Argentina, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Peru, as well as several Brazilian states) and private organizations at the twentieth meeting of the Conference of the Parties in Lima in 2014, hoped to restore 20 million hectares degraded by logging, overgrazing or other activities by 2020 (the commitment now already exceeds 50 million hectares). The initiative is private and is financed by the national states.

#### f. Koronivia Joint Work on Agriculture programme

Another framework to mention is the Koronivia Joint Work on Agriculture programme, which was approved at the twenty-third meeting of the Conference of the Parties in Bonn, in 2017, under the UNFCCC, following a debate that had begun in 2011. Other objectives include improved management of livestock systems, soil fertility and health, and water and nutrient management. While the Koronivia Joint Work on Agriculture programme is not formally linked to the Paris Agreement or national



*Trees provide numerous benefits to cattle farms, such as shade and food for the cattle. Puriscal (Costa Rica).*

Photo credit: UN-REDD

commitments to reduce emissions (NDCs), it shares their objectives, as do the even broader SDGs.

#### g. New York Declaration on Forests

Last, but not least, is the New York Declaration on Forests (NYDF), signed by governments and corporations in 2014. The NYDF is a non-binding commitment to 10 goals on the protection and sustainable management of forests, with the second goal focused on eliminating deforestation from agriculture. The NYDF has an [online platform](#), which functions as an open forum, with around 600 participants.

This platform has revealed some trends:

- The acceleration of deforestation. In 2017, forested areas of a similar size to New Zealand were lost, with locations that are no longer carbon sinks beginning to emit greenhouse gases. Four types of farming are responsible for 80 per cent of this deforestation: palm, soy, wood and livestock, which accounts for 50 per cent of that total.
- The growing demand for meat, especially from China, Korea, Russia and other southeast Asian countries.
- The widespread interconnection between meat production, forests and climate, although the figures are still weak: forests are one third of the solution, yet they only receive 1 per cent of the funding and only 2 per cent of published scientific articles refer to the subject.

<sup>13</sup> <http://www.mag.go.cr/bibliotecavirtual/L01-11006.pdf>

<sup>14</sup> <https://www.wri.org/our-work/project/initiative-20x20>

- The growing interest in sustainable meat production: the NYDF has already been endorsed by 50 companies and 40 governments, many of them meat producers, such as Chile, Colombia, Mexico and Peru. However, others such as Argentina, Paraguay and Uruguay are not yet signatories. Companies such as McDonald's, Cargill and Walmart have joined, though those who still

invest in forest destruction provide up to 140 times more than those who seek to conserve them (last September, 44 investors with portfolios worth \$6.2 trillion pledged to stop). The need for more action at the national level, with greater monitoring, transparency and traceability for accountability, as well as appropriate legislation.

## BRAZIL: ACTIONS IN THE LIVESTOCK SECTOR TO REDUCE ILLEGAL DEFORESTATION IN THE AMAZON

The Brazilian Amazon is a key area for sustainability and is known as one of the “lungs of the planet”. However, a very significant amount of deforestation occurs in this area, 70 per cent of which is caused by livestock activities, as was explained at the UN-REDD meeting in Asunción. Following the Paris Agreement, Brazil proposed an ambitious emission reduction target: a 37 per cent reduction in greenhouse gases by 2025, compared with the 2005 baseline, according to its NDC. These are high absolute values, with forests playing an important role in the achievement of these targets, as up to 70 per cent of the emissions accounted for in 2005 originated from a change in land use.

To achieve its goal, Brazil must comply with its forest protection law, reduce illegal deforestation (which represents 95 per cent of total deforestation) and recover 2 million hectares already deforested from the country's total liability of 20 million hectares. The goal is to recover an additional 12 million hectares by 2030. To reach this, Brazil will have to recover 15 million hectares of pasture, without neglecting the economic importance of livestock farming, with its 220 million cattle and roughly \$35 billion in turnover per year.

In order to fulfil the abovementioned commitments, the following lines of action are presented:

1. **Establish a computerized traceability system,** which accounts for the origin of livestock. Information on where the meat was produced that can demonstrate that it was not produced in an area of illegal deforestation is crucial to ensure the transparency, social control and competitiveness of the Brazilian production sector. The main focus of the traceability system is the origin of the farms where the cattle are produced.

2. **Make further progress with the vegetation recovery policy.** Many areas are in a state of disorder because they deforested illegally.
3. **Recover grazing areas and improve productivity using sustainability indicators.** Complying with the law alone will not be enough to achieve sustainability.
4. **Promote financial incentives,** equivalent to PES, to encourage the conservation and recovery of areas already deforested.

Brazil implemented its Native Vegetation Protection Law in 2012, along with an environmental registry, which is an instrument that specifically allows forest production areas within rural properties to be identified in order to check whether they comply with the law. This registry brings with it the possibility of other technological solutions for traceability between rural property and other industries, such as processing plants (meat processors), to ensure that all actors in the value chain comply with environmental rules.

With these measures, Brazil hopes to reduce illegal deforestation in the Amazon by 50 per cent. According to recent studies mentioned at the meeting in Asunción, Brazil should be able to double its agricultural production until 2050 without any deforestation. On the financial side, since 2008, the country has already benefited from \$1 billion in payments for reducing deforestation, an amount that has the potential to increase to \$20 billion by 2027, from various sources such as international cooperation, the Norwegian Government, private and public funds, Brazil's Climate Fund and the Amazon Fund.

## 2. The importance of traceability and platforms for a sustainable supply chain

The traceability of meat production and marketing is one of the key issues in enhancing the livestock sector's sustainability. Traceability is defined as the chain of uninterrupted information on animals (from birth to derived products), marketing and consumption in local or foreign markets, through data, background and location distributed via registered identifications. Traceability can be per individual or group.

Improving the development of traceability systems requires a clear definition of their purpose (who they are for, what elements they should include) and desirable scope (for example, a processing plant), as well as a transparency framework. Several attempts are being made to achieve this by industry and public entities, as well as ad hoc institutions.

The **most important components of the system** include a product model, a movement model and a platform for recording products and movements. There are traceability systems associated with health systems that can serve as a platform for incorporating variables related to the impact of livestock on forests. Some of these already function as control and monitoring systems for individual products and not just for lots.

Paraguay (through its national traceability system, SITRAP),<sup>15</sup> Argentina (through its National Service for Agrifood Health and Quality – SENASA)<sup>16</sup> and Brazil (through its Bovine and Buffalo Identification and Certification System – SISBOV)<sup>17</sup> have livestock traceability standards, although information availability is not always optimal. Uruguay has a system to trace animals by lot, without State intervention, from their origin up to processing plants.

In the case of Paraguay, private producers within the Rural Association of Paraguay (ARP) developed their own software to register all farms and livestock producers, which allows meat to be moved, while also monitoring the application of the foot-and-mouth disease vaccine two or three times a year. Barcode ear tags (identification systems) are used, linking the producer with SITRAP and indicating the location of the farm, the owner, the movements of the animal and where it was slaughtered. There is also traceability at the processing plant: on arrival, the animal is given a lot number linked to its farm and date of slaughter.

There are other associated traceability systems that can serve as a platform for incorporating variables related to the impact of livestock on forests. One such transparency tool is **trase.earth**,<sup>18</sup> which incorporates information on land-use change and allows for risk analysis. It shows the links between environmental and social conditions, where these exist, enabling businesses, governments and consumers to understand the risks and opportunities of sustainable production. The intention is for it to be possible to map more than 70 per cent of the total commodity production that affects forests by 2021, in order to make the entire chain sustainable. Although the initial focus is on soybeans in Latin America, the aim is to also include meat, palm oil, paper, coffee and cocoa, among others.

The **Global Roundtable for Sustainable Beef** (GRSB) is a multi-stakeholder initiative developed to advance the sustainability of the global beef value chain through leadership, science and multi-stakeholder engagement and collaboration.<sup>19</sup> Participants include producer groups and associations, groups of trading companies, groups of processors and industries, and civil society groups, among others. The GRSB was established partly in response to consumer demand (growing veganism/vegetarianism and initiatives such as Meatless Monday) or critical news articles and lobbying by non-governmental organizations (NGOs) on the issue of sustainable meat. The GRSB wanted to respond to this situation by clarifying the contribution of meat to the universal diet and explaining how the sector can exist without deforestation and with reduced greenhouse gas emissions.



Livestock with trees planted on the farm. Puriscal (Costa Rica).  
Photo credit: UN-REDD

<sup>15</sup> <https://www.wri.org/our-work/project/initiative-20x20>

<sup>16</sup> <https://www.wri.org/our-work/project/initiative-20x20>

<sup>17</sup> <https://www.wri.org/our-work/project/initiative-20x20>

<sup>18</sup> <https://www.wri.org/our-work/project/initiative-20x20>

<sup>19</sup> <https://www.wri.org/our-work/project/initiative-20x20>



Josephine Eisele of the Global Roundtable for Sustainable Beef.  
Photo credit: UN-REDD

The principles range from the global to local levels and tables have already been established in Australia, Brazil, Canada, Colombia, Paraguay, New Zealand, the United States and the European Union. Argentina, China, Mexico and South Africa are also in the process of establishing tables and conversations have also begun in Ecuador and Honduras. Each country focuses on its needs and what it considers to be paramount.

Some global companies have already committed to work in this area (for example, McDonald's, Carrefour and Walmart), though these commitments were made at headquarters based in developing countries and as such, their principles have not yet been adopted in subsidiaries

for various reasons. However, there are some exceptions, such as Carrefour in Argentina, which has started its natural origin brand for livestock reared in natural pastures, which incorporates many (though not all) points of the GRSB. Another example is Walmart, which made Brazil a priority country within its Project Gigaton, through which it seeks to reduce emissions. In any case, the general aim is to ensure that the chain has geospatial traceability.

**Beyond the specific cases, this type of initiative has multiple purposes, including to:**

- create awareness among partners
- ensure the participation of all sectors
- suggest technical solutions by generating and compiling scientific evidence on new practices and voluntary guidelines
- test sustainable solutions in pilot projects
- suggest changes in practices in line with the results of decision makers in the private sector and governmental changes in public policies
- advocate for the scaling up of new technologies in enabling policy environments
- invest in seed capital in processes where there are committed stakeholders
- promote discussion around emerging issues.

## ARGENTINA: LAW ON MINIMUM BUDGETS FOR ENVIRONMENTAL PROTECTION OF NATIVE FORESTS

Argentina's forest law, passed in 2007, states that each jurisdiction (23 provinces) is legally obliged to adopt land-use zoning, using three categories of conservation: red for untouchable, yellow for sustainable production and green where there is a possibility of changing land use. A compensation fund is also established, with 70 per cent for producers and 30 per cent for provinces to implement the law.

Despite efforts in certain provinces to implement land-use zoning over the years, legal and illegal deforestation still continues in these areas, though at a lower rate (about half of the rate determined before the implementation of the forest law). Another

disincentive for complying with the law concerns enforcement resources. The amount granted by national budgets is much less than the mandatory amount and has always been only around 5 per cent of what the same law requires, meaning there is barely enough money to compensate landowners.

The greatest pressure for deforestation to support livestock farming or soybean production in the country is exerted in the north and northwest, a region less associated with the livestock tradition that has even more fragile land, prone to desertification in the wake of deforestation or tree felling.

### 3. The role of the private financial sector

In addition to international funding sources, the private financial sector plays an important role in supporting the livestock sector on its path to sustainability and in reducing its impact on deforestation.

The financing problems for livestock production are manifold. The lack of guarantees, low profitability of the sector and macroeconomic uncertainty mean that financial institutions still regard the livestock sector as a high-risk consumer. Interest rates are high and are not attractive to producers, who often obtain credit only on a limited scale. There are very few opportunities for producers to demonstrate that their production is sustainable and there are no mechanisms established to include the value of forest protection in their negotiations with financial institutions.

From a lender's point of view, one of the difficulties is the **lack of data** to make business decisions. For example, separating those who work sustainably from those who do not. Just as traceability is relevant and important for identifying those that work sustainably, the creation of a level playing field in terms of social and environmental criteria is necessary for financial institutions, as this enables them to ensure that money is not loaned if minimum basic conditions have not been met. The aforementioned Sustainable Finance Roundtable of Paraguay is one particular example of a successful case.

In this sense, some of the previously mentioned platforms may be key to determining sustainability criteria adapted to the situation of each country or region, since it is not the responsibility of banks to generate information on their clients' environmental performance, or at least, this is not a practice developed in all countries. Investment should therefore focus on intensifying production, as this is the only way to respond to growing global demand. Furthermore, the challenge is to promote the sector and work closely with it throughout the value chain, from the producer to the consumer's table, as sustainability analysis must include the entire sector.

Another factor to consider is that, since it relates to a commodity, ideas as to what sustainability may entail tend to be much more general, such as environmental, social, economic, financial and reputational risk management, among others. A bank can consider up to eight environmental risks in credit assessments, which ends up being a lengthy and cumbersome process. It may therefore be more appropriate to maintain a sectoral approach, as is the case in Paraguay with coordination between the Sustainable Finance Roundtable and the Paraguayan Roundtable for Sustainable Beef. All this is in a context where there is still a significant financial gap in advancing the transition to more sustainable land use.

### 4. The role of demand and the market

By 2050, the world's population is expected to reach 9.8 billion. This population increase, together with increases in the average income level in emerging economies, puts additional pressure on agricultural and livestock production. Meat production in its current form will not be sufficient to sustain the global demand. In addition to the meat market's rapid growth, the environment will face significant impacts in general, as will forests in particular. As a growing sector in the market, the livestock sector aims to respond to demand without necessarily taking into account the global impact.

The **Consumer Goods Forum**, an association of more than 400 manufacturing and service companies from more than 70 countries, encourages its members to adopt policies that will lead to zero net deforestation by 2020 in their respective supply chains. This and other initiatives are strengthening the environmental awareness of value chain actors, from producer to consumer. In the livestock sector, commitments to reduce or eliminate deforestation in its supply chains are still very limited. These will need an additional boost from the consumer to make the sector more sustainable on a global level.



Livestock farm.  
Photo credit: UN-REDD

## 5. The role of governments

Governments will play a key role in supporting the transition to a sustainable livestock sector, particularly by supporting the necessary policies, laws and incentives.

Redesigning tax incentives may allow for such a transition. Fiscal policies and incentives are key drivers of change, influencing land use in sectors that change the use of land covered by forests, although there is often limited understanding on how these impact forests. It is vital that public and fiscal policies and related incentives seek to establish coherence across all sectors in order to overcome the inherent conflicts between them and competitive land uses.

Costa Rica is a country that has developed national policies in favour of sustainable livestock. Costa Rica has a National Strategy for Low Carbon Livestock that presents the guidelines the country wants to give the sector to respond to the growing demand for productivity and profitability, in order to reduce greenhouse gas emissions, remove and store more carbon dioxide and ensure better adaptability to climate change. The strategy aims to contribute to the country's national development and carbon-neutral objectives. One of the goals for the livestock sector is to increase carbon sequestration in secondary forests on livestock farms. Measures to achieve these objectives include the adoption and widespread implementation of low-carbon, climate-resilient technology packages (silvopastoral systems, managed intensive rotational grazing, improved pasture, improved irrigation and water management, improved fertilization plans, natural regeneration of forest cover, fodder production, silage, genetic improvement and animal reproduction, and soil conservation practices).<sup>20</sup>

## LESSONS LEARNED AND RECOMMENDATIONS

### 1. Lessons learned and recommendations from other sectors

When assessing the options for making the livestock sector more sustainable, it is important to consider the lessons learned from other sectors that have become sustainable in recent decades, such as the coffee and cocoa sectors. Good practices in these sectors show that sustainability can be profitable. Greater effort should be made to include lessons learned and best practices from other sectors to avoid duplicating efforts and to achieve faster and more focused progress in the livestock sector.



A roundtable being held during the South-South Exchange.  
Photo credit: UN-REDD

### 2. Lessons learned and recommendations from the livestock sector

South-South Exchange participants understood that the livestock sector still has a long way to go to achieve sustainability. The market that generates demand for sustainable livestock production is still very small, but has potential to grow.

The main lessons learned and recommendations of the South-South Exchange include:

- Defining sustainable livestock:** Sustainability in the livestock sector still faces serious challenges in terms of metrics and definitions based on regional, national and local contexts. To encourage better development of the sector, it will be critical to better define it in order to propose attributes that will allow it to be measured considering the different perspectives and social, economic and environmental dynamics of each country within their regional contexts.
- Strengthening spaces for dialogue at the national, regional and global levels:** The livestock sector needs spaces where different actors in the value chain can discuss, exchange information and work together to improve sustainability at every step of the process. Opportunities to meet, such as the South-South Exchange, should become more frequent and the relationships established on those occasions should be maintained.

<sup>20</sup> <http://www.mag.go.cr/bibliotecavirtual/L01-11006.pdf>

- **Extending the information available in traceability systems:** Traceability systems play a key role in improving the availability of accurate and timely information to ensure transparency and quality throughout the value chain.
- **Promoting the work of the sustainable roundtables:** Sustainable roundtables are excellent platforms to improve exchanges in the sector, systematize good practices and share knowledge and successful experiences. It is important that more of these spaces are established and that they include all actors in the sector's value chain.
- **Public policies and their harmonization:** Aligning incentives and interests is key to advancing agricultural sustainability. One of the main challenges regarding public policies is inter-institutional coordination to correct the different market distortions while factoring in global commitments, such as the Paris Agreement, among others.
- **Scaling up from a select market to global demand:** The main challenge for the sector will be to grow and move towards mass consumption of sustainable meat. This requires coordinating all actors in the value chain and establishing effective communication with all segments of the general public, and not just with the segment of the population that is already willing to pay more to consume sustainable products. Fostering productivity growth is key for countries and should be aimed at strengthening practices that allow for more efficient and effective production, thereby mitigating the sector's expansion.

## CONCLUSIONS

Building on previous UN-REDD work in Latin America and the Caribbean, the regional South-South Exchange event held in Asunción, Paraguay in November 2018 generated a wealth of shared experiences on progress, challenges and lessons learned regarding sustainable livestock and its relationship with forests. Despite the fact that each country in the region has different backgrounds and regulations, there are several common aspects that make it possible to compare experiences. As seen throughout this report, this is a sector with a high degree of complexity and specificity, which means that there



*Discussions taking place during the South-South Exchange on sustainable livestock and its relationship with forests.*  
Photo credit: UN-REDD

are no ready-made solutions. Opportunities for countries to share lessons learned have proven to be a valuable learning experience, contributing to the improvement of sustainable livestock practices throughout the region. More focused analyses can help make such practices more efficient and more effective.

During the discussions, it became clear that the different members of the livestock sector value chain have a strong desire to work sustainably. However, there is still no common understanding of what sustainable livestock is, due to the specific challenges, commitments and contexts of each of the countries and regions. Far from being a recipe, livestock sustainability should be an equation in which countries and the sector create a summary that allows them to generate sustainable models at the social, environmental and economic levels. It is crucial that this challenge is not left to the productive sector alone, as it involves the efforts of various actors along the supply chain, as well as governments, each assuming commitments, challenges and responsibility to promote change. In order to work harmoniously, it is essential that the different members of the value chain can understand and meet new market demands in the same way. At this point, it is not yet clear what the market will demand in terms of environmental sustainability and whether this demand will be associated with a specific production segment or with production in general. However, there is already a niche for more environmentally-friendly products (see boxes on Colombia or Argentina), as long as they are associated

with other meat quality indicators, such as tenderness or health. It is clear that creating change requires more than simply depending on market niches, though this could be a first step. Sustainability will have a better chance of being achieved when each of the parties, both supply and demand, assumes responsibility. Traceability remains a key element for any improvement in production systems, including environmental ones. Examples of experiences regarding the health-related aspects of the

meat value chain can serve as a platform upon which to work to define the sustainability approach.

Fostering South-South knowledge-sharing within the region and in other regions will accelerate the collective learning process regarding sustainable livestock and forest protection. For countries of Latin America and the Caribbean to make the most of their livestock potential, accelerated learning about sustainable livestock production is needed, along with targeted financial and technical assistance.



*View of a cattle farm in Puriscal (Costa Rica).*  
Photo credit: UN-REDD

**Disclaimer:** This document was written following the South-South Regional Exchange, organized by the UN-REDD programme and held in Paraguay in November 2018. The South-South Exchange was organized according to the Chatham House Rule, which reads as follows: “When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed”. Therefore, this information note should be read as such and the information and data collected should be interpreted as indicative and not as verified, except where external sources are indicated.

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