AGRICULTURAL POLICIES IN DEBATE

Transition of Agriculture and Food Systems up to COP30

SABRINA KOSSATZ BORBA
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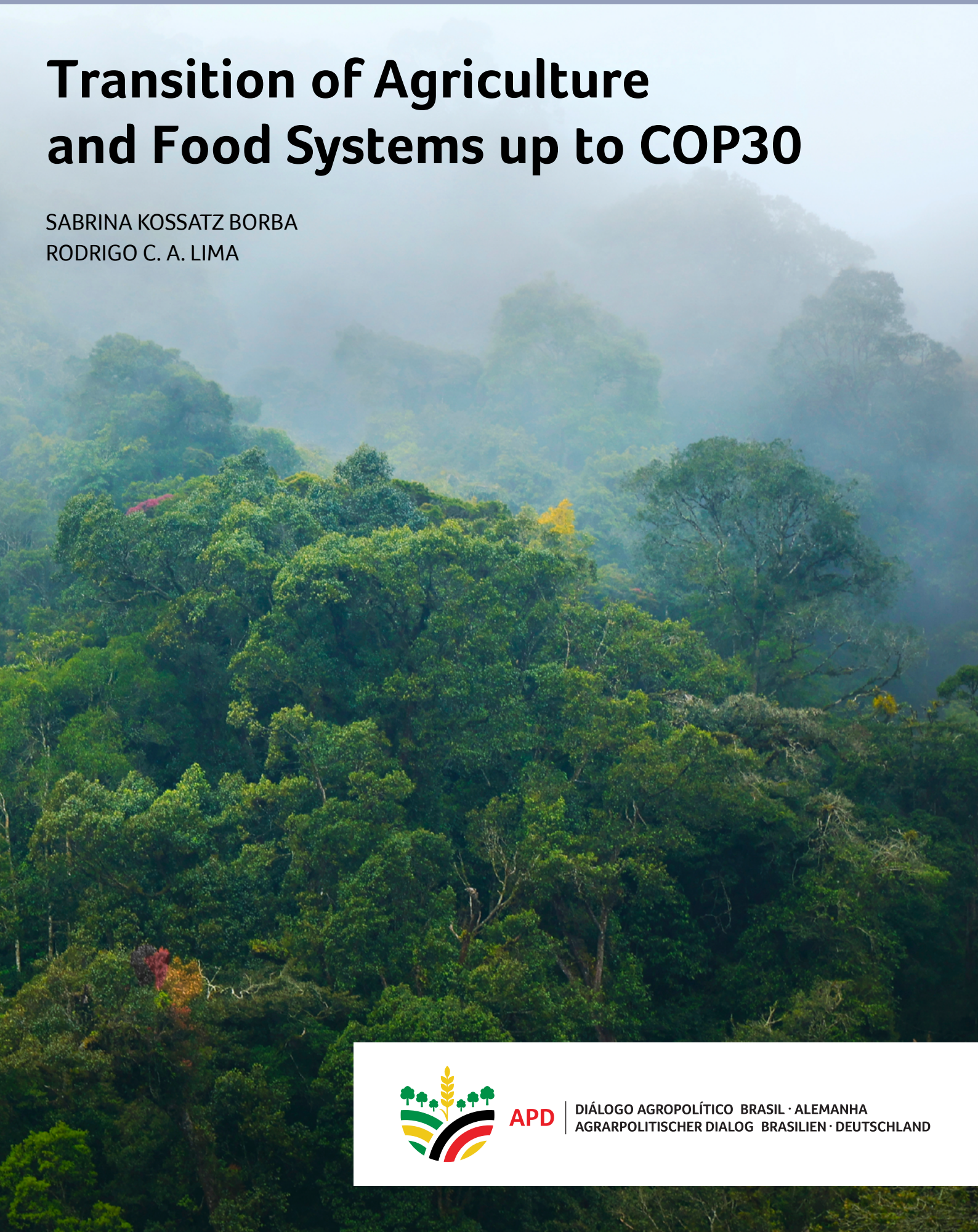

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The activities conducted by APD are based on the Memorandum of Understanding signed by BMEL, the Ministry of Agriculture and Livestock (Portuguese acronym: MAPA) and the Ministry of Agrarian Development and Family Agriculture (Portuguese acronym: MDA). Representatives from the Brazilian and German ministries, civil society, the agricultural and food industry and the scientific community are an active part of the dialogue.

In view of the growing global challenges related to climate, agriculture, livestock and the environment, the objective of APD is to achieve a better mutual understanding of the agricultural and environmental policies of both countries. Knowledge exchange and publication take place on webinars, conferences, publications and travels.

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ABOUT THIS STUDY

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Sumário

1. Introduction

Climate change and the intensification of extreme whether events have a huge impact on agriculture and food security all around the world. Global temperatures reached exceptionally high levels in 2023, which has profound consequences to the implementation of the Paris Agreement.

As the global population continues to grow, there is an urgent need to foster innovation towards enabling sustainable and resilient agricultural production, reduce food loss and waste, ensure availability and access to nutritious food and improve food systems.

During the 2012 Conference on Sustainable Development (Rio+20), world leaders reaffirmed the right of everyone to have access to safe and nutritious food, consistent with the fundamental right of everyone to be free of hunger, thereby emphasizing the significant contribution of agriculture to ensure food security.

Although food security and nutrition are expressly mentioned in SDG 2 - *End hunger, achieve food security and improved nutrition* -, it is essential to the achievement of the 17 SDGs. Regarding the Agenda 2030, it is important to recognize the interlinkages among promoting sustainable agriculture, empowering farmers, ending rural poverty, ensuring health systems, and tackling climate change.

The effects of climate change on agriculture will depend on the rate and severity of the changes, as well as the degree to which farmers can adapt. The potential for reducing greenhouse gas emissions (GHGs) through the adoption of technologies and efficient practices, conservation and restoration of native vegetation, and implementation of strategies to support production systems against climate-related impacts varies based on several factors.

The challenges faced by countries differ from one to another. Access to technology, technical support, and capacity-building are prerequisites for enabling changes that boost productivity, adapt production systems, reduce emissions, and achieve other co-benefits, all tailored to the specific circumstances of each country.

Fortunately, negotiations on agriculture within the United Nations Framework Convention on Climate Change (UNFCCC) have progressed in recent years, offering countries new opportunities to strengthen cooperation and financing for climate actions in agriculture and food security.

Beyond agriculture, the debates around food systems transition are the center of the multilateral negotiations to cope with climate change, biodiversity loss and water crisis. Brazil has a leading role to play when it comes to foster sustainable agriculture. The UAE Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action agreed at COP28 shed light about the importance of improving and transforming food systems.

COP30 in Brazil, in 2025, will allow to comprehend the ambition of the updated nationally determined contributions with targets for 2031 to 2035. This opens a peculiar moment to build upon what countries can do to improve mitigation, adaptation and co-benefits on agriculture and, broadly, are willing to do in regards of fostering solutions to the food systems transition.

In line with this scenario, the goal of this article is to present an overview of the negotiations on agriculture at the UNFCCC, and to explore potential ways forward up to COP30, aimed at improving countries actions on agriculture and food security. Moreover, to shed light on the debates about food systems, exploring potential roads that could foster cooperation and multilateral approaches towards building resilient agriculture and food systems for all.

2. Agriculture at the UNFCCC negotiations and the experience of the Koronivia Joint Work on Agriculture

In its founding documents, the UNFCCC seeks the stabilization of greenhouse gas concentrations in the atmosphere to "ensure that food production is not threatened". However, despite its crucial implications for food security, agriculture was only mentioned at the negotiations in 2007, with the adoption of the Bali Action Plan, when a process was initiated to discuss cooperative sectoral approaches and specific actions in the agricultural sector.

At the time, the world's nations were trying to reach a new multilateral agreement with explicit emissions pledges by all major economies. At COP15, in Copenhagen, a draft decision was prepared in relation to agriculture, calling for all Parties to engage in further action and cooperation on agriculture mitigation, while also establishing a work program on agriculture under the Subsidiary Body for Scientific and Technological Advice (SBSTA).

Instead, the approval of the Copenhagen Accord at COP15 offered no targets for carbon cuts and no agreement on a legally binding treaty, showing a lack of consensus between the Parties. In this regard, the decision on agriculture was neither finalized nor adopted.

Despite its shortcomings, the Copenhagen Accord did achieve some significant milestones, including the creation of the Green Climate Fund (GCF), the collective target by developed countries to mobilize USD 100 billion a year for climate actions in developing countries - a target yet to be met - and the aspirational goal of limiting global temperature increase to 2ºC.

Negotiations on agriculture continued in the subsequent conferences, achieving a breakthrough at COP17, in Durban, when the Conference of the Parties (COP) requested the SBSTA (Subsidiary Body for Scientific and Technological Advice) to consider issues related to agriculture.

The focus on the role of agriculture under UNFCCC intensified with Decision 4/CP.23, adopted at COP23, in 2017. The establishment of the Koronivia Joint Work on Agriculture (KJWA) provided a comprehensive arena to delve into a wide range of topics related to the intrinsic relationship between agriculture and climate change, especially in terms of adaptation.

The negotiations on agriculture under the KJWA have allowed for significant progress, highlighting that innovation, financing, and technology will be crucial to promoting resilient agriculture. Indeed, the decision of Koronivia was a landmark, as it recognized the unique potential of agriculture in tackling climate change.

Throughout the process, known as Koronivia Roadmap, countries and observers had the opportunity to share their views and recommendations through submissions, which were discussed in workshops organized by UNFCCC. This mandate encompassed the following topics:

a. Modalities for implementation of the outcomes of the five in-sessions workshops on issues related to agriculture and other future topics that may arise from this work.

b. Methods and approaches for assessing adaptation, adaptation co-benefits and resilience.

available

c. Improved soil carbon, soil heath and soil fertility under grassland and cropland as well as integrated system, including water management.

d. Improved nutrient use and manure management towards sustainable and resilient agricultural systems.

e. Improved livestock management systems. and

f. Socioeconomics and food security dimensions of climate change in the agricultural sector.

Afterward, the debate was expanded to cover the following topics:

- Sustainable land and water management, including integrated watershed management strategies, to ensure food security. and

- Improved livestock management systems, including agropastoral production systems and others.

The Koronivia Roadmap was not only an evolving process, but also an inclusive one. During the two years of discussions, countries were able to share relevant scientific and technology information on key topics, highlighting the difficulties of translating them into concrete climate actions, given the limitations of financing and capacity-building on countries with different realities.

In sum, the discussions, submissions, workshops, and UNFCCC reports have emphasized the crucial role of the agricultural sector in climate change adaptation and mitigation. The UNFCCC Secretariat's reports provide insights that change the perspective of how to deal with agriculture in the context of climate change. The table below outlines key findings:

Outcomes of the Koronivia Joint Work on Agriculture Roadmap[1]

- Several tools are available to assess and monitor the adaptation and its co-benefits, but existent tools can benefit from tailored enhancements for each country's specific circumstances, considering the importance of sharing best practices among countries and other stakeholders, and the important role of science, technology, and capacity-building in facilitating the data collection and adaptation assessment.

- Issues related to soil carbon, soil health and fertility, as well as the integrated sustainable water and soil management are context-specific, and, considering the circumstances of countries, should be addressed holistically and inclusively to realize the full

[1] Sources, accessed in May 2024, available at:
FCCC/SB/2019/L.2, https://unfccc.int/sites/default/files/resource/SB2019_L.02E.pdf
FCCC/SB/2019/L.5, https://unfccc.int/sites/default/files/resource/sb2019_L05E.pdf
FCCC/SB/2021/L.1, https://unfccc.int/sites/default/files/resource/sb2021_L01_E.pdf

potential of increasing productivity by contributing to food security, adaptation, and adaptation co-benefits, as well as increasing carbon stocks.

- Livestock management systems are very vulnerable to the impacts of climate change, and sustainably managed livestock systems have high adaptation capacity and resilience to climate change, while playing broad roles in protecting food and nutrition security, livelihoods, sustainability, nutrient cycling, and carbon management. They noted that improving sustainable production and animal health, with the aim of reducing greenhouse gas emissions in the livestock sector and simultaneously increasing sinks in pastures and grasslands, can contribute to achieving long-term climate objectives, considering different national systems and circumstances.

- Soil and nutrient management practices, and the ideal use of nutrients, including organic fertilizers and improved manure management, are at the core of sustainable and climate-resilient food production systems and can contribute to global food security.

- Socioeconomic and food security dimensions are critical when dealing with climate change in agriculture and food systems. They also recognized the fundamental priority of safeguarding food security and ending hunger, designing sustainable and climate-resilient agricultural systems, applying a systemic approach aligned with long-term global climate objectives, recognizing the importance of long-term investments in agriculture focused on this objective.

Agriculture and food security play a significant role in offering solutions to address climate change and their integration into climate actions should be tailored to each country's unique challenges, needs and particularities. There is a need to enhance cooperation between countries in sharing knowledge about adaptation, mitigation, co-benefits, and agricultural productivity to achieve a more resilient agriculture.

The relationship between agriculture and food security emphasizes the need to incorporate these topics into UNFCCC negotiations. Countries need to adapt to a changing climate, as food supply should increase to meet the needs of a growing population. The implementation of resilient practices and the adoption of technologies for adaptation and mitigation from a food systems perspective, aiming to reduce emissions while increasing productivity are key challenges that need to be faced.

Regarding the diverse agricultural systems worldwide and varying development priorities, goals, and circumstances, a one-size-fits all to agriculture is not feasible. Instead, cooperation, capacity-building, and financing are key to enable actions according to the realities of each country.

Adaptation could play a major role in ensuring food security in an ongoing climate change. Measures such as improving soil health and fertility, improving livestock management systems, boosting productivity, fostering technologies that reduce emissions and increase carbon capture in the soil, and strengthening the capacity of rural producers should be considered. Finally, it should be noted that the challenges faced today require a joint effort regarding agriculture, food security, and climate change.

3. The Sharm el-Sheikh joint work on implementation of climate action on agriculture, food security and future challenges

At COP27, in Sharm el-Sheikh, a 4-year *Sharm el-Sheikh joint work on implementation of climate action on agriculture and food security* was established, focused on the implementation of KJWA outcomes. With the aim of evolving discussions on agriculture and food security at the UNFCCC, the objectives of Sharm el-Sheikh joint work include:

- Promoting a holistic approach that considers different circumstances and delivers multiple benefits, such as adaptation, adaptation co-benefits and mitigation.
- Enhancing coherence, synergies, coordination, communication and interaction between Parties, constituted bodies and financial operating bodies.
- Strengthening engagement, collaboration and partnerships among organizations and relevant stakeholders.
- Providing support and technical advice to Parties, constituted bodies and the financial operating entities, respecting individual approaches and respective procedures and mandates.
- Enhancing research and development on issues related to agriculture and food security while sharing knowledge, experiences, innovations, and best practices.
- Evaluating progress in implementing and cooperating on climate actions related to agriculture and food security. and
- Sharing information on national policies, plans and strategies related to climate change, considering country-specific needs and contexts.

The decision also created the Sharm el-Sheikh online portal to share information on projects, initiatives and polices to increase opportunities for implementing climate action to address issues related to agriculture and food security. The portal is expected to work as a centralized platform to foster cooperation between countries, serving as a database for the exchange of information on policies, strategies, actions, technologies, and needs related to the implementation of climate action on agriculture and food security.

The UNFCCC Secretariat has been requested to prepare an annual synthesis report on the work undertaken by constituted bodies and financial and other entities under the Convention, as well as by relevant international organizations, on activities related to the Sharm el-Sheikh joint work. Additionally, in-session workshops on agreed topics related to agriculture and food security will be held during the first regular sessions of the Subsidiary Body each year.

It is worth highlighting the importance of the decision adopted at COP27, which recognized the inherent relationship that the impacts of climate change can have on agriculture and the achievement of global food security. This underscores the need to address agriculture with a focus on mitigation, adaptation, and co-benefits.

Among other things, the decision recognized the vulnerability of livestock management systems to climate change impacts and highlighted the adaptive capacity and resilience of sustainably managed livestock systems, while ensuring food and nutrition security.

It further noted that enhancing sustainable production and animal health, with a focus on reducing GHG emissions in the livestock sector and increasing carbon capture in pastures, can contribute to achieving long-term climate goals, considering diverse national circumstances.

The decision prioritized food security and hunger eradication through sustainable and climate-resilient agricultural systems, applying a systemic approach aligned with long-term global climate goals. It also stressed the need to mobilize resources and ongoing cooperation to bring the adaptation, mitigation, and co-benefits approach to agriculture.

At COP28, the Sharm el-Sheikh joint work on agriculture and food security has made progress, although the decision needed to enable the group to move forward was deferred

to the Subsidiary Body meeting in June 2024. The main disputed concerned whether to create a coordination group or maintain governance with the Subsidiary Body.

Given the importance of the agenda, COP28 provided key advancements in the nexus between agriculture, food systems, food security and climate change, recognizing the central role of agriculture and food systems in addressing climate change.

First, a notably breakthrough was the COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action, which represents a significant voluntary commitment endorsed by 159 countries, including Brazil and European Union. The Declaration stresses that "any path to fully achieving the long-term goals of the Paris Agreement must include agriculture and food systems".

It aims to strengthen food systems, create resilience to climate change and contribute to the global fight against hunger. It also stresses the need to maximize climate and environmental benefits associated with agriculture and food systems, boost productivity, protect and restore land and natural ecosystems, improve soil health and biodiversity, and enhance practices and technologies to reduce emissions to strengthen more sustainable production and consumption.

By 2025, signatory countries commit to integrating agriculture and food systems into National Adaptation Plans, NDCs, Long-Term Strategies, and National Biodiversity Strategies and Action Plans.

Moreover, they will review and redirect policies and government support towards practices that reduce GHG emissions, strengthen resilience, productivity, livelihoods, nutrition, water efficiency and human health, and reduce the loss and degradation of ecosystems.

It should be noted that this is not a binding agreement. The Declarations and initiatives take place in parallel to the UNFCCC negotiations and create political commitments involving countries with the agreed goals and objectives.

Second, it is worth highlighting the mention of agriculture and food systems in the Global Stocktake and Global Goal on Adaptation.

The Global Stocktake, concluded at COP28, is a periodically process to assess progress on mitigation, adaptation and financing, and outline the way forward, in line with

the 1.5oC threshold established in the Paris Agreement. The decision 1/CMA.5 encourages the implementation of integrated solutions, such as land use management, sustainable agriculture, and resilient food systems. It also aims to achieve climate-resilient food and agricultural production, as well as to increase sustainable and regenerative production and equitable access to adequate food and nutrition for all.

On the other hand, the Global Goal on Adaptation urges countries to develop and improve adaptation plans for vulnerable sectors, such as agriculture. Additionally, it sets a goal to achieve climate-resilient food production, supply, and distribution.

Lastly, more than USD 7.1 billion in new funding commitments was mobilized for climate action on agriculture and food systems, which reinforces the support to this agenda. These funds are intended for reducing livestock emissions, implementing regenerative agriculture projects, building capacity in vulnerable countries, among others.

4. How Brazil is promoting climate actions on agriculture and food security

According to the NDC Synthesis Report, out of the 168 Nationally Determined Contributions (NDCs) submitted by September 2023, 141 consider the adoption of climate actions on agriculture and food security.

How the Parties will implement climate actions to increase the adaptation of productive systems, as well as reduce GHG emissions, will depend on the strategies, policies, and actions adopted throughout the implementation of the targets set out in the NDCs. However, the importance that Parties attach to agriculture is undoubted.

There is a wide range of actions that countries can adopt as climate action on agriculture and food security. In Latin America, for instance, the permanent adoption of technologies and the restoration of pastures and degraded areas are some of the actions considered by several countries.

In line with the bottom-up architecture of the Paris Agreement, countries' actions on agriculture and food security should reflect their specific circumstances and realities, considering the challenges and needs of each country. These actions must have as the main goal the adoption of climate actions aimed at mitigation, adaptation, and co-benefits.

Brazilian agriculture should be mentioned in this context. The Sectoral Plan for Mitigation and Adaptation to Climate Change for the Consolidation of a Low Carbon Economy in Agriculture (ABC Plan) 2010-2020 was endorsed during the Copenhagen Accord, when countries were planning their nationality appropriate mitigation actions, highlighting the importance of agriculture for Brazil as a solution to address climate change.

According to data from the Brazilian Ministry of Agriculture, between 2011 and 2022, the ABC technologies were implemented on an area of 52 million hectares, allowing for a reduction of 170 million tons of CO2 equivalent.

The Plan for Adaptation and Low Carbon Emission in Agriculture (ABC+ Plan) represents the second stage of the low carbon agriculture policy in Brazil, incorporating new practices to mitigate GHG emissions for the 2020-2030 period. The Plan targets a reduction of 1.1 billion tons of CO2eq in the agricultural sector and aims to adopt Sustainable Systems, Practices, Products, and Production Processes (SPSABC) in 72.68 million hectares by 2030.

It is worth noting that the estimated emissions from agriculture in 2020, according to data from the National Emissions Registry System (SIRENE), were 554,989 million tonnes of CO2 equivalent. The implementation of the ABC+ Plan Technologies is expected to offset the equivalent of approximately 2 years of agricultural emissions.

ABC+ Plan Targets

Sustainable Systems, Practices, Products, and Production Processes - SPSABC	Commitment	Potential Mitigation (million Mg CO2eq)
Practices for the Recovery of Degraded Pastures	30 million ha	113,7
Integrated Crop-Livestock-Forestry System	10 million ha	34,11
Agroforestry Systems	0,10 million ha	37,9
No-Till System	12,50 million ha	46,71
No-Till Vegetable Planting System	0,08 million ha	0,88
Planted Forests	4 million ha	510
Bionputs	13 million ha	23
Irrigated Systems	3 million ha	50
Intesive Cattle Finishing	5 million animals	16,24
Management of Animal Production Waste	208,40 million m3	277,8
Achievement in hectares, million m^3, and number of animals	72,68 million ha + 208,40 million m3 + 5 million of animals	1.042,41

Source: ABC+ Plan.

The adoption of SPSABC, which englobes conservationist practices, is a common basis of both versions of the ABC Plan. With the approval of the ABC+ Plan, the scope of practices adopted was widened, including the no-till system, bioinputs, irrigated systems, animal production waste management, intensive finishing, integrated crop-livestock-forestry (ILPF), practices for recovering degraded pastures, among others.

It is worth noting that the ABC+ Plan promotes sustainable agriculture while contributing to GHG mitigation. In fact, the interconnection between mitigation and adaptation is one of the pillars of the Plan, as the technologies and practices promoted also increase resilience.

Technological innovations, based on a robust scientific basis, are extremely important for agricultural production chains, especially in terms of sustainable production. The adoption of sustainable practices, processes, and products results in reduced risks and increased production, contributing to the reduction of GHG emissions and fostering the adaptation of production systems.

The ABC+ Plan focuses on an integrated landscape approach, recognizing the relationship of agriculture with the environment. Productive areas should be considered systematically with soil health, water conservation, biodiversity, and environmental regularization under the Forest Code. In other words, agricultural activity is combined with the conservation of natural resources and compliance.

A key target of the ABC+ Plan is to restore 30 million hectares of degraded areas by 2030, leading to a reduction of over 10 million tons of CO2eq. In essence, the ambition is to use the restoration of degraded areas as a driver for the growth of tropical agriculture and livestock. This is achieved through an integrated landscape approach, the implementation of sustainable production systems, and the enhancement of resilience.

However, the costs of restoration must be considered. Public resources, anchored in the lines of the Safra Plan, are relevant sources that can be channeled to strengthen the restoration of degraded areas. In the 2022/23 harvest, the sub-program aimed at recovering degraded pastures financed more than R$1.2 billion.

Brazil is working on a program to convert degraded area into agriculture and livestock, aimed at covering 40 million hectares. The National Program for Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems is designed to map

degraded areas with productivity potential, create projects involving public and private stakeholders, and foster a visionary agenda of investments to recover degraded area and turn it into productive areas that will contribute with food security and enhance carbon capture. Japan and Brazil recently announced a cooperation to restore degraded pasture.

Defining ways of financing will be crucial to achieving the goals. Private financing can support the adoption of green technologies and practices that reduce GHG emissions intensity or facilitate the adaptation of production systems - core elements of the climate agenda. As sustainable investments gain traction, the financial market defines criteria to support the issuance of bonds or the creation of investment funds that enable sustainable business to thrive.

In a nutshell, the ABC+ Plan has the potential to stimulate transformations and investments in agricultural technologies and practices, consolidating a new area of innovation. It can attract investments, solidify sustainable agricultural policies, and tackle global challenges effectively.

Finally, it is worth mentioning the significant amount of work that has been done by several initiatives aimed at promoting sustainable agricultural practices and transforming food systems. Their efforts are driven by a collective recognition of the need to mitigate GHG emissions while ensuring food security for future generations.

Regen10, celebrated at COP27, is a multi-stakeholder collaborative platformed aimed at scaling regenerative food systems within a decade. It aims to foster alignment and enhance collaborative efforts between diverse food system actors to identify how policy, finance, business, and technical assistance can support approaches that deliver positive outcomes for people, nature, and climate.

On the other side, the Food and Land Use Coalition (FOLU), established in 2017, is a community of more than 60 organizations and individuals committed to support the transformation of food and land systems. The Coalition advocated for a reformed global agenda to achieve positive environmental outcomes, increase health, foster inclusive development, and address food insecurity.

5. Agriculture, Food Systems and the road to COP30

As pointed by the Food and Agriculture Organization of the United Nations (FAO), over 730 million people experienced hunger in 2022, and in 2021, more than 3.1 billion people, representing 42.2% of the global population, did not have access to minimally healthy diets. Extreme whether events are one of the main drivers behind acute hunger worldwide, underscoring the urgent need for a transition to more resilient food systems.

There is a clear need to improve agriculture production in a climate change scenario, and to combine the whole food chain, from the farm to the plate, involving the industry, supermarkets, financial sector and, in a broader reasoning, consumers and the culture and policies around food. This is the intrinsic reasoning behind the broader debate around food systems.

It is worth pointing out that food systems are complex networks that include the production, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, as well as elements of the broader economic and natural environment in which they are embedded. Consequently, the food systems transition addresses both direct emissions of GHG and indirect ones, requiring significant actions by countries.

Despite not being a formal agreement under the UNFCCC, the significance of the agriculture and food systems agenda is underscored by the fact that 159 countries have signed the COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action.

How the Declaration will evolve and what would be tangible outcomes will rely on the effective work to be adopted. As foreseen in the Declaration, there is an ambitious agenda to push forward the debates around food systems transition:

- Scaling-up adaptation and resilience activities and responses to reduce the vulnerability including through financial and technical support for solutions, capacity building, infrastructure, and innovations.

- Supporting workers in agriculture and food systems, including women and youth, whose livelihoods are threatened by climate change, to maintain inclusive, decent work, through context-appropriate approaches which could include increasing, adapting and diversifying incomes.

- Strengthening the integrated management of water in agriculture and food systems at all levels to ensure sustainability and reduce adverse impacts on communities that depend on these inter-related areas.

- Maximize the climate and environmental benefits - while containing and reducing harmful impacts - associated with agriculture and food systems by conserving, protecting and restoring land and natural ecosystems, enhancing soil health, and biodiversity, and shifting from higher greenhouse gas-emitting practices to more sustainable production and consumption approaches, including by reducing food loss and waste and promoting sustainable aquatic blue foods.

It is crucial to understand and monitor how countries, particularly Brazil and the European Union, will engage with this initiative, as numerous actions are planned for the next few years.

Additionally, the launch of more than 10 initiatives aimed at developing projects on agriculture and food security, alongside the mobilization of up to 7 billion dollars coming from multilateral banks, international organizations, philanthropy and the private sector, marks an important milestone in climate action.

Among these initiatives, the Technical Cooperation Collaborative (TCC) stands out for its role in accelerating the delivery of the COP28 UAE Declaration on Agriculture, Food Systems, and Climate Action. In addition to a USD 200 million commitment from the COP28 Presidency, Italy and United Kingdom are expected to contribute more than USD 75 million over the next five years.

The Action Agenda on Regenerative Landscapes, announced by COP28 with the World Business Council on Sustainable Development (WBCSD) and Boston Consulting Group (BCG), and supported by the UN Climate Change High-Level Champions is also a significant step toward realizing the COP28 UAE Declaration.

This initiative brings together over 25 organizations from the agricultural and food sector to expand regenerative agriculture, aiming to transition 160 million hectares managed under regenerative agricultural practices by 2030. So far, participants have invested USD 2.2 billion invested into regenerative projects, with another USD 2.2 billion committed. The collaboration is expected to involve approximately 3.6 billion farmers.

The Agriculture Innovation Mission for Climate (AIM4Climate), a global initiative launched by the United Arab Emirates and the United States at COP26, announced an increase of USD 3.4 billion in integrated financing for climate-smart agricultural and food systems, totaling USD 17 billion since its launch.

A joint commitment between the Bill & Melinda Gates Foundation and the United Arab Emirates to accelerate agricultural innovations that will help small-scale farmers in sub-Saharan Africa and South Asia build resilience and adapt to climate change with commitments of USD 200 million in response to immediate, long-term threats to food security and nutrition from climate change is another initiative.

As noted at COP28, there is no one-size-fits all model for agriculture. Instead, all agricultural approaches must contribute to addressing climate change. While agriculture contributes to GHG emissions, it is also a highly sensitive sector when it comes to climate change impacts, justifying the adoption of innovation to foster the adoption of mitigation and adaptation measures. The debate of food systems depends on the inclusion of all the links of the food chain to foster climate-friendly practices and the urgent reduction of hunger and nutritional imbalances.

6. Fostering climate solutions based on agriculture and food systems at COP30

There is a clear understanding about the importance of promoting mitigation and adaptation in agriculture, and to foster solutions towards improving food systems. COP30 in Brazil, in 2025, opens an immense opportunity to recognize the need to push forward actions aimed at fostering low carbon agriculture and to build on the transition of food systems.

Harnessing innovation has the potential to transform agriculture and food systems, given the interconnection between technology, productivity, and environmental sustainability. To do that, it is fundamentally important to improve capacity building, access to technology and finance, which is at the center of the UNFCCC negotiations on agriculture.

There is a clear limit of climate finance, considering the Green Climate Fund and the Adaptation Fund when it comes to support the adoption of climate actions on agriculture and food security. The work at the Sharm El-Sheikh Joint Work on Agriculture and Climate Action and Food Security, for instance, can enable an improved phase where countries actions could be possibly linked to climate finance or at least cooperation. The adoption of the Sharm El-Sheikh online portal could, therefore, create a common framework for countries and other stakeholders to present policies and actions on agriculture, allowing to comprehend a multitude of mitigation, adaptation and co-benefit measures.

The discussions of the new collective quantified goal, that must be concluded at COP29, in Baku, highlights the need to define new sources of funding beyond donations. Large scale investments will be critical to foster a transition towards a low-carbon economy and to support countries in adapting to the adverse impacts of climate change.

Private financing and multilateral banks could play a significant role in developing and implementing policies aimed at boosting technology and continuous innovation, considering the particularities of each country.

The possibility of achieving the Paris Agreement goals and, more broadly, contributing to the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030, is inherently connected to the promotion of agriculture based on innovation, science, and technology, preservation and sustainability efforts, sustainable development policies, and economic incentives.

It is worth noting that, when it comes to climate actions on agriculture and food security, there is no one-size-fits-all solution to be adopted by countries. How agriculture will evolve, aimed at improving the connection of climate finance towards supporting the implementation of climate actions in agriculture and food security is a fundamental challenge for the near future.

The explicit recognition that food security and social dimensions should be considered when it comes to improve and support climate actions in agriculture in different countries, reinforcing that there is no one solution that can be advocated for all countries is a common ground that Parties already achieved at the UNFCCC.

Despite different views about what solutions should be incentivized to prompt Parties climate actions on agriculture and food security, and to foster a transition on food systems, COP30 could address and agree potential levers such as:

- Expand and strengthen low carbon agriculture and its continuous improvement, aiming to contribute to climate actions on agriculture and food security.

- Strengthen regenerative agriculture practices, which are essential for achieving resilient agriculture and improving food systems.

- Foster the restoration of native vegetation through different financing policies.

- Foster the restoration of degraded areas, rehabilitating unproductive lands, enhancing soil fertility and capturing carbon.

- Promote sustainable soil management to store carbon and increase agricultural productivity and climate resilience.

- Agree to diversity and commit to climate finance based on the Green Climate Finance, Adaptation Finance and other means of implementation.

The implementation of adaptation measures, such as the adoption of climate-smart agricultural practices, the integration of agriculture and livestock, crop diversification, the development of markets for climate-resilient crops and improved land management envisages a food-secure future in the context of new realities of climate change.

Additionally, innovative technologies have significant potential to sustainably increase productivity, adapt to and build resilience against climate change, reduce emissions, and foster sustainability across agricultural and food supply chains.

Looking ahead, innovating, and improving the financing for low-carbon agriculture, along with effective policies, are crucial to fostering long-term resilience. At the same time, this is one of the challenges for scaling up climate action on agriculture and food security.

The evolution of negotiations on agriculture highlights the feasibility and importance of emission reduction, along with the critical challenge of disseminating methods to promote the adaptation and resilience of food systems. This challenge is central to the objective of strengthening global food security while mitigating the effects of climate change.

At COP30 it will be possible to comprehend the climate ambition up to 2035. Beyond the challenges to foster energy transition, there will be a huge opportunity to recognize the role of mitigation and adaptation technologies and practices on every agricultural system, as a manner to pursue low carbon and resilient production.

The effective implementation of the Sharm el-Sheikh online portal up to the beginning of 2025 will allow countries to propose their climate actions on agriculture and food security. How to foster climate finance and cooperation to effectively allow win-win outcomes towards agriculture and food systems will mean an immense opportunity to improve a multilateral response to tackle food security, resilient agriculture and improved food systems.

7. References

CGIAR. Technical Cooperation Collaborative. Available at: https://www.cgiar.org/news-events/news/cgiar-joins-global-commitments-at-cop28s-food-agriculture-and-water-day/

COP28. COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action, Available at: https://www.cop28.com/en/food-and-agriculture

Food and Agriculture Organization (FAO). Sustainable Food Systems. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/b620989c-407b-4caf-a-152-f790f55fec71/content

Food and Agriculture Organization (FAO). The State of Food and Agriculture 2023. Available at: https://openknowledge.fao.org/items/ca815d26-c876-4d54-9e-90-f34432442bf2

Food and Agriculture Organization (FAO). The State of Food Security and Nutrition in the World 2023. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/c121526c-9c63-4e3b-a145-64a391255984/content/state-food-security-and-nutrition-2023/food-security-nutrition-indicators.html

Food and Land Use Coalition. Available at: https://www.foodandlandusecoalition.org/

Ministry of Science, Technology and Innovation. GHG emissions by sector. Available at: https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/emissoes/emissoes-de-ge-e-por-setor-1

Ministry of Agriculture and Livestock. Plan for Adaptation and Low Carbon Emission in Agriculture (ABC+ Plan). Available at: https://www.gov.br/agricultura/pt-br/assuntos/sustentabilidade/planoabc-abcmais/publicacoes/abc-english.pdf

Ministry of Agriculture and Livestock. National Program for Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems. https://www.in.gov.br/en/web/dou/-/decreto-n-11.815-de-5-de-dezembro-de-2023-528496572

Regen10. Available at: https://regen10.org/

United Nations Conference on Sustainable Development. The future we want. Available at: http://www.rio20.gov.br/documentos/documentos-da-conferencia/o-futuro-que-queremos/at_download/the-future-we-want.pdf

United Nations Framework Convention on Climate Change. Article 2. Available at: https://unfccc.int/resource/docs/convkp/conveng.pdf

United Nations Framework Convention on Climate Change. Decision 1/CMA.5. Available at: https://unfccc.int/documents/637073

United Nations Framework Convention on Climate Change. Decision 2/CMA.5. Available at: https://unfccc.int/documents/637073

United Nations Framework Convention on Climate Change. Decision 3/CP.27. Available at: https://unfccc.int/sites/default/files/resource/cop27_auv_2_cover%20decision.pdf

United Nations Framework Convention on Climate Change. Decision 4/CP.23. Available at: https://unfccc.int/documents/65126

United Nations Framework Convention on Climate Change. Decision 1/CP.17, para 74 to 78. Available at: https://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf

United Nations Framework Convention on Climate Change. Decision 1/CP.13. Available at: https://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3

United Nations Framework Convention on Climate Change. Draft Decision -/CP.15: "Cooperative sectoral approaches and sector-specific actions in agriculture". Available at: https://unfccc.int/resource/docs/2009/awglca8/eng/17.pdf

United Nations Framework Convention on Climate Change. Nationally determined contributions under the Paris Agreement: Synthesis report. Available at: https://unfccc.int/documents/632334

World Business Council for Sustainable Development. Action Agenda on Regenerative Landscapes. Available at: https://www.wbcsd.org/Programs/Food-and-Nature/Food-Land-Use/COP28-Action-Agenda-Regenerative-Landscapes-accelerating-the--transition

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