The Economics of Ecosystems and Biodiversity for Agriculture and Food (TEEBAgriFood) Latin America & Caribbean Regional Symposium
Brazil, Colombia, and Mexico
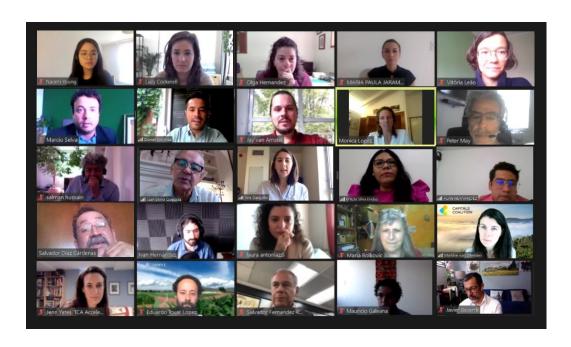### 20-22nd April 2021, Virtual Platform

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Day One (20th): Policy Focus & High-Level Panel Discussions

Welcoming Remarks

1. **Dr. Salman Hussain** (Coordinator, UNEP-TEEB) formally welcomed participants to the TEEB for Agriculture and Food (TEEBAgriFood) Regional Symposium for Latin America and the Caribbean, hosted by the UN Environment Programme. Dr. Hussain noted that this is the third Regional Symposium taking place, following the Africa and Asia regions, meanwhile contextualised by the UN Food Systems Summit. Before formally introducing the Economics of Ecosystems and Biodiversity (TEEB) initiative and TEEBAgriFood, Dr. Hussain warmly welcomed the keynote speakers to the floor for their inputs: Mr. Leo Heileman and Dr. Guillermo Castilleja.

Opening Remarks

2. **Mr. Leo Heileman** (UNEP Regional Director and Representative for LAC) provided the welcoming remarks, firstly contextualizing the role of UNEP and TEEB activities in the LAC region as framed by the "Build Back Better" initiative and the UN Food Systems Summit. Mr. Heileman highlighted the XXII Meeting of the Forum of Ministers of Environment of Latin America and the Caribbean where a decision was adopted to put the environment at the heart of plans calling for accelerated action concerning sustainable agriculture. With the *Latin America and Caribbean Action Plan on Ecosystem Restoration*, the nexus of biodiversity and global food systems is specifically targeted, and especially upon ecosystems such as the Atlantic Coastal Forest and the Cerrado tropical savannahs threatened by advancing agricultural frontiers and cattle production. Mr. Heileman also acknowledged the LAC region's prospects, such as its five million km^2 of arable land, 23% of the world's forests, 29% of worldwide rainfall, and 30% of the global renewable water supply. Despite this, economic growth has been predominately driven in the primary sector and tended towards the unsustainable exploitation of nature-based goods. Furthermore, healthcare, education, and food security continue to impose increasing and competing demands upon strained central budgets. The transformation of food systems therefore requires the holistic approach to natural, social, and human capital within eco-agri-food systems.

3. Mr. Heileman acknowledged the TEEB approach, driven by the principal objective to mainstream the values of biodiversity and ecosystem services into decision-making at all levels, meanwhile using a structured framework to help decision-makers recognise, capture, and value ecosystems and biodiversity. The TEEBAgriFood programme was consequentially developed to apply a holistic systems-thinking to the economics of agriculture and its complex eco-agri-food value chains and invisible "externalities". With partnerships with governments and research entities, TEEBAgriFood is being implemented in three LAC countries (Brazil, Colombia, and Mexico) to contribute to transforming national food systems and delivering upon the Agenda 2030 Sustainable Development Goals (SDGs). Mr. Heileman also highlighted TEEB's work in Natural Capital Accounting in Mexico and Brazil, supporting the measurement of natural capital and development of national ecosystem accounts using the new System of Environmental-Economics Accounting Ecosystem Accounts (SEEA-EA).

4. More widely, Mr. Heileman framed these considerations with the "Build Back Better" initiative and the UN Food Systems Summit, to unleash bold new actions, innovative solutions, and strategies to transform food systems and leverage shifts across the Sustainable Development Goals. While the central

TEEBAgriFood framework pre-dates the Summit and Build Back Better, the work in the LAC region will contribute towards the economic evidence to support the case for a food systems transformation.

5. Finally, Mr. Heileman thanked the European Union Partnership Instrument (EU-PI) and the International Climate Initiative (IKI) from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB), for their funding of the TEEBAgriFood programme applications in the region. Furthermore, he thanked the participation and attendance of the esteemed TEEBAgriFood partners from the Ministries of Environment from Mexico, Brazil, and Colombia.

Introduction to TEEBAgriFood, the Project Cycle, and the UN Food Systems Summit

6. Dr. Salman Hussain (UNEP-TEEB) firstly introduced the TEEBAgriFood programme by highlighting the objectives to make visible the flows of agricultural production as a product of the ecosystem services involved across the agricultural systems, natural environmental systems, and socio-economic systems. Dr. Hussain highlighted the key role of stakeholders such as those present participating at the Symposium, involved in enabling the innovative solutions, actions, and strategies required to leverage food system shifts across the world's regions to deliver progress.

7. Dr. Hussain gave further details on the UN Food System Summit action tracks and work streams, as supported by the accompanying momentum driven by dialogues and engagement, advocacy, communication, and mobilisation of the global community. There is a strong alignment of the TEEBAgriFood projects with the priorities outlined, to protect, manage, and restore nature-positive production in FSS Action Track 3 specifically, and more widely across the other Action Tracks. Through this, innovation can be coordinated and executed in eco-agri-food systems at multi-scalar levels around the world.

TEEBAgriFood Roadmap to Impacts

8. **Dr. Guillermo Castilleja** (Senior Advisor, Global Alliance for the Future of Food) firstly thanked Dr. Hussain for the invitation to participate, and noted his affiliation with the Global Alliance to coordinate the accelerator project for tools such as TEEBAgriFood in the context of accountability and true cost accounting. Secondly, Dr. Castilleja thanked the participation and funding from the European Union, the German Federal Ministry (BMUB), and other organisations supporting the TEEB global initiative, and its values and objectives.

9. Dr. Castilleja firstly remarked that the investments and stakeholders striving to protect biodiversity and food systems must maintain measurable progress in the long-term, meanwhile striking the critical balance between both and eliminating the threats faced. Recognition of the four capitals – human, social, economic, and natural – will be key to underline the intergenerational development and the sustainable realities for the global community. Organisations and institutions involved in this space must be identified to maintain effective approaches and progress when spearheading environmental interventions and efforts. Dr. Castilleja reflected upon the Green Revolution movement and the role of institutions such as the Rockefeller Foundation in the 1960s, with the aim to develop technology to promote development and productivity in food systems. While the economic capacity and revenues were strengthened upon the use of pesticides and widespread production of corn and rice, the stocks and capacity of human and

natural capital were severely undercut. Learning from these past lessons, the work of UNEP and TEEB is therefore significant in maintaining the four capitals as we sustainably transform food systems globally.

10. With the cooperation of organisations such as the Global Alliance for the Future of Food, Dr. Castilleja remarked that we must harness the ways in which different countries and location-specific experiences may be translated into crosscutting expertise to better apply tools and instruments. The collaboration with applications such as TEEBAgriFood country projects may help such processes, particularly noting its ability to make an economic case for a food systems transformation and the support by a strong scientific background and results.

National Perspectives on Food Systems Transformations and Linking TEEBAgriFood Projects to Policy Priorities

11. **Mr. Adilson Oliveira Farias** (Ministry of the Agriculture, Fisheries, and Supply, Brazil) thanked Dr. Castilleja and Dr. Hussain for their invitation, and expressed his pleasure to present on behalf of Mr. Fernando Camargo, the Secretary of Innovation and Development at the Brazilian Ministry of Agriculture, Fisheries, and Supply. Mr. Farias firstly remarked upon the great challenge of sustainable development ahead of Brazil and the world, particularly to feed the world's population meanwhile protecting ecosystems and biodiversity. To contextualise, Mr. Farias noted that Brazil has evolved within 50 years from being from a net importer of food products to their predominance as an exporter of over 150 agricultural goods Sustainable agricultural practices have been readily employed with adaptation to tropical conditions, such as tillage practices, covering soils after harvest to maintain humidity and nutrients in-soil, and the protection of soil biodiversity.

12. To outline the national perspectives of food systems transformation in Mexico, Mr. Farias noted the five priority thematic pillars in the agricultural and innovation sector for integration – the technological revolution, the bio-economy, a digital agriculture, open innovation, and food technology. Firstly, Mr. Farias highlighted the role of a technological revolution in Brazil as a necessary component to disseminate sustainability widely. Thanks to modern advancements in agricultural technology, Brazil has 150 million hectares of land with the current system of agricultural harvests in the tropical regions that supports the shift towards sustainable agricultural systems. However, agricultural technology is only currently being applied in silvo-pastoral systems in line with livestock production, where instead the assessment of greenhouse gas emissions and carbon must be better integrated. Brazil's Low-Carbon Agriculture (ABC) Plan will contribute to the adoption of sustainable agricultural production methods in this manner within the next 10 years, with greater popularisation and roll-out across the country.

13. In addition, Mr. Farias highlighted the role of strengthening the innovation through a bioeconomy and the use of biological inputs in agriculture. There is a strong projection for growth, as the implementation of biological inputs registered with the Ministry of Agriculture has already increased from 200 to 403 products within the last 5 years, bringing in US$190 million in revenue. To support this, implementing a national policy is key to protecting genetic resources and promoting biological innovation, considering both climate change and the eco-agri-food systems. This would require the expertise and collaboration between the stakeholders involved in both agriculture and innovation.

14. Digital agriculture and open innovation are also critical to achieving connectivity towards the interior of Brazil, with integration of modern tools and methods for agricultural productivity and long-term health. Furthermore, 20 innovation hubs are working in Brazil to promote the cooperation between researchers and private companies, accompanied by the development of >2,000 technological start-ups in Brazil. Investment in the start-ups and open innovation has increased from US$4 million to US$200 million from 2013-2019. This is anticipated to be a key area of growth in the coming years, with increased strengthening and stimulation by the innovation secretariat of the Ministry of Agriculture, Fisheries, and Supply.

15. Finally, food technology in Brazil must be better integrated and developed to incorporate sustainability practices and consideration of the values of biodiversity. These may take the form of vertical integration, intelligent packing, and the development of product traceability. In addition, the occupation of forestlands and agricultural expansion must be better assessed to ensure the contribution of agri-food, meanwhile mitigating carbon emissions and ensuring the functioning and health of environmental services. This is particularly pertinent to the expansion of agricultural development across degraded pasturelands in Brazil, the increasing population growth, and the growing demand for agricultural produce for food security. The partnership with TEEB is hence valuable to better understand eco-agri-food systems with a methodology applied specifically to a targeted climate and ecosystem type.

16. **Ms. Lina Maria Tamayo** (Ministry of the Environment and Sustainable Development, Colombia) expressed her pleasure in attending the Symposium, and firstly highlighted the current impetus within the Ministry of the Environment and Sustainable Development to address green and sustainable businesses in the country, since 2011. It aims to establish public-private working networks from the central government to better position businesses and economic activities, enabling the provisioning of goods and services providing positive green impacts and environmentally-friendly practices for natural resources, industrial eco-products, and carbon markets. Specific interventions are on the substitution of hazardous materials, improving product lifespans, increasing recycling capabilities, and improved communication between users of green products.

17. Of the green businesses in Colombia, Ms. Tamayo noted that 83% contribute towards ecosystem restoration, and where the goods and services provided are as classed as bio-trade. Of the given 83% of green businesses in bio-trade, 30% is in sustainable agri-businesses and 22% in sustainable agricultural industries. Their impacts are strong at the community-level, with a greater identified significance for women, the displaced populations, and the youth, to strengthen the capacity of vulnerable communities through agricultural production industries. Notably, of the 57,000 participants in the green business industries working with the central government, 40% are women. The wider participation of women, in particular, has been targeted specifically within leading roles in government entities and green businesses for improvement.

18. Ms. Tamayo further noted the opportunities in production systems highlighted by the global COVID19 health pandemic. Such activities include the following: supporting income generation in the deeply affected regions, promoting ecosystem restoration through income generation activities, leveraging resources being produced and distributed, and providing the knowledge and capacity to diversify economies and consumption patterns. From a green economy perspective, various scenarios have also been integrated into consideration within policymaking, such as the restoration of trees and forests, circular economy systems, payment for ecosystem services schemes, and digital transformations to better position green businesses in markets. The participatory inclusion of ethnic groups in knowledge trainings

and capacity building has also been a point of focus, to influence sustainable consumption choices by making aware the products deriving from national or international markets.

19. **Dr. Sol Ortiz García** (Secretariat of Agriculture and Rural Development, Mexico) introduced the agricultural activities and projects being implemented in the Secretariat of Agriculture and Rural Development, with integration of the IKI-funded TEEBAgriFood Mexico study concerning maize and milpa value chains. Dr. Ortiz García highlighted the three main pillars in the Secretariat – productivity, sustainability, and inclusion – of which are central to harnessing a national food self-sufficiency and food systems restoration to translate benefits for Mexicans at large. Wider Mexican policymaking has also embraced the Sustainable Development Goals and Paris Agreement (UN Framework Convention on Climate Change) targets across the Mexican sectors of central government, taking into specific account the roles of agricultural and livestock production practices within ecosystems nationally. The close linkages between climate change and biodiversity are recognized in Mexico, as remarked by Dr. Ortiz García, and requires the sharing of knowledge and interdisciplinary experiences to target action. A particular focus must be given to the protection of regulatory standards of pesticides, and actions serving biodiversity and pollinators.

20. Dr. Ortiz García indicated that the Secretariat is a core focal point to activities contributing to the Sustainable Development Goals, including a national level GIZ-funded programme for environmental regeneration and food. It aims to supply a bio-seal for producers promoting and implementing environmentally friendly practices for vanilla and honey production systems, amongst others. More widely, environmental projects and campaigning in Mexico aims to promote sustainable adaptation measures, reduce unsustainable practices in rural areas and burning plots, and promote the national strategy and guidelines for the restoration of soil and water for agriculture and food production. These good practices are not only applied to agriculture and cattle-ranching in Mexico, but also extended to fishing institutions and the co-restoration of reefs.

21. With the EU and IKI-funded projects in Mexico, Dr. Ortiz García recognized the need for participatory processes and hard data for internalising environmental, economic, and health values, to obtain the most informed inputs for decision-making.

22. **Mr. Hernando García Martinez** (Humboldt Institute, Colombia) introduced the Humboldt Institute and expressed its objective to contribute to the growing dialogue between politics, society, and science. Colombia was introduced as a country with emerging economic sectors, and wealth in non-renewable resources such as oil and gold. On the other hand, agriculture represents a very large part of the economy and land cover; 70 million hectares of Colombian land cover is maintained for agriculture and cattle grazing, meanwhile 50% of the total Colombian land cover is natural forest. As such, there is a large human footprint nationally and many ecosystems have been severely transformed, thereby maintaining a poor state of health and have lost their original ecological functionality. It is through the Humboldt Institute that ecosystem dynamics between land cover change and agriculture systems has been assessed, making up for a research gap, especially within products such as coffee, African palm, and cattle grazing.

23. Mr. García Martinez highlighted the lack of dialogue bridging agriculture and biodiversity, giving examples where agricultural sectors obtain more funding nationally, and where environmental policies do not map the agricultural frontiers to appropriately assess and conserve the biosphere. This is an oversight for a country such as Colombia, hosting large and rich biodiversity hotspots from the Amazonian region to the Tropical Andes. In parallel, rich timber species also constitute an extensive vulnerability as a result of

increased consumption and demands, logging activities, and the expansion of the agricultural frontier. A transformation in production systems must be applied and embraced, paying special regard to the policy-driven incentives and socio-cultural dynamics of ecosystem management. Furthermore, all members of society must come together and work concurrently, from the community to national level. The Humboldt Institute plays a part here to influence and provide evidence for change across all scales, meanwhile evaluating the timescale of change to suggest short-, mid-, and long-term interventions for sustainable ecosystem transformations. Additionally, intersecting work across different entities in Colombia and across South America play a key role to enrich these interventions across sustainable development and biodiversity conservation.

Panel Discussion

24. First introducing the panel discussion segment, **Dr. Guillermo Castilleja** (Senior Advisor, Global Alliance for the Future of Food) remarked that while environmental and conservation activities all require the recognition of different capitals, there remain impediments to their interlinkages in favour of economic capital. As such, Dr. Castilleja asked the participants what the main challenges are to execute their national environmental agenda, and what policies may be implemented to leave the challenges behind.

25. **Mr. Farias** (Ministry of Agriculture, Fisheries, and Supply, Brazil) first remarked that in times of a global pandemic, one of the great challenges is the resulting effects upon the markets and the way governments perceive the invisible impacts of environment and health, such as those stemming from the global COVID19 crisis. There are great barriers and obstacles in dealing with these invisible enemies, especially upon the development of a green economy. Consequentially, the partnership between Brazil and TEEB plays an important role in creating associations between the relevant stakeholders and promoting sustainable agricultural practices to Brazilian farmers, especially those from vulnerable and poorer backgrounds in north-eastern and western regions of the country.

26. **Mr. García Martinez** (Humboldt Institute, Colombia) also responded and noted the challenges of governance and the application of TEEB projects within the country. He remarked that it was key for markets to incorporate the values of sustainability, meanwhile integrating compatibility and competitiveness of bioproducts at the local level. With these challenges taken into consideration, the transformation of the environment and agriculture may be fruitful.

27. When asked how markets and policies can then facilitate the transformation of eco-agri-food systems in Colombia, **Mr. García Martinez** noted that the economies of countries should be strengthened sustainably, through the implementation of a bioeconomy, competitiveness, and value addition for environmental products such as the bioprospecting sector. At present, we are missing the application and mainstreaming of policies that are being created, to aggregate the values of social and environmental incentives upon a green economy and bio-products in the Colombian market. Furthermore, the wider population must be educated to raise awareness on the implementation of sustainable products and their impacts.

28. **Ms. Tamayo** (Ministry of Environment, Colombia) also remarked upon Mr. García Martinez's comment, indicating that there are challenges to the institutional communications within entities concerned with issues such as the environment and agriculture. There is work underway to improve these concerns, especially in communicating sustainable agricultural practices and activities that are conducive to their development in Colombia.

29. When prompted for Mexico's position by Dr. Castilleja, **Dr. Ortiz García** (Secretariat of Agriculture and Rural Development, Mexico) expressed agreement with Mr. García Martinez and Ms. Tamayo, whereby innovative solutions and actions are missing to support and influence the markets. Firstly, Dr. Ortiz García specifically reflected upon the data gap present in Mexico which would otherwise allow decision-makers to better visualize the issues and areas of action for improvement. The costs of inaction at present only serve to heighten the compounding costs in the future. Secondly, Dr. Ortiz García remarked that there is a need to value natural capital and biodiversity, thereby incorporating these elements into the decision-making processes. With this be considered, there may be greater receptiveness of decision-making ideas to consider environmental impacts with economic profits.

30. In sum, **Dr. Castilleja** thanked the panellists for generating a valuable reflection on the importance of biodiversity, agriculture, and climate change considerations to determine political actions and decision-making. The different perspectives highlighted the data capacity needs in their countries, and the detrimental impacts of segregating governmental sectors and instruments involved in transforming eco-agri-food systems. More widely, the linkages between the environment, agriculture, and economic systems must be integrated into coordinated actions, both nationally and regionally.

31. **Dr. Salman Hussain** (UNEP-TEEB) also thanked the panelists for their honest answers and insightful commentary. In reflection, Dr. Hussain noted the misconception that TEEB aims to commoditize nature; the intrinsic value of biodiversity cannot be priced. He instead highlighted that it is the instrumental value of ecosystem services that a monetary or non-monetary value may be assessed and applied to decision-making. Such include the benefits of pollination services brought about by well-functioning ecosystems and market devices, or the detrimental costs of soil erosion and what human interventions and mechanisms need to be applied. Therefore, TEEB activities and projects taking place do not attempt to value biodiversity, but instead to capture the provisioning benefits of nature and biodiversity upon the economy.

COVID19, the Environment, and Food Systems: Contain, Cope, and Rebuild Better

32. Presenting on the Amazonian region during the global COVID-19 health pandemic, **Mr. Mauro Reyes** (Fundación Natura, Colombia) introduced the wide impacts of COVID-19 in Colombia, and the role of Fundación Natura to contribute to the national "Build Back Better" efforts and the TEEBAgriFood Amazonian palms value chains. Mr. Reyes reflected on the green and inclusive recovery in agriculture, food, the natural environment, and the relationship between Amazonian palms and the indigenous peoples of Colombia. Notably, the Amazonian palms have been recognized as a key food source and source of income for local communities, meanwhile providing revenue streams in pharmaceutical applications.

33. Mr. Reyes highlighted that the pandemic has had significant impacts on the Colombian Amazon, finding that the cities with the highest death rates and health vulnerabilities from COVID-19 are situated within the Amazon rainforest. Mr. Reyes made clear that this is primarily due to the fragile socioeconomic conditions in the region i.e., poor social, nutritional and health conditions as well as weak infrastructure, in combination with the lack of governmental presence which has exacerbated the vulnerability of indigenous communities. Furthermore, the pandemic also had effects on the employment rates in the

region resulting in the loss of 8-15% of employment, and with greater direct and indirect impacts upon women. However, the agricultural sector proved to be resilient, which Fundación Natura highlighted as a window of opportunity.

34. With regards to the post-COVID19 recovery and the eco-agri-food systems in the Colombian Amazonian area, the objective of the TEEBAgriFood Colombia project aims to guide public policies for the sustainable and equitable production of Amazonian palms in line with carbon-neutrality. Mr. Reyes also highlighted the co-benefits accruing from the sustainable development of Amazonian palms, including carbon sequestration, sustainable tourism, sightseeing, sustainable land management, decarbonization strategies, and economic recovery against the spread of deforestation and cattle ranching activities.

35. As a product of the TEEBAgriFood methodology, Mr. Reyes remarked on the identification of value chains, engagement in participatory processes with the population to identify the most promising Amazonian palm products, definition of an action plan, and the intentions to analyse policy frameworks, indicators, and baseline information. The use of a multi-criteria analysis method was also put forward, to invite the greatest participation of actors to obtain inputs for the assessment of biodiversity and ecosystem services. These processes fall in line with the TEEBAgriFood Evaluation Framework and methods to visualize the invisible and intangible externalities in agricultural value chains, allowing Fundación Natura to make the case for the assessment and sustainable management of ecosystem services generated from Amazonian palms.

Q&A Discussion

36. **Dr. Salman Hussain** (Coordinator, UNEP-TEEB) firstly remarked on the strong portrayal of related COVID19 impact drivers which continuously undercut efforts to "Build Back Better", such as employability and gender inequality. As such, Dr. Hussain asked how Mr. Reyes perceived that people should make the case for a shift in sustainable agricultural practices to "Build Back Better". In response, **Mr. Reyes** outlined that the current economic model does not favour the agricultural production systems, especially regarding impacts resulting from the global COVID-19 crisis. As such, investments are required to improve infrastructure, competencies, and response capacities to combat the environmental impacts felt by the COVID-19 pandemic. Colombia may specifically respond to this by harnessing a better understanding of deforestation impacts upon GDP, the roles of sustainable practices to contain deforestation impacts and their economic implications, and the movement of rural-poor populations towards urban areas.

37. Secondly, **Dr. Hussain** asked how multi-criteria analysis should be integrated in Colombia, and how significant the method is for the country to consider sustainable agricultural production systems. **Mr. Reyes** remarked that regional level analysis may differ considerably from national-level analysis, and it is therefore important to validate the scenarios used in analysis for environmental conservation and to consider the different variables applied. Upon the post-COVID19 recovery in Colombia, the government hopes to recover more than 3 million jobs with consideration of the environment and gender perspectives, especially in sectors such as infrastructure and mining. It is through the validation of such scenarios that sustainable development may integrate the values of ecosystem services and with consideration of all actors involved.

38. Finally, **Dr. Hussain** asked what role businesses have in "Building Back Better", considering the responsibility to create jobs, evaluate the mining sectors, and promote sustainable behaviours. **Mr. Reyes** noted the participatory consultations taking place within society and with the local communities, ensuring

to support local empowerment before implementing mining projects and processes. There are also considerations for biodiversity loss, where compensation schemes are in place to support local communities. These are strong mechanisms involved in representing and engaging the local communities, meanwhile ensuring sustainability.

Overview Zoom Poll

39. In response to the first day of the Latin American and Caribbean TEEBAgriFood Regional Symposium, the following questions were posed to the participants to gain understanding of the national contexts where TEEBAgriFood has been applied:

   - *Why have nature's values largely remained invisible in your country?*
     Of the 24 respondents, 12 respondents found that the reason for the invisibility of nature's values in their countries was attributed to the lack of recognition of nature as a development priority (50%), followed by a lack of data (6 respondents, 25%) and awareness (5 respondents, 21%).

   - *Where will the work of the TEEBAgriFood Evaluation Framework be the most useful in your country?*
     Of the 24 respondents, the most impactful outcome of the TEEBAgriFood Evaluation Framework in LAC was found to contribute to the mainstreaming of valuation in decision-making (17 respondents, 71%), followed by the contribution to understanding the implicit trade-offs in decision-making (14 respondents, 58%). Thirdly, eleven respondents agreed that the TEEBAgriFood work would be the most useful to generate discussion amongst stakeholders (46%), and finally, to produce more scientific studies (6 respondents, 25%).

   - *Do you think that your country is implementing a post-COVID19 green and inclusive recovery, taking into account the eco-agri-food systems?*
     Of the 24 respondents, the majority (87%) disagreed with the statement, finding that the country was not implementing a post-COVID19 recovery in consideration of eco-agri-food systems. On the other hand, only three respondents agreed with the statement (12%).

Closing Remarks

40. To close the first day of the TEEBAgriFood Latin American and Caribbean Regional Symposium, **Dr. Salman Hussain** (Coordinator, UNEP-TEEB) thanked the presenters and panellists for their speeches, and especially gave thanks to Dr. Guillermo Castilleja for his keynote speech and moderation of the panel discussion. Dr. Hussain remarked that the presentations were enlightening and that it was good to hear perspectives concerning circular and green economies, and how they may piece together in the LAC region to support ecosystem services.

41. Dr. Hussain briefly outlined the agenda for the second and third day, featuring presentations outlining the methodologies employed in the TEEBAgriFood projects in service of national policy change, bringing together data and evidence.

Day Two (21ˢᵗ): Technical Focus and In-Country TEEBAgriFood Project Presentations

Opening and Welcome Remarks

42. **Ms. Maria-Paula Jaramillo** (Programme Management Officer, UNEP-TEEB) welcomed participants to the second day of the LAC Symposium, briefly mentioning the technicalities of the interpretation functionality. Ms. Jaramillo laid out the agenda for the day by explaining that representatives from research institutions in Brazil, Colombia and Mexico who are already in the process of applying the TEEBAgriFood initiative will present their methods and approaches that aim towards impacting public policy where necessary. Experiences and priorities regarding the need to identify the values of nature in decision making and transforming agri-food systems into more sustainable and equitable systems will be explored, in combination with COVID-19 impacts and responses.

TEEBAgriFood Methods and Approaches: Scenario Modelling of Natural, Social, and Human Capital

TEEBAgriFood Methods and Approaches – Colombia

43. **Dr. Olga Lucia Hernández Manrique** (Alexander von Humboldt Biological Resources Research Institute) explained that the study focus area is a biodiversity hotspot with a very diverse landscape within the Amazon region in South-Western Colombia in Sibundoy Valley, Putomayo. The area was chosen due to the continuous disconnect between conservation and production agendas which has led to a complete transformation of the valley, impacting the indigenous groups and farmers living in the region.

44. Dr. Hernández mentioned facing challenges in terms of the methodological application:
    a. The first concerned how to apply the approach to an entire multifunctional landscape in a comprehensive way, rather than just to one crop, while taking all the productive systems in the area into consideration. In response they developed landscape units that consider climate, geography, land coverage, type of agricultural farmer and the technology being used in the territory, which provided them with a comprehensive overview at the landscape level, featuring the different characteristics of the productive systems in the different layers. In addition, they generated a model for the landscapes using the systems approach which mapped out the different landscape units, ecosystem services, land uses, natural areas, and even certain species and food groups including products used for self-consumption as well as direct sale products. The model was applied to each landscape unit and displayed evidence of transformations from the various productive systems allowing for a comprehensive understanding of the entire landscape.
    b. The next challenge concerned identifying the impact of the policies on these landscape units. The research team initiated what they called a "network of implications" which visualizes the impacts of each landscape unit within the entire network, taking conservation-, economic-, social-, and political aspects into consideration in the network. In addition, it shows the level of application

of the relevant policies in the region which enables an understanding of which prescriptive scenarios to implement to create policy recommendations concerning how the territorial agreements need to be rearranged.

c. Additional challenges involved how to best coordinate with territorial institutions at different levels, how to strengthen the scientific base and translate the system to other larger landscapes in Colombia. There is a need to support the territorial pacts between the different actors to comply with existing measures and generate new measures. The main issue is that the necessary policies are simply not being applied, which has created the need to work in a coordinated and collaborative way to build capacities to bring about changes to shift the trend in the coming years.

45. The focus is on different prescriptive scenarios in the landscape units in the Sibundoy Valley. Potential changes to the parameters of the model have been considered by investigating which simulated changes would bring about modifications in the model dynamics, while identifying where the system is sensitive to changes. This helps identify behaviours based on the modifications and provides insights into which policies need strengthening in the different units. The landscape units with similar needs can then be grouped together and used to define specific patterns after which detailed policy recommendations can be provided for each landscape unit.

46. Dr. Hernández highlighted that their methodology is designed to be replicated. Collaboration is therefore ongoing with communicators and designers to disseminate the study results while strengthening relationships between the agricultural and the environmental sector. Online opportunities where scenarios can be simulated with different parameters are also being explored. Finally, Dr. Hernández expressed gratitude to her team as well as to the peer review support which has considerably contributed to improving the work.

Q&A Discussion

47. **Ms. Jaramillo** (UNEP-TEEB) asked which issues have arisen that have made it impossible to implement recommendations in the territories? In response, Dr. Hernández explained that the hurdles are, firstly, a lack of knowledge about the policies and secondly, due to the different lifestyle of the indigenous communities in comparison to those in the municipal government/farmers, they might not have the capacity to apply the policies. In addition, she highlighted the need for the agricultural and technological packages available on the market in the territories to not only be designed to produce crops but to be environmentally friendly and protect biodiversity as well. As such, there is a need to foster a better-informed community who will apply these sustainable methods from their own knowledge.

48. **Mr. Ricardo López** (National Land Agency, Government of Colombia) asked whether any timelines have been determined for implementing the territorial initiatives in terms of the study, the recommendations, and their applicability. Dr. Hernández answered that the study has been ongoing for two years now and that due to the dynamic environment, many ways of working have been generated in the project process, and that progress has therefore, despite being positive, been relatively slow. The first stage has been to generate well-functioning collaboration, and the next stage is now to integrate production and conservation agendas to improve livelihoods and environmental outcomes, in social, economic, political, and environmental terms, which will be the beginning of a process that needs to happen in the long-term.

49. **Dr. Salvador Fernandez Rivera** (Secretariat of Agriculture and Rural Development) enquired how local communities are participating in developing solutions and how they are integrated in the design and

decision-making in combination with the institutions. Dr. Hernández replied that even though limited time was spent in the field working with the local population, they were able to provide most of the primary information that was used to construct the models. The geographical and political presence of indigenous communities has therefore been strong. The first stage of the research did not include an assessment of local capacity which indeed is something that should be incorporated in the future. Strengthening capacity is arising as one of the recommendations for future studies and would likely be in the hands of other entities and partners, rather than the institutions.

50. **Dr. Robert Manson** (INECOL) asked Dr. Hernández to expand on the technological aspect of replicating the model in other areas of Colombia. The model is dynamic and innovative and can be applied in each separate analysis unit to shed light on how the larger environment functions and which policies need to be improved. The model algorithm is one of the most beneficial outcomes that the project renders and can be used and modified according to the needs of the regions/companies/communities/authorities in other ecosystems in the Andes.

51. **Ms. Jaramillo (**UNEP-TEEB) asked how the focus of the study was defined in relation to crops grown in the specific landscape environment. Dr. Hernández explained that because the different ecosystems within a territory are inseparable, studying the entire productive system in the landscape provides a more accurate and comprehensive overview of the stocks and flows, in comparison to only focusing on one single productive system and its ecosystem services. The challenge now is to grasp how 'the economics of ecosystems and biodiversity' is shared between people, so that it can be reflected in a product on the market.

52. **Dr. Robert Manson (**INECOL) enquired as to how the scenarios were developed with the local communities, to which Dr. Hernández replied that an in-person workshop where the principal participation was with indigenous communities. The workshop gauged what was occurring in the territories in terms of transformations and developments, and was followed by an online workshop. The importance of face-to-face meetings was highlighted regarding working with secluded indigenous and agricultural communities, and as such, feedback was limited as not all relevant stakeholders were able to participate. This is an issue that needs to be solved as recommendations from the local government/ regional authorities need to be explained to the communities in person. However, they may be compelled to wait until the COVID-19 situation has improved.

53. **Dr. Vinicio Sosa** (INECOL) asked if any specific software package was used, to which Dr. Hernández replied that MATLAB and VENSIM were both used for modelling purposes.

54. When asked by **Mr. Eduardo Quintanar** (UNEP, Mexico) how local governance capacities can be strengthened, Dr. Hernández replied that recommendations generated by the study are related to improving the coordination amongst actors, as well as to coordination mechanisms, pacts, and associativity.

55. **Dr. Robert Manson** (INECOL) asked whether the same approach would be applied if a certain crop would begin dominating, and whether a threshold exists after which another model/approach should be applied instead? Dr. Hernández answered that the approach still applies, and that the dynamic model captures the interactions between various crops and uses within each landscape, making it possible to recognize crops, pastures, natural areas etc.

TEEBAgriFood Methods and Approaches – Brazil

56. **Ms. Monica Lopez** (Programme Management Officer, UNEP-TEEB) introduced the Brazil work by explaining that prior to developing the TEEBAgriFood Framework, several exploratory studies were conducted, one of which took place in Brazil. The focus of the study was on the soybean value chain, corn, and livestock in the Amazon. The upcoming presentations will therefore cover the work that has been ongoing in Brazil.

57. **Dr. Angelo Costa Gurgel** (São Paulo School of Economics, Foundation Getulio Vargas) began by introducing the team and presented the efforts made so far on the TEEBAgriFood Brazil study. Brazil is a strong, global agricultural player that has actively been developing agricultural technologies for increased production in the past decades. Dr. Gurgel emphasized therefore that the time is right for marrying the agricultural agenda with the environmental agenda to transition the nation into an agro-environmental power. However, despite being a leader in food production Brazil lacks a strong sustainability agenda which is the reasoning behind initiating the study. The analysis aims to examine the value chain, demonstrate the benefits of sustainable solutions, and enable increased collaboration between stakeholders to ultimately influence public and private policy.

58. In the first stage of the project, a background study was conducted providing an overview of the opportunities and challenges in Brazil's sustainable production sector, which the national management committee will use to determine the project scope to successfully transform production systems. Dr. Gurgel remarked that they are currently finalizing the background study and entering the implementation phase. As an extensive amount of research and well- informed institutions already exist in Brazil, there is a certain level of understanding around the prevailing environmental concerns. As such, the background study primarily covers existing data and serves to validate previous work.

59. Dr. Gurgel explained the governance structure, mentioning the implementing institutions GV-Agro and Agroicone, as well as the involvement of the technical committee, management committee and the focal ministry i.e. the Ministry of Agriculture, Livestock, and Food Supply (MAPA). Multiple existing options for sustainable production expansion in Brazil were identified and grouped together including sustainable livestock intensification, agroforestry systems, direct planting, crop-livestock-forest integration, waste management etc. The team then tried to pinpoint where the practices already exist, potential for expansion, limitations and actors involved, as well as identifying relevant public policies in place where some of the sustainable practices are already taking place. Due to the lack of quantitative information, the research team has been focusing on acquiring quantitative data (primarily through using the ABC platform – Emprapa). The team has also been investigating the sustainable intensification of the use of degraded pastureland.

Q&A Discussion

60. **Dr. Robert Manson** (INECOL, Mexico) pointed out that foreign investments and international organisations have been promoting agricultural expansion and are trying to obstruct the value chain and cover their tracks – asking how the TEEB study will treat this situation? Dr. Gurgel remarked that the study will certainly have to consider the growing international investments in Brazilian agrobusinesses and their impact on the value chain.

61. **Ms. Monica Lopez** (UNEP-TEEB) wondered how the sustainable use of degraded pastureland can be promoted to which Dr. Gurgel replied that various technologies and holistic practices exist to intensify cattle ranching in a sustainable way in environmental, economic, and social terms. There are many Brazilian producers who already know how to manage their pasturelands very well in a way that avoids long-term degradation, for instance in terms of well-managed grass or the integration of farming and pastureland. To be able to improve and recover degraded pasturelands however, the study scope must be very well-defined to receive satisfactory results.

62. **Professor Peter May** (Federal Rural University of Rio de Janeiro, UFRRJ) noted the pressure on the forests, the Cerrado, the tropical savannah and the expansion of the agricultural frontier into the rainforest. Professor May emphasized the need to proceed with zero deforestation agreements in regions opening new borders, and asked how the study can contribute towards creating agro-environmental policies. Dr. Gurgel remarked that TEEBAgriFood has an immense responsibility to apply the framework to the scope in Brazil, underlining that their efforts will be wasted if deforestation rates continue at the current pace while the agricultural frontier expands. Some policies are in place to combat the issues but many need to be improved and therefore, TEEBAgriFood can help put pressure on public institutions and decision-makers to develop more sustainable policies.

TEEBAgriFood Methods and Approaches – Brazil (continuation)

63. Subsequently, **Ms. Vitória Leão** (Instituto Escolhas) presented the results of their research on Urban Agriculture and Ecosystems Services in the Metropolitan Region of São Paulo. The study analysed the potential of urban and peri-urban agriculture in providing ecosystem services as well as healthy food to the metropolis of São Paulo, with a population of around 20 million inhabitants, in the context of its constant urban growth. Ms. Leão explained the stages of the TEEBAgriFood application in detail, mentioning among other things that mixed methodologies were applied in the process, five ecosystem services were focused upon over three time-horizons to analyse the possible trade-offs, limitations and possibilities for interventions. Results have consequently been demonstrated online.

64. Ms. Leão highlighted the vast heterogeneity of urban agricultural systems which impact the surrounding ecosystem services in varying ways. The systems mentioned included small-, medium- and large-scale commercial agriculture systems, multifunctional agriculture systems, commercial family agriculture systems, and urban vertical agriculture systems. These management systems produce varying amounts of harvests, require different levels of inputs and technological requirements, which in turn reflects different biophysical performances on agriculture which in turn influences its capacity to produce or provide ecosystem services.

65. **Mr. Jay Marinus van Amstel** (Instituto Escolhas) continued by presenting the spatially explicit biophysical models that were used to assess the chosen ecosystem services in the study, as well as highlighting the primary limitations. The heterogeneity of the different management practices mentioned guided the scope of the biophysical parameters that were found in the existing literature. The conclusion of the study is that the implementation of urban and peri-urban agriculture in the metropolitan region of São Paulo would contribute to the provisioning of ecosystem services, while cushioning the impacts of the areas' urban growth. It was argued that the alternative strategic option would help regenerate natural capital while strengthening social and human capital through increasing food and nutritional security by providing

fresh and healthy food to those without access and with high social vulnerability. In addition, it would also be a possible source of income generation which would enable increased gender equality.

66. Mr. van Amstel concluded by explaining that there are ways of identifying sustainable urban and peri-urban agriculture as part of a portfolio of alternatives to reshape the process of metropolitan development, but highlighted the importance of combining it with a wide range of solutions in both urban and peri-urban environments. As such, a regulatory framework at the metropolitan level should define urban and peri-urban agriculture, while payment for ecosystem services (PES) schemes should be implemented, land use regulation policies should be strengthened, and access to credit, technical assistance, and alternative efficient water sources such as rain catchment systems, should be increased.

Q&A Discussion

67. **Dr. Alan Hernandez** (Iberoamerican University, IBERO, Mexico) asked how the economy and its effects on capital as well as on demographic variables, is/will be modeled in the project? Mr. van Amstel explained that COVID-19 illuminated the vulnerbility of the medium and largescale commercial farming systems to changes due to their complex value chains, whilst more localized smaller organic systems which are less dependent on inputs are more autonomous and are therefore more impregnable and guarded to shocks.

68. **Dr. Robert Manson** (INECOL, Mexico) asked whether there is a role for community gardens in the study, pointing out that despite their size, they could be important to consider given their large potential numbers. Mr. van Amstel replied that community gardens are not represented in the study as of yet, but agreed that community gardens create collaborative networks and depend on human and social capital to become viable in the urban landscape, and should therefore be looked at in more detail. The research team is currently in the process of trying to better grasp the values that can be measured in human and social capital terms through the TEEBAgriFood Evaluation Framework.

Overview Zoom Poll

In response to the second day of the Latin American and Caribbean TEEBAgriFood Regional Symposium, the following question was posed to the participants:

- *What would you consider effective way(s) of deciding the policy scope for TEEBAgriFood analyses? (Multiple choice question).*
  Of the 32 respondents, 22 found that technical and political mixed working groups were the main effective way of deciding the policy scope for the analyses (69%), whilst half (16) found that present narrowed down policy options to stakeholders were more effective. 12 respondents believed that it is dependent on the context (38%), 11 respondents thought small and targeted high-level groups should be used to decide the policy scope (34%), 5 opted for policy/high-level steering groups consulted separately from technical groups (16%), and 3 thought the most effective option would be to start the consultation with a "blank slate" (9%).

TEEBAgriFood Methods and Approaches – Mexico Initiative I (IKI/GIZ Mexico)

69. **Dr. Alan Martín Hernández Solano** (Iberoamerican University, IBERO) presented the TEEBAgriFood Mexico project which is being developed by a research consortium led by researchers from IBERO, UADY (University of Yucatán), UOL (Lincoln University), CIMMYT (International Maize and Wheat Improvement Center), and IFPRI (International Food Policy Research Institute). The study aims to contribute to the development of policies linked to the corn and milpa production system in Mexico, in the context of BaU and climate change, as well as the execution and analysis of alternative public policy scenarios. The research team analyzed which results can be expected on the production and productivity of corn, the food and nutritional system of the country, and the associated human, social and natural capital. They also studied what policy options and alternatives the federal administration would have at its disposal to positively influence said expectations.

70. The project has considered different mechanisms to achieve political influence and as such, the participative methodology has required continuous consultation with the Steering Committee to define the scope. The chosen scenarios were therefore based upon the interests, needs and expectations of the Steering Committee. The project consortium held bilateral meetings with the Steering Committee to identify the agencies willing to adopt the analysis, results and recommendations to propose specific policies. The team decided upon three time-horizons, for which they will consider and simulate climate change projections as well as policy expectations, while measuring the impacts on the different capitals. Data on the agricultural sector is still being gathered to be able to create robust models, meaning that the scenarios are still at a preliminary stage, and the political viability of the scenarios is also yet to be determined. The goal is then for decision-makers to understand the impacts and how they correspond to various policies, and to translate the recommendations from the study into public policy.

71. Dr. Hernández explained that the main challenges included: that the governmental institutes accept the project recommendations; that the contributions of academia in seeking solutions and proposing policies are valued; budget restrictions in the sector which may be worsened by the pandemic; as well as that the objectives of the policies proposed in the study are aligned with the interests of decision makers.

Q&A Discussion

72. **Dr. Salvador Fernandez Rivera** (Secretariat of Agriculture and Rural Development) asked how the corn-milpa system is defined, its socioeconomic characteristics and the distribution or the extension in the country. **Dr. Javier Becerril** (University of Yucatán) replied that there are many different definitions of milpa, but the one that the study applies is broad and is generally used referring to Mesoamerica (from the southern part of Sinaloa to Central America). Milpa is an agroecological polyculture system that encompasses three crops which are corn in different forms i.e. corn, beans and squash which are all important in Mexican cuisine. Dr. Hernández added that gaining access to reliable sources has been a limitation.

73. **Mr**. **Salvador Díaz Cárdenas** (Autonomous University of Chapingo) remarked that corn is of such historical importance in Mexico, that the phrase "sin maíz no hay país" (without corn, there is no country) has been coined. He asked how therefore, how the study aims to influence national agricultural policy, and pointed out the importance of expanding institutional participation, particularly with researchers from the Autonomous University of Chapingo and the Graduate College. Dr. Hernández replied that it is a very complex challenge, but that by heavily involving the federal government and the Steering Committee,

they are trying to incorporate all important elements to improve the study quality. He noted the vast amount of support that has been provided, asserting that they are doing their best efforts for the greatest possible policy impact. Mr. Javier added that the National Institute of Statistics and Geography (INEGI) has provided a broad system of national accounts and created the so-called social control matrix for Mexico, allowing them to identify commercial producers, subsistence producers, self-supply producers as well as differentiating between small, medium- and large-scale producers to establish an inclusive overview of the corn production system. There will likely be synergies with other ongoing studies at various foundations, universities and research organizations as well which will be useful.

Closing Remarks

74. **Ms. Maria-Paula Jaramillo** (Programme Officer, UNEP-TEEB) thanked the speakers and participants for a fruitful session, observing the variety of methodologies, landscapes and foci that were presented, as well as the need, relevance, and timeliness for the studies that emerged clearly. She noted that one of the greatest challenges that was brought up during the day was related to gathering high quality data to be incorporated into the research process so as to feed into public policies. Ms. Jaramillo welcomed participants to the final day of the Symposium, and briefly outlined the agenda which will feature presentations on the methodologies and the private sector work.

Zoom Poll

75. In response to the second day of the Latin American and Caribbean TEEBAgriFood Regional Symposium, the following final poll questions were posed to the participants:

- *How would you respond to the statement: "I have gained a deeper understanding of the TEEBAgriFood Evaluation Framework and its approach to generating change in policy?*
  Of the 19 respondents, the majority i.e., 11 people agreed to have gained a deeper understanding (58%), while 6 strongly agreed (32%), and 2 disagreed (11%).

- *Have the other in-country presentations presented scenario modelling best practices that you may take forward in your own TEEBAgriFood country projects?*
  Of the 19 respondents, 11 believed there were methods and approaches which they can learn from and apply (58%), 6 believed there were methods and approaches they could consider (32%), while 1 respondent believed their methods and approaches have already been well aligned, and another single respondent thought that most methods and approaches were not relevant to their in-country projects (5%).

- *Do you think that the four capitals (human, natural, social, and economic) have been holistically and appropriately represented in the methods and approaches used in your in-country TEEBAgriFood project?*
  Of the 19 respondents, 12 agreed that all capitals have been holistically and appropriately represented (63%), 5 respondents strongly agreed (26%), and 2 disagreed (11%).

- *What do you perceive as the main threat to biodiversity and ecosystems in your country?*

Of the 19 respondents, 7 found that financial incentives/market systems were the main threat (37%), while 5 thought it to be anthropogenic climate change (26%), 2 voted for soil erosion and land degradation (11%), 2 voted for unsustainable consumption patterns (11%), and equally, 2 voted for pollution (air, land and water) (11%), while 1 respondent voted for habitat encroachment (5%).

- *What do you perceive as the main threat to food security in your country?*
  Of the 19 respondents, 7 believed the distribution of produce was the main threat (37%) alongside 7 others who believed financial incentives/market systems were the main threat (37%). 3 respondents believed production practices to be the threat (16%), while 2 believed it was due to ecosystem degradation (11%).

- *In your opinion, how did you find the interpretation functionality of the symposium?*
  Of the 19 respondents, 17 found it to work very well, having not experienced any issues (89%), while 2 respondents found the interpretation to work OK, having experienced a few issues (11%).

Day Three (22nd): Private Sector and Methodological Focus

Welcoming Remarks

76. **Ms. Monica Lopez Conlon** (Programme Officer, UNEP-TEEB) welcomed the panellists, speakers, and event participants for the final time to the TEEBAgriFood LAC Regional Symposium. She reflected upon the LAC Regional Symposium overall, highlighting the valuable high-level panel discussions on the first day between the Ministries of Agriculture and Natural Resources from Brazil, Colombia, and Mexico. The second day covered the methodological presentations concerning data collection, modelling, and engagement of actors in the TEEBAgriFood projects. Thematic sessions have also showcased the cross-cutting project considerations, such as the global COVID19 crisis and the way projects have adapted accordingly. This will be further complemented by the thematic sessions on this final day, exploring the linkages between business and biodiversity as facilitated by the Capitals Coalition, and the role of geospatial platforms and mainstreaming results using targeted communication strategies.

TEEBAgriFood and Business Applications

Capitals Coalition

77. Representing the Capitals Coalition, **Ms. Martine van Weelden** introduced the collaboration, and its relationship with the TEEBAgriFood programme and the associated project implementation activities. It works towards the ambition whereby the majority of businesses will include the four capitals in decision-making by 2030 – specifically human capital, natural capital, social capital, and economic capital. This will tackle the losses of nature, climate change, and inequality, as it currently forms the basis upon insufficient

information excluding people and nature. As a result, the better incorporation of valuation in nature, people, society, and the economy will transform the decision-making landscape.

78. Ms. Weelden introduced the Capitals Coalition conceptual model, helping businesses understand how their operations, strategies, and external disclosures are directly or indirectly underpinned by the four capitals. With a greater understanding and empowerment, businesses move from the measurement to the valuation of their impacts and dependencies upon the four capitals at a system-level. This is a clear business case for the protection and investment priorities for the health and resilience of the previously undervalued capitals, with the aim to achieve cascading effects upon the businesses. Notably, the approach allows businesses to inform their strategies, compare and decide between options for decision-making, estimate total values, inform environmental profit and loss accounts, assess impacts on stakeholders, and use to communicate internally or externally on reports.

79. Cases in Brazil and Mexico are currently in development, based on the Capitals Coalition conceptual model. Multiple business applications have been assessed, such as the comparison of options and improvement in communication methods, and they aim to better understand and evaluate the impacts generated across their food system production systems. To this, Ms. Weelden introduced the following case study presentations.

Mexican Alliance for Business and Biodiversity (AMEBIN)

80. **Ms. Ana Gargollo** (Pronatura Mexico A.C.) firstly introduced AMEBIN, and its conceptualistion at the UN Convention on Biological Diversity COP13 held in Cancun and framing by the Sustainable Development Goals. Its mission aims to channel the collective action of members, comprising of financial institutions and civil society organisations, towards the restoration and sustainable use of biodiversity for conservation. This is achieved through the exchange of information and knowledge, multisectoral dialogues, and capacity building. Its secretariat is composed of a civil society organization and business taking two year terms, and is organized in task forces to target specific projects and their implementation.

81. **Mr. Daniel Sanchez y Sanchez** (Reforestamos) remarked upon the partnership between AMEBIN and Capitals Coalition in Mexico, having trained over 20 companies with the TEEBAgriFood methodology and building trust through intersectoral partnerships to establish sustainable business structures. This has been accompanied by partnership between the Mexican public sector, Capitals Coalition, and GIZ. Going forward, the partnership aims to posit the understanding of natural capital firmly in the productive sectors in Mexico, meanwhile promoting the exchanging of experiences and services between peer countries for social and financial development of businesses. In addition, the framing of natural capital within a business's operations must be grounded politically, with regards to their commitments to sustainability internally.

82. Mr. Sanchez highlighted that knowledge gaps remain between the private and agri-food sectors in Mexico, and the following concerns must be identified: what are the needs and challenges for sustainable production, where are the companies, what is needed, what has been tried, what lessons have been given, what mistakes have been made, and what is needed systematically to work on the results.

Banorte

83. **Ms. Britzia Silva Enciso** (Grupo Financiero Banorte) outlined Banorte's main objectives to evaluate the capitals orientated towards financial challenges, and to analyse the impacts generated from the changing natural, human, and social capitals. With results and analysis generated, Banorte's role helps to establish the viable opinions in financing efforts, meanwhile integrating credit files and committees to those who maintain decision-making to grant the credits. With the experience in multi-capital valuation, the analysis can be replicated to sectors such as the avocado production systems and financing efforts; the avocado production sector represents an area of opportunity for Mexico as a primary exporter for the world. As such, Banorte plays a key role to work amongst the risk and credit areas to assess multi-capital and financial impacts, as aligned with credit needs for sustainable financing.

84. Ms. Enciso also highlighted the ability to specify which crops are needed to focus upon and which projects should obtain the greatest priority in Mexico, in line with opportunities for growth and integration of methodologies. This may be executed through the analysis of scenarios in comparison to the business-as-usual scenario, as to indicate the opportunities for method establishment. These processes have helped to enrich the learning process for Banorte and the businesses, meanwhile strengthening the in-house sustainability knowledge and capacity. Ms. Enciso also remarked upon the meetings with the Swedish International Development Cooperation Agency (SIDA) as part of the Capitals Coalition projects, with expansion of opportunities, networking, and implementation and increasing the impact of the projects.

Association of Producers and Packers/Exporters of Avocados of Mexico (APEAM)

85. On behalf of the Association of Producers of Packers/Exporters of Avocados of Mexico (APEAM), **Mr. Juan Rafael Elvira Quesada** presented the sustainable business applications in avocado production in Mexico. With use of the Capitals Coalition methodology, APEAM has been able to work with the federal government and integrate official data to evaluate the environmental impacts upon ecosystems with the production of avocados. Specifically, Mr. Quesada noted that although crop production could not be halted nor could forests be returned, the recovery of forested areas and mitigation of environmental impacts may contribute significantly in tandem with the increased export activities. As such, APEAM has maintained 559,000 hectares of forests amongst the 147,000 hectares of avocado plantations for its production in the northern Michoacán district. This falls in line with similar strategies employed for the mango, lemon, cacao, tomatoes, and agave production systems in Mexico, as to better showcase a positive impact in the international export market for Mexican products.

86. Mr. Quesada remarked that the sustainable training and operations methods provided by the Capitals Coalition will be deeply beneficial for the 28,000 avocado producers and 500,000 jobs in the value chain, of whom will employ sustainable practices with a self-led initiative. This shift has reflected a change from the past 40-50 years, whereby the area was considered as marginal lands and accompanied by the lack of environmental management knowledge. As such, the revitalized perception of the forests as a rich natural capital resource has strongly accompanied the sustainable agricultural practices. With regards to the local biodiversity, the sustainable production systems are particularly critical to the resilience of avifauna populations and the migratory monarch butterfly habitat across the Michoacán district. Finally, Mr. Quesada recommended these methods to expand beyond Mexico for the wider uptake in other countries in LAC and the world.

Q&A Discussion

87. Following Dr. Quesada's presentation, **Ms. Francine Lima** (Frutífera) asked what types of communication were being used to convince avocado producers to adopt these conservation practices. In reply, Dr. Quesada expressed that on the behalf of APEAM, they could not convince producers to commit to sustainable practices out of environmental considerations alone, when instead they may instead be profit-driven and export-driven. The application of a sustainable avocado certification and seal, and therefore a differentiated price and greater profit margin, may be leveraged as a communication strategy for a wider uptake of sustainable practices. As a result, consumers will consequentially choose one avocado with a sustainable certification over another without.

88. **Dr. Robert Manson** (INECOL, Mexico) enquired what the certification was called and how will it function, to which Dr. Quesada noted that the certification is simply called "Sustainable Avocado". They aim to have a certification sticker and logo on all derivative products within two years.

89. Lastly, **Mr. Mauro Reyes** (Fundación Natura, Colombia) asked whether the avocado production systems took place with monocropping or polycropping practices, and if the former, how are the practices sustainable. Dr. Quesada noted that avocados are the only crops in the APEAM agricultural zones in the Michoacán district, and forest belts are being planted between plantation areas to increase forest cover per hectare.

Breakout Room and Feedback

90. Breakout rooms were used to facilitate country-level discussions concerning the roles of businesses and the private sector to transforming sustainable change for biodiversity, as led by the Capitals Coalition. The following statement was assessed, and the subsequent questions posed:

> Statement: *"The value of nature is consistently integrated into private sector decision-making processes for agriculture and food systems. This supports agroecology and regenerative approaches where investments can flourish and benefit all, including smallholder farmers and marginalized groups."*

- What actions are required from your sector in the next three years to reach this impact (as indicated by the statement)?
- How can your sector and the business sector future collaborate in order to achieve more sustainable practices (e.g. data/information, incentives, and safeguards from the public sector)?
- How will these actions come into fruition?
- Who will need to be involved?
- What are the barriers to reach this? How would you address those?
- How would you want to see functioning a national or regional business community of practice on the valuation of business impacts and dependencies upon nature?

91. **Mr. Tomas Declerq** (Programme Officer, UNEP-TEEB), on behalf of the Colombian breakout group, highlighted that the discussions primarily centered around what actions companies and businesses needed to take through the process of becoming resilient towards ecosystem degradation. The actions suggested by the breakout room participants included the inter-agency coordination for biodiversity and agriculture at the national and international level, value addition in agriculturally-derived products with

the compliance of sustainable practices, issues of bioeconomy and traceability, and the impacts of cattle ranching specifically. Through different perspectives, the participants indicated that a greater coordination can be ensured when setting the national environmental agenda, such as the green transformation of the private sector and adopting circular economy practices.

92. **Ms. Francine Lima** (Frutífera) on behalf of the Colombian breakout group, added that the private sector should improve its engagement practices to expand their capacity for sustainable production systems. In most cases, it was noted that the producers do not comprehend their environmental impact, do not know how to measure their impact, and lack the knowledge and the capacity to do so. As such, more data and incentives must be widely embraced internally and externally to support these concerns.

93. **Ms. Monica Lopez Conlon** (UNEP-TEEB), on behalf of the Brazilian breakout group, indicated that the discussions primarily centered around cattle ranching and forests. The discussions built on the presentations from Day 2, noting that the barriers of production are not within the value chain, but instead in the markets within consumption and financial areas. As such, participants noted that it may be more effective to coordinate sustainable agricultural practices beyond the value chain, and aligned at the policy-level.

TEEBAgriFood Methods and Approaches: Scenario Modelling of Natural, Social, and Human Capital

Mexico II (EU-PI)

94. **Dr. Robert Manson** (INECOL) firstly contextualized coffee production in Mexico, noting the silvo-pastoral agricultural production systems employed and its importance for revenue generation from coffee exportation for the employees in the sector. Furthermore, there is a longstanding history of coffee production in Mexico spanning 200 years and a significant relationship with the indigenous Mexican population having adapted from agroforestry practices. Beyond the social importance, the native coffee crop is found across >90% of diversified shade in Mexico's cloud forests where 89% of Mexican forest species inhabit. Mexican coffee production systems thereby employs multi-cropping systems and bio-corridors to minimize biodiversity impacts.

95. Dr. Manson noted that the TEEBAgriFood project concerning ecosystem services in coffee production and land use change in Mexico comes at a particularly timely moment, as framed by the global COVID19 health crisis. In the absence of the Mexican Coffee Institute (INMECAFE) and international agreements, the distribution has been dominated by four large companies. The value addition to a cup of coffee returning to the producers has also fallen by 2.5-4.5%, meanwhile threats to coffee production systems intensify. These include the cascading impacts from climate change, pests, diseases, low productivity, generational change, and the conversion of plantations to other crops.

96. Four states have been selected for the TEEBAgriFood study in line with socio-economic priorities, types of coffee production systems, and their isolated value chains. Maps will be generated, and the scenario analysis will be projected into 2045 with comparison to the business-as-usual scenario. It is noted that the current sector is dominated by market forces, with a lack of environmental leadership, transactional

policies, and political continuity from the government. Two scenarios are therefore proposed: firstly, the intensification of production, and secondly, the promotion of differentiated coffees. Notably with implementation of the second scenario, the strengthening of collectives and greater competitiveness of coffee production will promote the intensification of value addition, income diversification, lower production costs, and lower climate change impacts. An additional scenario may also be proposed, considering climate change scenarios will assess how production will change in the short- and long-term.

97. Dr. Manson highlighted the use of high-quality databases to quantify human and productive capital, with integration of interviews and surveys to obtain further information on farm-wide diagnosis. Natural capital is considered central in this process, and its interactions with other capitals and flows will form a key basis in determining the production level in coffee plantations and landscape configuration. This will have consequential impacts upon ecosystem services, PES, and income generation for local livelihoods. Therefore, the selection of satellite image tiles for land use and mapping methods will be essential to measure the benefits and value addition, price, and productivity.

98. More widely, the methods outputs and the overall study will have resonance to similar and related programs across Central America and the United States, where lessons can be shared and compared. In addition, the TEEBAgriFood process will contribute to the coordination of inter-sectoral work and the potential promotion of a national law specific to coffee production. With the increasing demand for coffee in the country and globally, internal changes will be significant for the differentiated sustainable coffee consumption patterns exhibited.

Q&A Discussion

99. **Mr. Mauro Reyes** (Fundación Natura) asked what instruments have been used for the recollection of information to configure the measurements of human capital. To this, Dr. Manson remarked that this is still being determined due to the project's early stage. Presently, they have been filtering the national data from 1995-2020, and conducting preliminary analysis on the changes in capital on soils and related variables to explain and quantify the ecosystem service flows. Dr. Manson also noted that INECOL are open to the exchange of ideas at this stage.

100. **Dr. Sol Ortiz García** (Mexican Secretariat of Agriculture and Rural Development) remarked on the development and advancement of the project, and noted a concurrent project being developed concerning diversity in agricultural systems and annual cropping, specifically in coffee and bean production. She highlighted their early selection of monitoring points and expressed interest to hear about the study sites conducted by INECOL as to not replicate efforts.

101. In reply, Dr. Manson agreed to Dr. García's remarks and promised to share the shapefiles of where INECOL would be working. It was also noted that their work was hoping to establish a wider scope towards 120 farms from 12 regions, involving site visits and biodiversity assessments. An alliance with the field technicians and a survey performance could also be conducted, and this would be a valuable outcome to a potential synergy between INCEOL and the Mexican Secretariat of Agriculture and Rural Development.

Using Results Beyond Static Reports

102. The following session was led by research institutions in Brazil and Mexico and covered the application of geospatial interactive platforms in scenario modelling and the opportunities it provides for decision-making. **Ms. Carolina Passos** (MappingLab and Instituto Escolhas) began by presenting the online platform where results and information on the São Paulo study on urban and peri-urban agriculture are displayed to the public in an interactive way. They developed and designed the platform by using various software systems and databases, including MapBox and GitHub. Notably, the greatest challenge they faced was determining how to translate the complex, hard data into understandable information for the public on an open source.

103. The online platform includes qualitative and quantitative information about the methodology and the study results, not only through texts but mainly through visual means i.e. graphs, photographs, and maps where information can be explored and compared through different data layers. In addition, the platform visualizes scenarios in the territory through for example maps of social vulnerability, demographic density, urban areas, and agricultural production areas. For more information, please see here.

104. Representing Centro Geo, Mexico, **Dr. Jesús Trujillo Almeida** introduced the strategy and communication of the TEEBAgriFood Mexico coffee study which has been conducted in collaboration with Cafecol AC and CentroGeo. They established a multi directional strategy with the relevant stakeholders of the project including the committees, key players in the productive sector, decision-makers in federal agencies, technical and administrative coordinators etc. to be able to communicate data to the relevant parties. Dr. Trujillo also mentioned the use of social media platforms and White Board animations for sharing project results.

105. Dr. Trujillo introduced the Geoportal platform, intended for both internal users and the public to store and communicate results. For internal purposes, the platform will store detailed data on the layers, maps, surveys, and fieldwork, while the public platform will feature a dashboard and a Storymap with information about the study regions, scenarios, and interactive maps locating farms and visualizing historical and scenario land uses with multiple layers. The functionality of other Brazilian partners' interactive maps such as PAOT[1], CCMSS[2], Idegeo[3] and CONAFOR[4] were also mentioned.

Interactive Session: Geospatial Platforms and Communication Tools to Mainstream Results

106. **Mr. Tomas Declerq** (UNEP-TEEB) introduced the interactive session to explore the opportunities and best practices to integrate dynamic reporting and communication tools which may be used to disseminate TEEBAgriFood results.

107. The first question was around why the generation of these dynamic products is necessary. Dr. Trujillo (Centre Geo) argued that additional types of communicative tools such as the said interactive maps and online platforms are needed to be able to better transfer the message to the public. Geospatial platforms are a strong communicative tool allowing users to understand the often complex issues in a more comprehensive way, and enabling better informed decisions to be made. Ms. Passos (MappingLab Founder,

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[1] http://www.paot.org.mx/
[2] https://www.ccmss.org.mx/
[3] https://idegeo.centrogeo.org.mx/
[4] https://www.gob.mx/conafor

Instituto Escolhas) complemented by highlighting the importance of the clear and objective visualization of the graphs and maps, as it makes results more tangible and enables interactive engagement not only of researchers, experts, and decision-makers, but also of the general public.

108. The following topic of discussion concerned ways of avoiding that information only reaches academic groups, but instead a broad range of interested parties in a clear and concise language. **Dr. Gerardo Hernández** (Cafecol) emphasized the power of social media in communicating outcomes, as they represent a different user group, and also highlighted the importance of making the data available to users in the industrial and productive sectors. Dr. Robert Manson (INECOL) underlined the value of involving all the stakeholder groups throughout the process, to ensure they feel a meaningful involvement to the project outcomes. Dr. Vinicio Sosa (INECOL) on the other hand, pointed out that most producers that they collaborate with in the coffee project come from low-income groups who lack access to virtual platforms, and will as a result be excluded.

109. The final question concerned where the demand to use the geospatial platforms stems from. Ms. Passos remarked that they have added the Google Analytics service to track the number of site visits, duration, user origin etc. to be able to monitor platform usage.

110. Mr. Declerq (UNEP-TEEB) thanked the speakers for presenting the tools and technological advances as well as the participants for their engagement and reiterated that even the best data is worthless it does not resonate with decision-makers.

Final Zoom Poll

111. In response to the final day of the Latin American and Caribbean TEEBAgriFood Regional Symposium, the following final poll questions were posed to the participants:

- *What tools would you use to communicate and translate TEEBAgriFood objectives and results for a wider policy optic? (Multiple choice).*
  Of the 20 respondents, 14 people would use social media platforms (70%) to communicate results, another 14 would use audio-visual material (e.g. newspapers, videos, radio) and similarly, 14 people voted for using interactive online platforms (MapX and geospatial platforms), whilst a final four people voted for other tools such as taking advantage of (now virtual) business fairs and other channels already used by companies of all sizes to provoke interest (20%).

- *Going forward, what methods of stakeholder engagement would you implement to further progress TEEBAgriFood projects in your country? (Multiple choice).*
  Of the 20 respondents, 16 would implement virtual meetings and workshops (80%), while 15 would use focus groups and discussions (75%). 14 people believed training and capacity building events would be most useful method (70%), while 3 people voted for other methods (15%).

- *How would you respond to the statement: "I have gained a deeper understanding of the TEEBAgriFood initiative in my country and its approach to generating policy changes"?*
  The majority of the 20 respondents, i.e., 16 people agreed (80%), while 4 strongly agreed (20%) to have gained a deeper understanding of the initiative.

- *What knowledge and opportunities did you gain from participating in the Symposium? (Multiple choice).*
  Of the 20 respondents, 16 gained an increased understanding of TEEBAgriFood initiatives in other countries in the region (80%), while 12 gained an increased understanding of the TEEBAgriFood initiative in their country of focus (60%), 7 people established an introduction to stakeholders in the region that could be involved in future collaboration (35%), and finally 4 people gained an increased understanding of the UN Food Systems Summit and COVID-19 responses (20%).

- *What elements would you liked to have seen more of throughout the Symposium event? (Multiple choice).*
  Of the 20 respondents, 11 people would have liked to have seen more thematic presentations (e.g. COVID-19 TEEBAgriFood, lessons learned) (55%), while half of the group would have preferred more panel discussions (50%). 6 participants voted for more breakout group discussions (30%), and 3 would have liked to have seen more Q&A sessions (15%).

- *Overall, how would you rate the LHC symposium event?*
  Of the 20 respondents, 14 of them found it very useful and relevant (70%), whilst 6 people found it to be both useful and relevant (30%).

Final Closing Remarks

112. **Dr. Salman Hussain** (Coordinator, UNEP-TEEB) finally thanked speakers and participants for their active engagement over the past three days of the TEEBAgriFood Latin America and the Caribbean Symposia, underlining that it is the third and final of the TEEBAgriFood Regional Symposia that have been taking place over the past few months. Dr. Hussain noted the evident high level of interest, activity, and commitment from the participants, and remarked that the LAC symposium was the only event which incorporated a business component.

113. One of the primary goals of the Symposia has been to establish a TEEB community of practice which links the various county work to each other and encourages interaction and lessons learned to be shared between research institutions and relevant stakeholders. Dr. Hussain reminded participants that our efforts, despite sometimes seemingly being narrow, serve a much wider and hugely important purpose through providing sustainable livelihoods and creating beneficial biodiversity outcomes, particularly in light of the ongoing global situation.

114. Finally, Dr. Hussain thanked participants for joining the Symposia, for their commitment, passion and feedback, exclaiming that he hopes they gained valuable insights to the projects and the different approaches being implemented in other countries. The TEEB team will try to develop a platform so as to maintain the cross-country interaction going forward.

Related Links and Resources

LAC Symposium Resources
- Recordings in English, Portuguese and Spanish for all three days (YouTube): Access link.
- Agenda: Access link.
- Presentations: Access Link.

Related Links
- TEEBAgriFood Regional Symposia for Africa and Georgia Region, as well as Asia Pacific region, resources (agenda, presentations and recordings): Access Link
- COVID19, the Environment and Food Systems: Contain, Cope, and Rebuild Better Report
- The Economics of Ecosystem and Biodiversity (TEEB) Website
- UN Food Systems Summit 2021 Website

Appendices

Appendix 1: Latin America & Caribbean Regional Symposium Agenda

The Economics of Ecosystems and Biodiversity (TEEB)

TEEBAgriFood Regional Symposium Latin America and the Caribbean

Mexico Time	DAY 1 Agenda Tuesday 20th April 2021	
	HIGH-LEVEL POLICY SEGMENT	
08:00 - 08:25	**Opening and Welcome Remarks**	**Dr. Salman Hussain,** Coordinator UN-EP-TEEB **Dr. Leo Heileman,** Director and Regional Representative, UNEP Regional Office for Latin America & the Caribbean (ROLAC)
08:25 - 08:35	**TEEBAgriFood Roadmap to Impacts**	**Dr. Guillermo Castilleja,** Senior Advisor, Global Alliance for the Future of Food
08:35 - 09:30	**Panel Discussion: National Perspectives on Food Systems Transformation and Linking TEEBAgriFood Projects to Policy Priorities** This session brings together country actors from the in-country TEEBAgriFood applications, reflecting upon how the specific evidence base from the TEEBAgriFood studies may contribute to transforming policies and around the importance of making the economic case for food systems transformation. **Q&A**	**Mr. Adilson Oliveira Farias (Brazil)** Assessor Internacional, Gabinete da Secretaria de Inovação, Desenvolvimento rural e Irrigação, Ministério da Agricultura, Pecuária e Abastecimento **Ms. Lina Maria Tamayo (Colombia),** Gerente del Programa de Generación de Negocios Verdes, Ministerio de Ambiente y Desarrollo Sostenible **Dr. Sol Ortiz García (Mexico),** Directora General, Dirección General de Atención al Cambio Climático en el Sector Agropecuario Secretaría de Agricultura y Desarrollo Rural **Mr. Hernando García Martínez (Colombia),** Director General, Instituto de Investigación de Recursos Biológicos, Alexander von Humboldt Moderator: **Dr. Guillermo Castilleja,** Senior Advisor, Global Alliance for the Future of Food
09:30 - 09:35	**BREAK**	
09:35 - 09:55	**COVID19, the Environment, and Food Systems: Contain, Cope and Rebuild Better** UNEP launched a global report (**Link available here**) on COVID19 and Food Systems, and the impacts on the three intertwined crises – nature, climate, and pollution. A case study from Colombia will showcase its COVID19 considerations across eco-agri-food value chains. **Q&A**	**Mr. Mauro Reyes,** Fundación Natura Moderator: **Mr. Juan Bello,** Head, Colombia Project Office Focal Point for Ecuador and Peru Office for Latin America and the Caribbean, UNEP
09:55 - 10:20	**Interactive Session: COVID19 Responses** This this session will explore the consideration of COVID19 response strategies in mainstreaming results for policy relevance and in the application of the TEEB Theory of Change.	**Mr. Juan Bello,** Head, Colombia Project Office, Focal Point for Ecuador and Peru. Office for Latin America and the Caribbean, UNEP
10:20 - 10:30	**Closing Remarks**	**Dr. Salman Hussain,** Coordinator UNEP-TEEB

The Economics of Ecosystems and Biodiversity (TEEB)

TEEBAgriFood Regional Symposium Latin America and the Caribbean

Mexico Time	DAY 2 Agenda	Wednesday 21st April 2021
	TECHNICAL WORKSHOP ON METHODS AND APPROACHES	
08:00 - 08:10	**Opening and Welcome Remarks**	**Ms. Maria-Paula Jaramillo,** Programme Management Officer, UNEP-TEEB
	TEEBAgriFood Lessons Learned from Scenario Modeling of Natural, Social and Human Capital This session, with presentations from each of the in-country IKI and EU-PI projects, will showcase the scenario modelling methods and approaches applied to address its eco-agri-food value chain scoping.	
08:10 - 08:50	**TEEBAgriFood Methods and Approaches - Colombia Project Presentation** Q&A	**Dra. Olga Lucia Hernández Manrique,** Investigadora Titular, Gestión Territorial de la Biodiversidad Instituto de Investigación de Recursos Biológicos **Alexander von Humboldt**
08:50 - 09:45	**TEEBAgriFood Methods and Approaches – Brazil Project Presentations** Q&A	**Dr. Angelo Costa Gurgel,** Professor, Sao Paulo School of Economics, Getulio Vargas Foundation - FGV **Jay Marinus van Amstel, Vitória Leão,** TEEBAgriFood Consultants, Instituto Escolhas
09:45 - 09:55	**Break**	
09:55 - 10:20	**TEEBAgriFood Methods and Approaches – Mexico Initiative Presentation (I)** Q&A	**Dr. Alan Martín Hernández Solano,** Profesor Investigador - IBERO
10:20 - 10:30	**Conclusion and Close**	**Ms. Maria-Paula Jaramillo,** Programme Management Officer, UNEP-TEEB

The Economics of Ecosystems and Biodiversity (TEEB)

TEEBAgriFood Regional Symposium Latin America and the Caribbean

Mexico Time	DAY 3 Agenda	Thursday 22nd April 2021	
	THEMATIC SESSIONS		
8:00 - 8:05	**Welcoming Remarks**	**Ms. Monica Lopez Conlon**, Programme Management Officer, UNEP-TEEB	

Business and biodiversity

This session, led by the Capitals Coalition, will introduce and highlight the private sector applications of TEEBAgriFood projects in the Latin America and Caribbean region.

08:05 - 08:25	**TEEBAgriFood and Businesses Applications** Led by the Capitals Coalition and a dedicated presentation, with supporting presentations by CEBDS and AMEBIN on the links between the private sector and natural capital assessments. **Q&A**	**Ms. Martine van Weelden**, TEEBAgriFood Project Manager, Capitals Coalition **Mr. Daniel Sanchez y Sanchez**, Private Sector Engagement Director, Reforestamos Mexico, Mexican Alliance for Businesses and Biodiversity (AMEBIN) **Ms. Ana Gargollo**, Climate Change Manager, Pronatura Mexico A.C., Mexican Alliance for Businesses and Biodiversity (AMEBIN) **Ms. Britzia Silva Enciso**, Subdirectora de Sustentabilidad, Dirección de Sustentabilidad e Inversión Responsable, Banorte **Mr. Juan Rafael Elvira Quesada**, Consultor de la Asociación de Productores y Empacadores Exportadores de Aguacate de México (APEAM)
08:25 - 08:50	**Interactive Session: Private Sector Work** This session will explore the values of nature as integrated into private sector decision-making processes for agricultural and food systems and the wide range of beneficiaries across the value chains.	

Continued TEEBAgriFood Methods and Approaches

08:50 - 09:20	**TEEBAgriFood Methods and Approaches – Mexico Initiative Presentation (II)** **Q&A**	**Dr. Robert Manson** Investigador Nacional, Instituto de Ecología (INECOL)

Using the results beyond static reports

This session, led by research institutions in Brazil and Mexico, will showcase the geospatial applications of scenario modelling and the opportunities it provides for decision-making.

09:20 - 09:45	**Research Institution Presentations: Showcasing Spatially Explicit Scenario Modeling Results** **Q&A**	**Ms.Carolina Passos**, Urban Designer and Urban Data Specialist, MappingLab Founder, Instituto Escolhas **Mtro. Jesus Trujillo Almeida**, Profesor Investigador Tecnólogo Asociado, Servicios de Integración y Comunicación Geoespacial, Centre Geo **Dr. Gerardo Hernández Martínez**, Cafecol A.C
09:45 - 10:15	**Interactive Session: Geospatial platforms and communication tools to mainstream results** This session will explore the opportunities and best practices to integrate dynamic reporting and communication tools which may be used to disseminate TEEBAgriFood results.	
10:15 - 10:30	**Final Closing Remarks**	**Dr. Salman Hussain**, Coordinator UNEP-TEEB

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Appendix 2: Latin America & Caribbean Regional Symposium, Participants List

	Name	Affiliation	Affiliated Country
1.	371 Garzón	Professor	Colombia
2.	Abril Peña	UNEP Mexico	Mexico
3.	Adilson Farias	Ministério da Agricultura, Pecuária e Abastecimento	Brazil
4.	Adisedit Camacho Rojas	Experta Política	Colombia
5.	Adriana Ortiz	UNEP	Mexico
6.	Adriana Camelo	Instituto de Investigación en Recursos Biológicos Alexander von Humboldt	Colombia
7.	Adriana del Socorro Guerra Acosta	Docente investigadora	Colombia
8.	Alan Hernandez	Universidad Iberoamericana	Mexico
9.	Alejandra Bolde	GIZ	Mexico
10.	Alina Torres	Prolanser	Nicaragua
11.	Ana Posas	FAO	Chile
12.	Ana Gargollo	Pronatura Mexico	Mexico
13.	Angelo Gurgel	FGV	United States
14.	Antoine Libert	Programa Mexicano del Carbono	Mexico
15.	Arnaldo Carneiro	SINAPSIS	France
16.	Arnaldo Freitas De Oliveira Junior	CEFET MG	Brazil
17.	Astrid Pulido	CATIE	Colombia
18.	Atila Calvente	UFRJ	Brazil
19.	Beatriz Martins Carneiro	UNEP	Panama
20.	Britzia Silva Enciso	Banorte	Mexico
21.	Bruna Vieira de Medeiros	International Institute for Sustainability	Brazil
22.	Bruna Cenço	Instituto Escolhas	Brazil
23.	Bruno Oliveira	Meirelles Consulting	Brazil
24.	Carlos Cerdán	Universidad Veracruzana	Mexico
25.	Carlos Muñoz Piña	WRI	Mexico
26.	Carolina Passos	Mapping Lab	Brazil
27.	Catalina Rodriguez	GIZ	Colombia
28.	Cecilia Costa	Academia/Research	Brazil
29.	Cinthia Sento Sé	Muká Plataforma Agroecológica	Brazil
30.	Clara Villegas-Palacio	Universidad Nacional de Colombia	Colombia
31.	Claudia Cortes	UPRA	Colombia
32.	Claudia Quaglierini	BCS	Brazil
33.	Daniel Sánchez	Reforestamos México	Mexico
34.	Daniel Prieto Sánchez	Estudante de Doutorado	Brazil
35.	Daniela Congote	UNAL	Colombia

36.	Daniela Baena Salazar	Joven investigadora/Universidad Nacionalnal	-
37.	David Traumann	PROLANSER	United States
38.	Dolores Barrientos	PNUMA	Mexico
39.	Eduardo Quintanar	UNEP	Mexico
40.	Eduardo Tovar Lopez	CIMMYT	Mexico
41.	English Recording	N/A	N/A
42.	Enrique Segundo Serrano Cordero	Cabildo por el Agua de Cuenca	Ecuador
43.	Erick Rodriguez	FIRA	Mexico
44.	Francine Lima	Frutífera	Brazil
45.	Gabriel Diaz-Padilla	INIFAP	Mexico
46.	Gerardo Hernández	Cafecol	Mexico
47.	Guillermo Castilleja	Gordon and Betty Moore Foundation	United States
48.	Helena Alves pinto	Instituto Internacional para sustentabilidade	Brazil
49.	Hernando García	Instituto Alexander von Humboldt	Colombia
50.	Ileana Graf	GIZ	Germany
51.	Jaqueline Ferreira	Institute Escolhas	-
52.	Jasmin Hundorf	GIZ GmbH	Mexico
53.	Javier Burbano Muñoz	Contratista	Colombia
54.	Jay van Amstel	UNEP	Brazil
55.	Jeimy Garcia	IAvH	Colombia
56.	Jenn Yates	Global Alliance for the Future of Food	United States
57.	Jesus Trujillo	CentroGeo	Mexico
58.	Jorge Bedoya	Colombian Farmers Society	Colombia
59.	Jose Leiva (interpreter)	Prolanser	United States
60.	José Insfrán	Independent consultant	Paraguay
61.	Joshua Muller	Prolanser	Nicaragua
62.	Juan Bello	Senior Coordination Officer - UNEP	Colombia
63.	Juan Elvira	Consultor Ambiental	Mexico
64.	Juan Pablo Moro	MAYDS	Argentina
65.	Juanita Chaves Posada	Instituto Alexander von Humboldt	Colombia
66.	Laudemira Rabelo	Funceme	Brazil
67.	Laura Reyes Hernandez	PNUMA	Mexico
68.	Laura Antoniazzi	Agroicone	Brazil
69.	Leila Brickus	Self employed	United States
70.	Leo Heileman	UNEP	Panama
71.	Leticia Manzanera	SEMARNAT	Spain
72.	Linda Berrio	Universidad Nacional de Colombia	Colombia
73.	Luana Duarte	Ministério do Meio Ambiente	Brazil
74.	Lucas Lima	Centro Universitário FMU (São Paulo - Brasil)	Brazil

75.	Luís Barbieri	Raiar Orgânicos	Brazil
76.	Marcondes Coelho	Instituto Centro de Vida	Brazil
77.	Margarita Arteaga	Instituto Humboldt	United States
78.	Maria Bolkovic	Dirección Nacional de Bidiversidad - Ministerio de Ambiente y Desarrollo Sostenible	Argentina
79.	Maria Torres	Escuela Politécnica Nacional	Ecuador
80.	Mariana Carollo	Unica	Brazil
81.	Maribel	TEEB MEXICO	Mexico
82.	Mariel Nakane	Instituto Socioambiental	Brazil
83.	Mario Pérez	Secretaría de Agricultura y Desarrollo Rural	Mexico
84.	Marisol Velazquez-TEEB Coffee	Universidad Panamericana	Mexico
85.	Marisol Rivera	Iniciativa Climatica de Mexico	Mexico
86.	Martine van Weelden	Capitals Coalition	United Kingdom
87.	Mateo Ledesma	Cities and Resource Efficiency Specialist	Panama
88.	Mauricio Bedoya	UNEP	Colombia
89.	Mauricio Galeana	Centro Geo Investigador	Mexico
90.	Mauro Reyes	Fundación Natura	Colombia
91.	Mercedes López	Vía Orgánica AC	Mexico
92.	Mónica Gabay	Secretaría de Política Ambiental en Recursos Naturales -MAyDS	Argentina
93.	Monserrat Landaburu	Sector público	Mexico
94.	Netzahualcoyotl Mayek-Perez	Universidad México Americana del Norte/Universidad Autónoma de Tamaulipas	Mexico
95.	Olga Hernandez	Instituto de investigación de recursos biológicos Alexander von Humboldt	Colombia
96.	Olga Lucia Garcia Giraldo	Minambiente	Colombia
97.	Pablo Pérez	Universidad ANáhuac México	Mexico
98.	Pamela Rojas	CONAGUA	Mexico
99.	Paul Dale	SIMA-SP & CN-RBMA	Brazil
100.	Pedro Nogueira	IPAM - Pesquisador	Brazil
101.	Peter May	UFRRJ	United States
102.	Piedad Martin	UNEP	Spain
103.	Quetzalcoatl Orozco Ramírez	UNAM	Mexico
104.	Rafaela Silva	Instituto Escolhas	Brazil
105.	Raquel Teresa Montes Rojas	Instituto Nacional De Ecolocgía Y Cambio Climático	Mexico
106.	Regina Cavini	UNEP	Brazil
107.	Ric Fordham	University of East Anglia	United Kingdom
108.	Ricardo López	Agencia de Tierras	Colombia
109.	Richard Probst	Socio-Gerente técnico	Colombia

110.	Robert Manson	INECOL - Instituto de Ecología, A.C.	United States
111.	Ruben Reys	Empleador	Colombia
112.	Sabrina Duque ES/POR	Intérprete	United States
113.	Salvador Fernandez Rivera	Secretaría de Agricultura y Desarrollo Rural	Mexico
114.	Salvador Díaz Cárdenas	Universidad Autónoma Chapingo	Mexico
115.	Shadi Atallah	University of Illinois Urbana-Champaign	United States
116.	Simon Fonteyne	CIMMYT	Mexico
117.	Sol Ortiz	Secretaría de Agricultura y Desarrollo Rural	Colombia
118.	Sophie Avila	UNAM	Mexico
119.	Susana Alvarado Barrientos	INECOL	Mexico
120.	Tania Camacho	IICA	Colombia
121.	Veronica Eva Bunge Vivier	Directora de área	Mexico
122.	Vinicio Sosa	Investigador INECOL	Mexico
123.	Vitória Leão	Escolhas Institute (external consultant)	Mexico
124.	Waltraud Ederer	GIZ	-
125.	Weber Amaral	University of Sao Paulo	United States
126.	Yim Yu Stephanie Kong	Hong Kong Polytechnic University	Hong Kong
127.	Yolanda Kakabadse	FFLA	Ecuador

Appendix 3: Latin America & Caribbean Regional Symposium, Participants List from UNEP TEEB

#	Name
128.	Aung Lwin
129.	Edwina Matano
130.	Jacob Salcone
131.	Khushboo Ugandamal
132.	Lucy Cockerell
133.	Marcio Selva
134.	Maria Paula Jaramillo
135	Monica Lopez Conlon
136.	Naomi Young
137.	Salman Hussain
148.	Sarah Cheroben
149.	Tomas Declerq