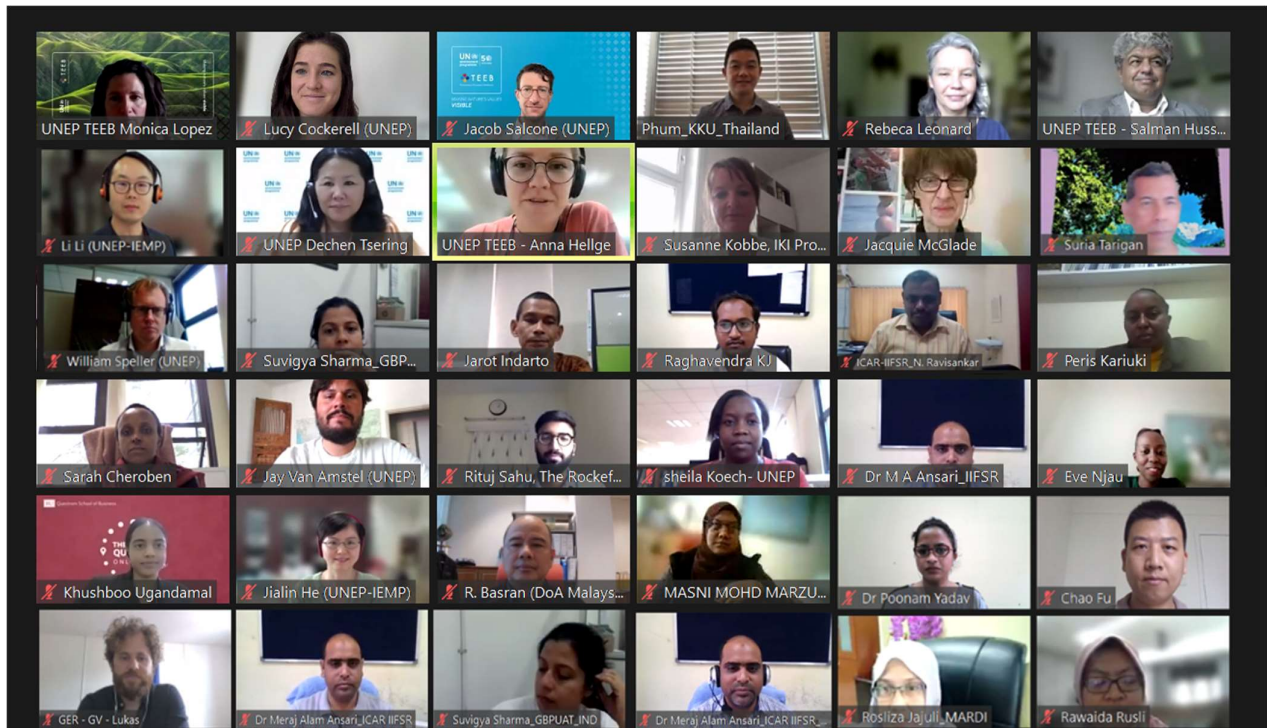


The Economics of Ecosystems and Biodiversity for Agriculture and Food (TEEBAgriFood) Africa, Asia and Europe Symposium

21-23rd June 2022, Virtual Platform



Day 1 (June 21st)

Opening and Welcome Remarks

Dr. Salman Hussain (Coordinator, UNEP-TEEB) formally welcomed participants and partners from all the regions to the TEEB for Agriculture and Food (TEEBAgriFood) Africa, Asia and Europe Regional Symposium that is a three-day virtual event that is the second in the series of TEEBAgriFood symposium to take place this year, as the Latin America and the Caribbean symposium took place earlier in June. The symposium is taking place at an important juncture when momentum is building due to the recent Food Systems Summit, and when most of the studies are starting to deliver concrete policy changes through the TEEBAgriFood applications while others are beginning to take shape. Dr. Hussain extended his thanks to the funders supporting the TEEBAgriFood initiative: the European Union; the German International Climate Initiative, NORAD (Norwegian Directorate for Development Cooperation) and SIDA (The Swedish International Development Cooperation Agency). Day 1 will primarily focus on the country studies funded by the German International Climate Initiative (IKI) program, whereas Day 2 will focus more on the studies funded by the EU Partnership Instrument (EUPI), for research teams to present results of their completed TEEBAgriFood assessments in the respective countries.

High-level Opening Remarks

Ms. Dechen Tsering (UNEP Regional Director for Asia and the Pacific) officially opened the first day of the symposium by shedding light on the need for a food systems transformation now more than ever for delivering the Sustainable Development Goals by 2030, and underlining that the true value of food is not currently reflected in production and consumption decisions. However, approaches such as “True Value Accounting” do exist that enable us to value all the impacts and dependencies across the agri-food value chain in economic terms, but they need to be scaled up. True Value Accounting not only involves an assessment of the often invisible benefits that nature and ecosystems provide, such as pollination, soil formation and freshwater, but also the invisible impacts and dependencies on our societies such as human health impacts and the erosion of community cohesion and networks that large-scale monocultures can propagate.

TEEB for Agriculture and Food is a UNEP-hosted initiative that has been applying True Value Accounting globally since 2014. Applying True Value Accounting through the TEEBAgriFood approach can help us deliver on many global, regional and national priorities that can help encourage systematic approaches that integrate environment, agriculture, food production and health into decision-making. The UN Food Systems Summit that took place in September 2021 recognized that we need to move from incremental and isolated actions towards a systems approach working towards common goals and involving multiple sectors with the interaction of scientific disciplines as well as traditional and indigenous knowledge.

UNEP has also recently joined the One Health Alliance (in March 2022), together with many other partners within the UN system including the Food and Agriculture Organization of the UN (FAO), the World Organization for Animal Health (WOAH) and the World Health Organization (WHO). One Health is an integrated approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. These holistic approaches are in full alignment with the TEEBAgriFood initiative which focuses not only on restoring the health of agroecological systems but also contributes towards improving human livelihoods, human well-being and human health

Background on TEEB and the Country Projects

Dr. Salman Hussain reiterated that The Economics of Ecosystems and Biodiversity (TEEB) was launched in 2008 with the purpose of making values visible and to recognize, demonstrate and capture those values. After a series of initial reports in 2014, the TEEB for Agriculture and Food study (TEEBAgriFood) was launched as the need to look at food systems transformation became increasingly apparent. Dr. Hussain shared that the aim of TEEBAgriFood is to “fix food metrics” by moving away from the narrow focus on yield per hectare, and towards an overarching systems approach that recognizes and values our impacts and dependencies on nature and ecosystems, and accounts for it in True Value Accounting. Dr. Hussain went on by providing an overview of how the TEEBAgriFood is being implemented and what the ramifications of the approach are as well as its linkages to other sectors and priorities.

The relevance of True Value Accounting was touched upon in the context of a UN-wide response that has been set up in response to the ongoing food, energy and finance crises as a result of the situation in Ukraine. The TEEBAgriFood projects aim to directly address policy questions and as such, evolves based on the policy landscape and also accounts for initiatives such as the One Health Plan of Action

as well as the UN Decade on Restoration which provide a wider context to the work. Dr. Hussain also pointed out the momentum has been growing in terms of progress and interest in the space of True Value Accounting. See the appendices for a link to the full PowerPoint presentation.

High-Level Panel Discussion: IKI Countries in the Regions

Dr. Salman Hussain introduced the panel speakers and invited them to talk to the importance of agricultural landscapes in the respective countries in terms of food systems, and how TEEBAgriFood work can help create a policy shift. He pardoned the absence of the high-level speaker from Tanzania in the high-level panel, noting that a technical overview of the work in Tanzania will be presented later on.

Mr. Laban Kiplagat (Chief Engineer, Director Agricultural Land & Environmental Management, Ministry of Agriculture, Livestock, Fisheries and Cooperatives, also the Chair of the TEEB-Kenya Steering Committee) began by underlining the progress made thus far in the TEEBAgriFood Kenya study focusing on the Mau River basin region, and that the interim results have been encouraging as ministries and various stakeholders have become increasingly involved in the work. As such, the data collected in the study has provided information that can help validate components of the Ecosystem Strategy Framework that the Ministry of Environment is in the process of updating. Furthermore, the project aims towards embedding agroecological approaches into the Medium-Term National Plan as well as the County Integrated Development Plan, in addition to sharing best practices, continuing to raise awareness, and upscaling to other ecosystem areas in the country. The co-chairing of the TEEBAgriFood Steering Committee by the Ministry of Agriculture and the Ministry of Environment, alongside the active stakeholder involvement in the study, has meant that social capital has been a fundamental part of the process in enabling policy uptake, which can hopefully be replicated in other studies.

Dr. Phirun Saiyasitpanich (Secretary General, Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment, Thailand) emphasized that the undertaking of the Thailand TEEBAgriFood study is an excellent opportunity for ONEP as Thailand's national focal point of CBD, and UNEP to strengthen the synergy of biodiversity and climate change and their integration into the agricultural sector. With the funding from IKI, the multidisciplinary analysis of rice ecosystems and production throughout the supply chain will contribute to the development of guidance on sustainable rice production in Thailand. Furthermore, with funding from EUPI, this year ONEP is collaborating with UNEP and Khon Kaen University (KKU) to promote sustainable agriculture through the Sustainable Rice Platform (SRP) in the North-eastern and central parts of Thailand. In continuity of the project, ONEP intends to promote transformative change in the rice sector by providing sustainable options for rice production and consumption. Dr. Saiyasitpanich emphasized that results from the TEEBAgriFood project would greatly contribute to the redesign of the national policies and plans on sustainable agriculture. **Dr. Hussain** applauded the involvement of the Secretary General in the process and noted that ONEP are recognizing that some of the results thus far stem from interchanges that they are not directly involved in, such as the Ministry of Health who are tasked with looking into air pollution issues. Efforts are therefore ongoing to facilitate an engagement to link ONEP with Treasury, i.e. the Ministry of Finance, Health and others, to share results and demonstrate the benefits of switching to organic rice production in place of conventional.

IKI TEEBAgriFood Thailand: Comparing Net Benefits of Organic and Conventional Rice Production in the North-eastern Region

Dr. Salman Hussain underlined the complexity of the TEEBAgriFood Evaluation Framework, arguing therefore that the agenda has been set up for presenters to shed light not only on the context and results of the work that has been conducted, but also on where there has been particular excellence within the studies. **Ms. Rebeca Leonard** (Programme Officer, UNEP-TEEB, Thailand) introduced the TEEBAgriFood Thailand study, by welcoming **Dr. Phumsith Mahasuweerachai** (Associate Professor, Faculty of Economics, Khon Kaen University, KKU) who has been leading the research team on the work. Dr. Mahasuweerachai shared their research results from the study on the integration of the value of ecosystems and biodiversity in rice systems in Thailand. The study focused on comparing net benefits between the different rice production practices i.e. conventional vs. organic, in terms of the following dimensions: environment, economics, people, culture and society. Dr. Mahasuweerachai focused on the environmental and people aspect of the study, in terms of GHG emissions and the health dimension linked to air pollution, PM 2.5 as well as pesticide contamination. The scenario analysis concluded that organic rice practices provide higher net benefits in comparison to conventional practices, in terms of a monetary advantages, biodiversity benefits, reduced pesticide costs, reduced health costs, reduced GHG emissions and more. The greater the area applied to organic rice production - the greater the benefits in all spheres. However, downsides exist such as a reduced farmer income in the case of no price premium addition, which can be traded off, but need to be addressed. Please find the link to Dr. Mahasuweerachai's presentation in the appendices.

Q&A Session

Q1. What might the policy implications be from the work that has been developed, and what proposals would you put forward to address the tradeoffs that has occurred?

- Dr. Mahasuweerachai noted that even though it is clear that the expansion of organic rice areas benefits society, it does not necessarily benefit the farmers in the short term. As such, the government should step in to develop incentives and assist farmers during the transformation process. There is an urgent need for a change to the market system that accounts for the positive externalities that the organic production brings to society as a whole in the long run, so that a premium price for organic produce can be introduced to benefit the farmers as well.

Q2. What results surprised you?

- Dr. Salman Hussain pointed out that one shocking result was the minimal difference in yields between conventional and organic production (1.5%), whereas the benefits stemming from organic production were colossal. Dr. Mahasuweerachai added that another surprising finding was the dramatic improvement to biodiversity (130%) in comparison to the BAU scenario, in terms of the variety of insects, occurrence of pests etc. However, accruing these monetary values into the biodiversity index is challenging, but at least it is possible to quantify the values.

IKI TEEBAgriFood Tanzania: Agriculture and Forestry Land Use Trade-Offs in the South Highlands

Mr. Jacob Salcone (Programme Officer, UNEP-TEEB) introduced **Dr. Gody Sanga** (Lecturer at Soconyo University, Researcher for Institute for Resource Assessment IRA in Dar es Salaam, Tanzania) who has been leading the TEEBAgriFood Tanzania study on the evaluation of land use changes driven by the

transition to plantation forest. Dr. Sanga shared insights into some of the highlights, as well as the approaches, empirical model and results from the study involving the economic evaluation of the impacts of land use tradeoffs to ecosystem service flows and livelihoods in the Southern Highlands of Tanzania. The Southern Highlands is a vital area for the national economy, food security, water catchment and exotic tree production, and was studied as a whole interconnected system accounting for the human-, land-use, economic- and hydrological components. Key findings included that i) water is a scarce commodity in the region and competition is expected to increase; ii) current BAU trends will lead to increased food and forest plantations meaning an increased water usage; iii) restricting agricultural and plantation land uses can preserve downstream flows and reduce turbidity, but at a cost to the local population. As such, policy makers must face the tradeoffs between upstream and downstream benefits of water use whilst they must also consider tradeoffs between agriculture production and conservation of natural ecosystems and the services they support, e.g. carbon storage, water filtration and biodiversity hotspots. Dr. Sanga went on to explain a multitude of recommendations from the findings in terms of policy changes needed and water monitoring systems in order to accrue the greatest net benefits. To access Dr. Sanga's PowerPoint presentation please find the link in the appendices.

When asked what the government representatives found most surprising or concerning in terms of the results and recommendations during the national workshop, Dr. Sanga pointed out that the government officials were primarily concerned about reducing the costs that burden the farmers in their transition towards sustainable agriculture – i.e. how to generate improved livelihoods with the same amount or lessened usage of water. For this purpose, markets need to be reorganized and improved to account for the sustainable agricultural products, while price premiums also need to be introduced to incentivize farmers to adopt sustainable land use practices.

IKI TEEBAgriFood Kenya: Values of the Mau Forest Watershed

Ms. Monica Lopez (Programme Officer, UNEP-TEEB) explained that the TEEBAgriFood Kenya project comprised two different research institutes and governance structures with the involvement of the community members, the county, and the national government. Collaboration took place with the National Museums of Kenya as they are the focal point for the CBD Biodiversity form Kenya, as well as ProCol which is the Prosperity Co-Laboratory based at University College London and in Kenya at the British Institute of Eastern Africa (BIEA). Ms. Lopez introduced **Professor Jacqueline McGlade** (ProCol Kenya, professor at Strathmore University and University College London Institute for Global Prosperity) to share insights from the project focusing on agri-food systems in the Mau Forest complex, especially from a social capital aspect. Dr. McGlade spoke to the importance of community awareness, engagement and empowerment, which was realized in the TEEBAgriFood Kenya project as the scenarios were co-designed by the communities, making them both richer and more sustainable. A social capital framework was therefore developed for the study that picked up the mechanisms of social interaction of cohesiveness, aiming to change people's perceptions of the importance of the Mau Forest complex.

Dr. McGlade noted the complexity of the Theory of Change due to the multiple layers of hierarchy that were fed in stemming from the various stakeholders and their networks including tribal groups, local authorities, and members from various water resource and conservation groups. The study was designed through citizen-led research and community surveys to understand and analyze the

priorities, the main issues and what is being and what should be valued, in order to develop the future scenarios. Through this process, it was possible to identify social relationships and norms to determine what the communities in the region would like to achieve. The project concluded that the carbon farming scenario involving tree plantation and soil improvement through regenerative agricultural practices would be the scenario deriving most benefits in terms of restoring surface rivers, restoring forests, securing carbon, generating overall income as well as additional income to the farmers and the entrance to the voluntary carbon market. As a result of the “Mau-Mara Natural Capital Communities” presenting the proposition to communities, counties and even the government, there was an agreement to join a voluntary carbon market that is scalable, transparent, fair and holistic. As such, a Natural Capital Investment Pilot was developed with tree nurseries, collaboration with schools etc. and as a result, the Mau-Mara Natural Capital Company Limited has been created and has already managed to secure projects where Payments for Carbon go directly to the women planting trees. For further details, please see Ms. Jacqueline McGlade’s PowerPoint presentation through the link in the appendices

Q&A Session

Q1. As the Council of Governors pointed out that it is not possible to prioritize one county over another, how is it possible to make the approach scalable?

- Ms. McGlade pointed out that due to COVID, many people moved back to rural areas which reawakened an understanding of where they came from, and people have become more attached to the land. As such, there is a unique opportunity for local leaders and communities to work with the counties to determine the most important commodities and iconic parts of their counties. Ms. McGlade argued on the other hand that the methodology that was developed is completely scalable to many policy contexts.

Q2. Have any common challenges been identified in the four focus countries when it comes to communicating/applying the TEBB approach?

- Ms. McGlade said that connecting to government and ensuring that the policy processes are fully recognized and embedded are keys to success – and that therefore the challenge is to find the right entry point. In the case of Kenya, the counties surrounding the Mao were both engaged and positive with regular contact with the national government which was very fortunate. Dr. Hussain added that current governance structures are not set up to efficiently be able to apply a food systems approach, as some aspects require the involvement of the Ministry of Health and others require the involvement of the Ministry of Finance and thus the arrangement of bringing the relevant players together becomes challenging. However, as a consequence of the Food Systems Summit and the national dialogues, a new acceptance has been formed making it easier to bring stakeholders together and thus deliver impacts.

Q3. How can the TEBB approach best link up to the One Health approach in the future?

- Ms. McGlade explained that in terms of Kenya, there are three One Health projects ongoing in the area currently, which has meant that there has been much overlap and collaboration with the One Health team throughout all of the studies. Dr. Hussain added that TEBB will be leading a substantial study on One Health, thus emphasizing strong linkages now and in the future, and also pointed out that much focus in the projects thus far has been directed towards the health implications and links to economic returns.

Closing Remarks of Day 1

To close the first day of the TEEBAgriFood Africa, Asia and Europe Regional Symposium, **Dr. Salman Hussain** thanked presenters, panellists and colleagues for their speeches and participation, outlining that Day 2 will include additional high-level interventions from some of the EUPI countries as well as representatives from the EU Delegation. This will be followed by presentations on country work which will be linked to certain thematic topics that have arisen across the TEEBAgriFood studies, showcasing the multiple ways in which policy change can be attained. In this way lessons learned will be shared which will hopefully provide enlightening and inspiring insights to the different country teams present.

Zoom Poll Overview

In response to the first day of the Africa, Asia and Europe TEEBAgriFood Regional Symposium, the following questions were posed to the participants:

- *When did you first hear about the TEEBAgriFood Initiative?*
Of the 28 respondents, 10 had heard about the initiative very recently (36%), 8 respondents had heard of it 3-5 years ago (29%), 6 had heard about it last year (21%), 2 had heard about it last year (21%) and finally 2 had heard about the initiative 5+ years ago (7%).
- *What type of institution do you belong to?*
Of the 28 respondents, 16 belonged to government (57%), 5 were from research institution/academia (18%), 2 were from the private sector (7%), while 1 was from civil society and 4 people were from other institutions such as international organizations and intergovernmental organizations (14%).
- *Which part of the value chain are you most involved with?*
Of the 28 participants who answered, 18 of them were most involved with agricultural production (64%), 10 were most involved with academia and research (36%), 2 were involved with manufacturing and processing (7%), 1 with household consumption (4%), and finally 1 with distribution, marketing and retail (4%).
- *Did you take part in any national or international activities related to the UN Food Systems Summit in 2021?*
Of the 28 participants, 12 of them participated in national and regional dialogues (43%), while 6 engaged in independent discussions and actions (21%), 4 were involved in national pathway follow ups (14%), and 2 were involved in the pre-summit and summit meetings (7%). The 7 remaining people (25%) were either not involved at all or were involved in research or other relevant events.

Day 2 (June 22nd)

Welcome and Recap of Day 1

Dr. Salman Hussain (Coordinator, UNEP-TEEB) welcomed participants to the second day of the TEEBAgriFood Africa, Asia and Europe Regional Symposium, mentioning the option to access Chinese interpretation if so needed. Dr. Hussain summarized of the previous day, reiterating the importance

of sustainable food systems, the influence of valuation on policy making, and the meaning behind the TEEB approach. The urgency to be nature positive in agricultural production was underscored from various speakers throughout the first day, and it was made clear that evidence generated from the TEEBAgriFood studies either is, or will be, adopted in policy making.

Dr. Hussain went on to summarize that Day 2 will include high-level speakers from the partner countries supported by the Partnership Instrument of the European Union (EUPI), i.e. China, India, Indonesia and Malaysia, alongside as a representative from the EU Delegation to China. Thereafter, research teams will present interim progress from their ongoing work which will be finalized in December 2023.

High-Level Panel Remarks and Discussion

Dr. Hussain introduced the high-level panellists from the EUPI countries, inviting them to talk to the opportunities and challenges of food systems transformation in their respective countries, highlighting the perspectives of their governments on the potential benefits of investing in sustainability in agriculture and food production.

Dr. Li Jun-Sheng (PSC Chair, Director of Institute of Ecology, Chinese Research Academy of Environmental Sciences, Ministry of Ecology and Environment, China) noted the valuable opportunity that this symposium provides in terms of exchanging experiences and lessons learned between governments, the scientific community as well as international organizations in the transition to agri-food systems for biodiversity conservation and ecosystem restoration to address biodiversity loss, ecosystem degradation, climate change and other pressing challenges. China is actively implementing a comprehensive environmental agenda for ecological protection and restoration which is already seeing steadily improving results in tackling desertification, soil erosion, forest cover loss and other challenges. Ecological circular agriculture and the certification of organic products are areas that are also being strengthened in order to improve the quality of arable land and the quality and safety of agricultural products. Poverty alleviation and livelihood improvements in the areas have also been a consequence of these ecological protection and restoration projects.

Dr. Jun-Sheng shed light on the consequences stemming from intensified agri-food systems in the nation over the past decades, noting that a comprehensive consideration of the hidden costs and benefits of agri-food system practices and the recognition of its values at all levels of decision-making, will help promote a more nature-friendly system. As such, the TEEBAgriFood study that has been ongoing in China since 2019, has focused on the agri-food system in Tengchong City, Yunnan Province, a national “green is gold” practice innovation base in South-Western China, exploring the impact of the food system on natural, produced, human and social capitals in the region under different development scenarios within the TEEBAgriFood Evaluation Framework. The study has investigated the effective transformation of green to gold, to achieve high quality regional and community development. Finally, Dr. Jun-Sheng concluded that as China enters a new era of improved livelihoods, it is imperative to work together to develop and promote a sustainable agricultural system that allows for a nutritious and balanced diet, while also safeguarding our ecological environment. In addition, Dr. Hussain talked to China’s successful implementation of SEEA, the System of Environmental Economic

Accounting, which in the same way as the TEEBAgriFood study, was able to create new linkages between various agencies and ministries to create positive environmental impact.

Ms. Chhavi Jha (Joint Secretary, RKVY, PC & NRM, Ministry of Agriculture and Farmers Welfare, India) argued that the TEEB work being conducted in India is central to sustainable agriculture and thus of great relevance to the nation. The work is focusing on organic farming and agroforestry in the states of Uttar Pradesh and Uttarakhand which are known as the breadbasket of India. Ms. Jha expressed her hopefulness in that the study results will produce evidence and inputs to underline the importance of moving towards sustainable agriculture in India. Dr. Hussain added that if the studies were to produce results that would encourage both states to adopt organic and agroforestry practices to some extent, it would be a huge success, especially considering the population density in the areas who would be affected by the shift. Due to the fruitful interaction between the Ministry of Agriculture & Farmers Welfare and the Ministry of Environment, the project has gained prominence at the state level and is already starting to show some initial results of the many benefits stemming from organic food production and agroforestry.

Mr. Jarot Indarto (Senior Planner, Agriculture Directorate, Ministry of National Development Planning, BAPPENAS, Republic of Indonesia) emphasized the importance and the scale of Indonesia's food sector, noting the commitments that Indonesia has made towards a food systems transformation to reach the goals of the 2030 Agenda. Under the national constitution, the food sector is mandated to provide food and nutrition for all, and as such, there is a need to transform the system into a more nutritious, inclusive, equitable, sustainable and resilient system. Nature-positive food systems not only benefit the environment, but also has the potential to improve livelihoods. The promotion across sectors and different governmental levels is vital, as the narrative touches not only upon the food and agriculture sector, but also health, social protection programs as well as climate change. Implementing nature positive food systems through a systematic and holistic approach can help Indonesia deliver on many global and national priorities, which is also an agenda that BAPPENAS is committed to. Mr. Indarto explained that the Ministry of National Development Planning alongside the Food and Agriculture Directorate are facilitating multi-stakeholder platforms on this narrative, as well as working with a science policy team at the science policy interface to underpin decisions through credible science. In this context, the hope is that the True Value of Food process in Indonesia can equip actors at both the national and local level with evidence-based results to implement policy change.

The previously conducted interim report that was conducted by the UNEP-TEEB Office successfully contributed to the inclusion of agroforestry in Indonesia's Medium-Term Development Plan which has ensured that relevant resources can be allocated to the agroforestry sector from several ministries. As such, the TEEBAgriFood analyses have provided evidence that a more sustainable food system can benefit not only the environment, but also livelihoods. Mr. Indarto concluded by emphasizing the importance of translating the TEEBAgriFood Evaluation Framework so that local governments and rural communities can understand and themselves implement the approach in the field to benefit smallholders and society as a whole. Finally Dr. Hussain extended his thanks for the support from IPD Bogor as they hold the chairmanship of the G20, under which UNEP is in the process of submitting the "T20 paper" to the G20 Ministers which is a policy paper talking to why True Value Accounting ought to be mainstreamed at national level as well as across the private sector.

Mr. Yee Chen Hua (Senior Principal Assistant Secretary, Policy and Strategic Planning Division, Ministry of Agriculture and Food Industries, Malaysia) shared that Malaysia has identified five key challenges in their agrofood sector over the coming 10 years, and has based on these, committed to overcome these issues through the newly drafted National Agrofood Policy 2021-2030 in line with the 2030 Agenda and other national policies. Among other things, this policy emphasizes the adoption of strengthened food value chains that directly contribute to the sustainability of the food system. The Malaysia agrofood industry aspires to be robust, agile, in line with global economic growth and globalization, following a climate smart agriculture approach. Mr. Hua outlined the various strategies supporting the sustainable agricultural agenda, underlining that in order to meet increasing food demand in the coming decades while improving livelihoods, it is apparent that the agriculture sector needs to move towards more sustainable and holistic food production methods.

Mr. Sébastien Paquot (Head of Section and Counsellor for Climate Action and Environment, EU Delegation to China) began by thanking the speakers for shedding light on some very concrete examples of the project benefits. Mr. Paquot spoke to the general policy area that the EU Delegation to China is working on, underlining the urgency of the situation and its detrimental impacts not only on the environment and food systems, but also on deriving fair economic returns across all sectors, food security, public health and further aspects. On top of this urgency, the pandemic and the situation in Ukraine has compromised aspirations and increased the risk to global food safety and resilience of food systems, which only increases the need to act without delay. An integrated approach is needed to transform the safety, security and sustainability of the food systems which includes both short- and long-term interventions. As such, sectors with the most impact need to adopt all around solutions, which should be seen as an opportunity for all actors in the food value chain.

Mr. Paquot went on to point out that the lack of awareness of the dependency of agriculture on ecosystems and biodiversity has profound negative consequences and allows us to take uninformed decisions. This is why capturing and incorporating biodiversity values into national accounting and reporting systems has the potential to change the way in which agrifood business policy making and consumption patterns function. This is evidently taking place through the application of the TEEBAgriFood studies in the respective countries, which is ultimately leading to better informed decision making for a sustainable food sector that benefits all. As a consequence therefore, the EU is glad to finance this project, Mr. Paquot emphasized, as it aims to work with all the selected countries to take joint action towards halting environmental degradation globally and make commitments on reducing biodiversity loss. The project is also fully in line with the European Green Deal and its key strategies and sets out to promote economically, environmentally and socially sustainable developments, while addressing the planetary crisis and climate change. The EU Delegation to China therefore looks forward to continuing to collaborate with partners to address the challenges at stake while promoting the implementation of ambitious environment, agriculture, climate and biodiversity policies. Dr. Hussain finally added that many EU priorities resonate directly with UNEPs mandate such as the Farm to Fork strategy, which has grown in scope and significance through the Food Systems Summit. It was also noted that despite the inclusion of Brazil and Mexico in the project, they were covered in the previous TEEBAgriFood Regional Symposium on Latin America and the Caribbean (see the TEEB website for further details on this).

Thematic Session 1: What is the Potential Role of Agroforestry in Food Systems Transformations?

Ms. Monica Lopez (Programme Officer, UNEP-TEEB) introduced the thematic session focusing on the potential role of agroforestry in food systems, for a food systems transformation, in the TEEB country studies taking place in India and Indonesia.

Prof. Dr. Nunung Nuryartono (Dean, Faculty of Economics and Management, IPB University, Bogor, Indonesia) presented insights into the work that has been conducted on the promotion of biodiversity and sustainability in the agriculture and food sector through economic evaluation in the South Sulawesi province of Indonesia. An intensive field survey was conducted during the study alongside secondary data analysis on cocoa agroforestry in Indonesia, looking into the natural, manufactured and social capital aspects of cacao agroforestry in comparison to monoculture production. Dr. Nuryartono outlined the analytical assessment and methods, the scenario development, land use models, biophysical models, human capital analysis and the supply chain analysis. Results have thus far shown that cacao agroforestry increases yields as well as ground water availability due to the improvement of environmental services. Agroforestry potentially improves macroeconomic condition in the long run by 2040 and is also expected to contribute to economic expansion and generating exchange reserves. Furthermore, agroforestry could improve sectoral performance both in upstream and downstream sectors, generates more employment and improves household resilience as incomes rise. Please see the appendices to find Dr. Nuryartono's PowerPoint presentation.

Dr. Ravisankar (Principal Investigator for the TEEBAgriFood project in Uttar Pradesh, India) shared insights into agricultural systems in India, pointing out that as organic farming has become a higher priority within the government, schemes have been developed to rapidly increase organic farming in recent years. Uttar Pradesh has been selected as the focus area of the TEEBAgriFood study, which is a very populous state that plays a significant role in terms of food production for India. Dr. Ravisankar provided an overview of the objectives of the newly initiated study, explaining that the impact of organic farming on ecosystem services, produced capital, as well as livelihoods and health, will be investigated, to generate policy, institutional and governance solutions. The format for the primary data collection from the households has been developed and will take place through participatory development with stakeholders including farmers, policy makers and developmental agencies. In addition, the scenarios analyzing agroforestry and organic farming will be developed through the use of tools such as InVest, CROPWAT and GIS. In aiming towards achieving sustainable food systems, the study will add another angle to the project by addressing four aspects: increases in incomes; reductions in expenditure; increases in employment; and reductions in risk.

Policy makers are currently apprehensive to promoting organic farming, as the common understanding is that organic methods result in reduced yields. However, results already indicate that the yield ratio of many of the crops grown in the state can be improved through organic practices in place of conventional practices, as well as generating multiple other benefits to ecosystem services, farmer incomes and more. For further details, see Dr. Ravisankar's presentation through the link in the appendices.

Q&A Session

Q1. What are the key constraints to transition to organic practices from the farmer perspective?

- With respect to organic farming, the key constraints for farmers are the input availability as well as the marketing channels, while for agroforestry there is a need for policy interventions as tree cutting is not allowed for agroforestry purposes. These challenges will all be considered in the scenario development Dr. Ravisankar assured.

Q2. How will this work on agroforestry intersect with other schemes in India such as Zero Budget Natural Farming (ZBNF) that are working towards the promotion of organic agriculture?

- Dr. Ravisankar explained that all the practices involved in the ZBNF approach also fit into the agroforestry systems, and as such, these methods can be combined to enhance the profitability for the farmers. Mr. William Speller added that there was a lot of discussion on this topic among stakeholders and the Project Steering Committee during the inception phase. There was a steer to focus on a broad definition of organic, focusing on specific farming and land management practices, rather than focusing on any one initiative or overall approach. This paper contains useful context: <http://teebweb.org/wp-content/uploads/2022/03/Report-of-Inception-Workshop-July-2020.pdf>

Q3. Is the impact of different systems on farmer health also measured through the TEEBAgriFood study?

- Dr. Ravisankar confirmed, explaining that the research team is also collaborating with other departments to study the impacts of organic farming practices on both the health of humans and livestock.

Q4. How can you quantify the benefits of agroforestry on the crop yield?

- Dr. Ravisankar pointed out that due to the fact that there are many monocropping systems and also many agroforestry systems growing the same type of crops, it is possible to quantify difference in yields as well as differences in ecosystem service provisioning. Dr. Nuryartono also added that it is feasible to calculate the best combination between agroforestry cropping systems growing with cacao, as there are many agroforestry systems with different crop combinations in the region.

Q5. How can the unrecognized costs or benefits to the community, region, or world be integrated in our analysis of agroforestry systems?

- Dr. Nuryartono underlined the importance of increasing the awareness among both producers and consumers of the long-term benefits and additional ecosystem services that are provided by agroforestry systems, noting that it is a very challenging task.

Q6. Do the studies also cover carbon sequestration as one of the ecosystem services in focus?

- Dr. Nuryartono elaborated that carbon sequestration is not directly measured in the TEEBAgriFood Indonesia study, but it is on the other hand possible to measure the farmers carbon footprint. Mr. Suria Tarigan, researcher from IPB University added that they measure carbon sequestration, and that a plot observation was conducted on tree intercropping with cacao which was able to calculate the additional carbon that was generated by the trees. Dr. Ravisankar

explained that for the India study, carbon sequestration is already estimated in all their systems over different years and will thus be integrated into the study.

Thematic Session 2: Can Labelling and Certification Make an Impact?

Mr. Jacob Salcone (Programme Officer, UNEP-TEEB) moved on to introduce the following session, underscoring that once evidence of the true values and costs of nature has been generated, one way to create awareness and to differentiate organic or sustainable products or practices, is through certification or labelling. Thereafter, the speakers from India, Indonesia and Malaysia were invited to talk to identifying and demonstrating the true value of different products and practices, and ways to identify them so that the true value and costs are reflected in the market.

Dr. A. K. Sharma (G.B. Pant University of Agriculture and Technology, India) provided an overview of the TEEBAgriFood project looking into informing policy about the impact of organic farming and agroforestry in the state of Uttarakhand, while supporting spatial planning of agricultural production to maximize ecosystem services. The study also aims to inform sustainable food production policy intervention such as policies related to pollution, pesticide and fertilizer use, sustainable value chains, market linkages and certifications. Dr. Sharma compared the different types of organic labelling certifications that exist in India; the National Programme for Organic Production (NPOP), the Food Safety & Standards (Organic Foods) Regulation, 2017; and the Participatory Guarantee System for India (PGS-India), and finally presented challenges from a farmer vs. a consumer perspective. Please see Dr. Sharma's presentation through the link in the appendices for further information.

Dr. Hairazi Bin Rahim (Socio-Economic Research, Market Intelligence and Agribusiness Centre, Malaysian Agricultural Research and Development Institute, MARDI, Malaysia) continued by shedding some light on a similar aspect to the previous intervention, but on the impact of the Malaysian Good Agricultural Practices (MyGAP) certification scheme among farmers in the Cameron Highlands, Malaysia. An overview was presented of the Cameron Highlands area which is known for its extensive vegetable production and also for its challenges linked to deforestation, forest clearance and natural resource degradation due to development and unsustainable agricultural and economic activities which require urgent policy changes. Thereafter the problem statement and justification was defined, explaining the need for the MyGAP certification and its potential to significantly improve the quality of the environment. The study will aim to measure and evaluate the costs and benefits of agricultural activities in the region, assessing the impact of MyGAP certification on future ecosystems and agrobiodiversity in the Cameron Highlands through different scenarios. Thereafter policies and programs will be identified and proposed for the enhancement of MyGAP certification to support agricultural sustainability in the region. Please see the appendices for further details on Dr. Hairazi Bin Rahim's presentation.

Assoc. Prof. Dr. Phumsith Mahasuweerachai (Faculty of Economics, Khon Kaen University, KCU, Thailand) presented the plan of the TEEBAgriFood study taking place in Northeastern and Central Thailand, evaluating the net benefits of the expansion of the sustainable rice practices in various dimensions. More specifically, it examines the overall impacts of the Sustainable Rice Platform (SRP) standard for sustainable rice cultivation in terms of impact on all capitals while also looking into health and livelihood aspects. The policy questions that the TEEBAgriFood Thailand study aims to answer are

the following: what would the systemic impacts of a change or reorientation of agricultural subsidies be towards direct support of nature-positive production methods in the rice sector; and how do small holders benefit from the adoption of practices promoted by SRP/GAP++? How do other stakeholders benefit? Where could incentives be most equitably directed to encourage good practices? Once the scenarios have been developed, estimates will be conducted on the impacts of land use change between conventional rice plantation practices in comparison with organic practices looking at water, nutrient, pest, rice-straw and diversification management. To see Dr. Mahasuweerachai's PowerPoint presentation, please follow the link in the appendices.

Thematic Session 3: Applying TEEBAgriFood in Multi-Functional Landscapes

Mr. William Speller (Programme Management Officer, UNEP-TEEB) introduced the session on multifunctional landscapes, introducing **Dr. Li Li** (Researcher, UNEP-International Ecosystem Management Programme, UNEP-IEMP) to talk to the TEEBAgriFood study taking place in Tengchong City, Yunnan Province, China. UNEP-IEMP is housed by the Chinese Research Academy of Environmental Sciences and supported by the Chinese Government and through this study supports the Ministry of Ecology and Environment. Dr. Li presented some background context on the Chinese agricultural sector, noting the primary goal to realize the “Green is Gold” ideology which is characterized by harmony between economy and environment and a balance between development and biodiversity conservation. Tengchong is also one of the Green is Gold practice innovation bases working to pilot and explore was selected due to various reasons, in particular because its agricultural system is representative of regional aspects, and the city is also planning to promote the integrated development of all sectors of agriculture industries to facilitate the modern transition of its production chain, and merge ecological tourism and cultural aspects into the agricultural landscape. Tengchong is also renowned for developing an ecological economy and promoting green development based on ecological resources. The project aims to assess important externalities of agri-food systems in Tengchong using scenario analysis, to extract and internalize previously unaccounted for externalities to make nature's values visible to support biodiversity friendly land use management in agricultural landscapes and therein contribute to biodiversity conservation and ecosystem restoration.

All the scenarios were explained in detail alongside the driving forces behind them. Dr. Li also underlined that there has been ongoing collaboration with the local authorities in order to facilitate a better exchange between the team and the stakeholders. Looking forward, the TEEBAgriFood China study aims to demonstrate the multiple benefits of more sustainable agricultural practices in the region as well as demonstrating a systems thinking approach in line with domestic policies, to raise awareness among policy makers, and to share knowledge, lessons learned and project merits to an international audience. To see more details, please find Dr. Li Li's presentation accessible through the link in the appendices.

Mr. Speller praised the UNEP-IEMP team and others for rigorously being able to capture so many aspects of the TEEBAgriFood Framework, and for using a relatively local scope to inform regional, national and international policy makings.

Q&A Session

Q1. What challenges do you foresee in the adoption of TEEB findings in China, and how do you hope to circumvent them?

- Dr. Li acknowledged the challenge of transferring results into a narrative that is substantial enough for policy makers to understand the opportunities at stake. To tackle this challenge, the research team has since the project inception been gathering insights from authorities and practitioners at the local, provincial and national level in order to create awareness of the project and the significance of its outcomes.

Q2. How does the project aim to capture GHG emissions from livestock and offset the same using the IPCC method?

- Mr. Speller noted the previous successful exchange between the research partners in the TEEBAgriFood China study with the Uttarakhand study, suggesting that TEEB facilitates an exchange between the TEEBAgriFood China team and the other teams seeking further details on this in order to share lessons learned.

Closing Remarks

Dr. Salman Hussain (Coordinator, UNEP-TEEB) thanked the presenters, participants and funders for their insights and partaking throughout the day. Dr. Hussain underscored that throughout the course of the day, a coherent way of applying the TEEBAgriFood Framework has been clearly visible in the presentations with a strong narrative on how to capture the positive benefits of nature and to push for policy change to strengthen the case of biodiversity conservation. Dr. Hussain briefly outlined the agenda for the final day of the symposium and closed the session for the day.

Zoom Poll Overview

- *What do you perceive as the main threat to biodiversity and ecosystems in your country?*
Of the 33 participants, 19% (5 people) voted equally for pollution (air, land, and water), habitat encroachment, anthropogenic climate change, unsustainable consumption patterns, while 4 people believed that soil erosion and land degradation was the main threat, and 3 people saw financial incentives/market systems as the biggest threat. Participants also commented that land conversion and agricultural land expansion, in addition to climate change, massive food consumption, overexploitation and climate change were the biggest threats.
- *What do you perceive as the main threat to food security in your country?*
Of the 33 participants, the majority (70%) of people i.e. 19 voted for ecosystem degradation, while 4 (15%) voted for financial incentives/market systems, 3 (11%) voted for production practices and 1 voted for manufacturing (4%). Participants also commented that land governance and poor agricultural practices leading to degradation is a big threat to food security, while the lack of policies to support farmers in improving production is also a big issue.

Day 3 (June 23rd)

Welcome and Recap of Day 2

Dr. Salman Hussain (Coordinator, UNEP-TEEB) welcomed participants to the final day of the TEEBAgriFood Africa, Asia and Europe Regional Symposium, briefly summarizing the previous days and explaining that this final day will cover targeted applications in Georgia and Uganda, a communications session on how to develop elevator pitches for the findings, links to other agendas such as One Health and the UN Decade on Restoration, as well as a significant component of the work which looks at the link between the public and private sector. Dr. Hussain reiterated that over the course of the previous days, the impact stemming from the TEEB applications is clearly visible from an environmental, social, economic and health perspective, and is influencing policy.

TEEBAgriFood: Targeted Applications

Mr. William Speller (Programme Management Officer, UNEP-TEEB) introduced the session on the TEEBAgriFood “lite” studies, pointing out that an incredible amount of progress was made in the Uganda study in particular, over a short amount of time with relatively scarce resources. The Uganda study underwent a full stakeholder consultation with workshops taking place as well as bilateral discussions with Ministries including the Ministry of Water and Environment and the National Environment Management Authority, resulting in the decision to conduct a TEEBAgriFood study on the Mabamba Bay wetland area. Mr. Speller provided some context on the Uganda study and passed the floor to **Ms. Lucy Iyango** who is the Assistant Commissioner at the Ministry of Water and Environment of Uganda, to provide insights on the study as well as more generally the priorities for wetland conservation and restoration linked to agriculture and food systems in Uganda.

Ms. Iyango highlighted the importance of the TEEBAgriFood study due to the ministerial involvement, and the opportunity for the findings to build on/influence relevant policies and legal institutional frameworks. Furthermore, the possibility for the project to build on the National Development Plan as well as the Vision 2040 which informs all government priorities was brought up, as it brings in additional stakeholders and ensures an integrated approach to interventions. Ms. Iyango also pointed out that the study findings may help to work towards the key outcomes of the Green Growth Strategy emphasizing the need for natural capital and assets to deliver their full economic potential while catalysing economic green growth through the recognition and inclusion of all capitals, generating more green jobs, lowering emissions, increasing economic opportunities, improving sustainable biodiversity and social inclusiveness, and much more. The goal now is to ensure that the findings are translated into actionable areas and integrated into policy and decision-making processes in line with key governmental priorities for the program (such as restoration) and also building upon previous natural capital-based projects.

Finally, Ms. Iyango noted that the valuation of the economics of natural resources has been key to ensuring funding for the sector and as such, government has an opportunity to provide funding and

contribute to the programs put in place by the development partners in order to integrate the findings from the TEEBAgriFood study.

Mr. Jacob Salcone (Programme Officer, UNEP-TEEB) apologized on behalf of the Georgian Ministry of Environment and Red Caucasus who are leading the Georgia study who were unable to join the session. In their absence therefore, Mr. Salcone explained that the TEEBAgriFood Georgia project has a unique implementation methodology of adding an economic valuation component to a large GEF (Global Environment Fund) project, to better understand the costs and benefits of specific interventions and the possibility of influencing the decisions of policymakers. The study focuses on supporting sustainable land management due to concerns about land degradation and erosion and as a result, decreased agricultural productivity. As such, Mr. Salcone underlined that the goal is to measure the economic cost of the land degradation, measure the benefits of interventions that would prevent the environmental degradation, so as to highlight the values of ecosystem services that are lost through the land degradation.

Private Sector Engagement – Pilot Applications of TEEBAgriFood

Ms. Monica Lopez (Programme Officer, UNEP-TEEB) pointed out the importance of achieving results not only through the public sector, but also through the work of the private sector. Work has therefore been ongoing with the Capitals Coalition in order to engage the private sector in the partner countries. This session will be a discussion from private sector groups who aim towards food systems transformation by applying the TEEBAgriFood approach. Ms. Lopez introduced the speakers and underlined their importance in involving the private sector in the respective countries to motivate and incentivize the capitals of the TEEBAgriFood Framework.

Ms. Lisa Heine (Engagement Officer, TEEBAgriFood for Business team, Capitals Coalition) works with private sector actors to support the implementation of TEEBAgriFood for Business guidelines, working on building and maintaining partnerships across the countries. Ms. Heine provided an overview of the TEEBAgriFood for Business project, noting that UNEP-TEEB runs the public sector component of the initiative, while the Capitals Coalition supports that work by engaging with the private sector engagement aiming to build resilience, mainstream best practices, protect biodiversity and contribute to a more sustainable agriculture and food system in the EU partner countries. The Capitals Coalition has developed the [TEEB Operational Guidelines for Business](#) which are based on the natural capital protocol and provide a replicable framework for businesses to implement so they can understand their impacts and dependencies on the capitals, and act upon them. They have also been organizing roundtables and trainings to business representatives, based on the operational guidelines. Through the training sessions, they have been able to support pilot applications, to show the evidence of the work conducted. Please find Ms. Heine's PowerPoint presentation by following the link in the appendices.

Mr. Bryan Citrasena (Project Manager, Indonesian Business Council for Sustainable Development, IBCSD) explained that IBCSD is a CEO-led association of Indonesian companies committed to supporting sustainable development via economic growth, environmental balance, and social advancement working with 44 business members across 17 sectors. In this context, IBCSD works to implement the capitals and support the business in Indonesia through the implementation of the

TEEBAgriFood Training Program for Business. The vast size of the agricultural sector was highlighted in terms of employment in the nation, and the implementation of the Capitals Approach was briefly presented also outlining the drivers that incentivize the agri-food businesses in Indonesia to engage in sustainable initiatives, which to a large extent depends on the level of awareness from the businesses themselves. For further details, please find Mr. Citrasena's presentation available through the link in the appendices.

Ms. Yang Shihui (Lead of Biodiversity Business of GoldenBee, Facilitator of the TEEBAgriFood China program) introduced GoldenBee which is a CSR integrated service provider thinktank promoting sustainability and biodiversity conservation to enterprises in the nation. Since 2019, GoldenBee has organized natural capital accounting seminars and TEEBAgriFood workshops with the Capitals Coalition, and in 2021, the TEEBAgriFood program was launched in China through the Capitals Coalition and GoldenBee, through which webinars, roundtables and trainings for Chinese agrifood companies were organized. It was noted that GoldenBee has been involved in developing several natural capitals assessment cases of Chinese companies e.g. in the food industry, but also supporting the State Grid Corporation of China as well as the China General Nuclear Power Corporation to integrate natural capital assessment in their planning and operations. Ms. Shihui finally underscored that a service book on biodiversity management and value creation has been developed, focusing on wind and nuclear power natural capital assessments – results from this study have been included in China's report of biodiversity conservation in the phase 1 meeting of COP15 where it was released. In the future, GoldenBee will continue to cooperate with their partners to include biodiversity into the mainstreaming of the industrial department in China. See the link in the appendices for Ms. Shihui's presentation.

When asked about the bilateral interests between Natural Capital Accounting and GoldenBee or other corporate private sectors who apply this coalition approach linking to the nation's carbon economy, Ms. Shihui explained that Chinese private sector companies are not very aware or engaged in natural capital accounting. Therefore in order to have efficient cooperation with the private sector, sector-wide training must be provided to guide the companies and make them aware of the impact of natural capital. The government is involved in the promotion of Natural Capital Accounting, and now GoldenBee is moving towards the industrial level as well, in the effort to introduce this approach to enterprises. In addition, Dr. Hussain added that the TEEB Office is also leading a project on the Natural Capital Accounting and Valuation of Ecosystem Services (NCAVES) (see [here](#) for further details), which includes a component on the business side looking into carbon accounts among other things. China was a partner country for this project – please find further details about the public sector side of China's application of natural capital accounts [here](#), and further information on the business component of the NCAVES project [here](#).

In China it is currently compulsory for public companies to incorporate their Environmental, Social & Governance reporting into their annual reporting practices, so when asked what the expected response might be if the Chinese government is planning on considering the four capitals on top of their current ESG assessment – Ms. Shihui replied that the data that is currently required does not include indicators on ecosystem services, and thus not many companies disclose information on this narrative. This initiative therefore is a driving force for companies to gather and aggregate this data

so that they set up a more comprehensive and improved management system on their ESG which will be useful to them both in the short and long term.

Mr. Bhabani Pradhan (Sustainability Manager, Arvind, India) works with the private sector engagement side of the TEEBAgriFood Training for Businesses in India. Arvind is a conglomerate and a global leader in textile manufacturing with a high dependence on cotton, and therefore has a portfolio of various sustainable agriculture projects. As such, Mr. Pradhan presented a comparative business case of the human and ecological costs of sustainable vs. conventional cotton production, where the integration of the capitals approach was introduced into their business strategy through the use of the operational guidelines. The consequences of the assessment indicated that there is a need to improve access to sustainable cotton and to secure supply, which can reap benefits to human health and enhance overall ecosystem quality. See the appendices for more details in the full presentation.

Ms. Lishia Erza (CEO, Asyx Holdings, Indonesia) introduced Asyx Holdings as a supply chain finance, technology and collaboration company working to help companies along the supply chains improve their sustainability practices and access to finance. Asyx is therefore in the financial and produced capital space, with direct impact on the natural and social capitals of their portfolio. Asyx has a pilot project supporting the incubation of a social enterprise, turning agriculture waste into raw material for the textile and apparels industry, and an assessment was conducted on this to map and measure the impacts of the project to evaluate if sustainable supply chain initiatives are worth scaling, and also to determine how to improve processes. Ms. Erza shed light on the challenges encountered thus far, such as determining the relationship between the capitals. The team managed to draw conclusions that were helpful in creating better capitals approaches in their interventions and thus improving the existing projects. This methodology is thus used as part of their internal project curation process and also in their stakeholder education. For further details, please find the presentation through the link in the appendices.

Mr. Solomon Ntaiya (Prosperity Collaboratory ProCol, Kenya) shared that he is also the Business Development Director at the Mau-Mara Natural Capital Enterprise, which is an initiative that was created through the TEEBAgriFood Kenya project and is led by community leaders ensuring the integration of science and community indigenous knowledge into decisions. Thus far, the initiative has managed to encourage the communities to increase their regenerative agricultural practices by growing trees for carbon, textiles and food, which helps restore the soil health and simultaneously improves community livelihoods.

Ms. Lopez finally thanked the presenters and participants and suggested participants who are willing to discuss further to make use of the [online community forum](#) that the Capitals Coalition has created in which companies and other interested stakeholders can continue to communicate.

Communications: Elevator Pitches

Ms. Anna Hellge (Communications Expert, UNEP-TEEB) guided symposium participants through the process of developing so called elevator pitches, to clearly and concisely be able to communicate a project to anyone. These are short pitches to make people understand who you are, what it is you are

doing, and why, in order to earn a more detailed conversation, exchange contact details, or invite people to meetings etc. Elevator pitches also help to communicate the value of the scientific work, in a simple way. For further information, please find Ms. Hellge's presentation through the link in the appendices.

Partners working in the different countries practiced developing their own pitches by i) introducing themselves, ii) presenting the problem, iii) presenting the solution, iv) sharing the value proposition and v) adding a call to action, in separate breakout rooms. The country pitches were presented in plenary, but they will continue to be worked upon in due course.

Closing Remarks

Dr. Salman Hussain cordially thanked the speakers, partners and participants for their presentations and active involvement over the past days, as well as the funding from IKI and the EU, before handing the floor to **Ms. Elke Steinmetz** (Head of Division for International Cooperation on Biodiversity at BMUV, Germany). Ms. Steinmetz stressed that the German government has been a strong supporter of the TEEB initiative since its inception. TEEB has since successfully evolved which has been made possible through German funding from IKI, initially to make the case across all economic sectors for recognizing, demonstrating and capturing the values of nature, to TEEBAgriFood that aims to address the impacts that one particular sector – the agri-food sector – has on our dealing with the triple planetary crisis. Ms. Steinmetz summarized the various development phases of TEEB through the years, noting the support that has also been given to various GIZ-led projects that applied the TEEB approach, including among others the [ValuES](#) project spanning 16 countries, the IKI project on TEEBAgriFood *implementation* to make a policy impact, the Mexico study on integrating biodiversity in agriculture which was jointly conducted by GIZ, UNEP Mexico, FAO and a consortium of Mexican experts.

Much has changed since the TEEBAgriFood study was initiated in 2016, including the COVID-19 pandemic, the situation in Ukraine and more recently food and energy price shocks that have affected food security globally. The UN Food Systems Summit however has made it clear that a food systems approach is required to build resilience to these kinds of shocks, and as such, Ms. Steinmetz emphasized that the TEEBAgriFood analysis of applying food systems thinking has been ongoing long before the UNFSS. Over the course of the symposium, presentations have been held showcasing the results stemming from stakeholder led processes from the IKI countries in scope i.e. Kenya, Tanzania and Thailand whereas the Colombian theory of change was presented at the TEEBAgriFood Symposium for Latin America and the Caribbean. Concrete policy impacts arising in all three countries can be seen which is the ultimate goal of the German government's support for the work, and through this, a strong case has been made for valuing biodiversity and ecosystem services as well as climate change adaptation and mitigation.

Ms. Steinmetz noted the ongoing fourth meeting of the open-ended working group which is negotiating a global biodiversity framework which will ideally be adopted at COP52 in Montreal in December. Mainstreaming biodiversity across sectors will constitute one of the most pressing challenges, especially in the agri-food system. It is vital to ensure that evidence from these studies develop concrete results that can lead to action towards sustainable agri-food systems across all

levels. Finally Ms. Steinmetz extended her thanks to UNEP and TEEB for the successful implementation of the TEEBAgriFood initiative over the past years.

Linking TEEBAgriFood to other agendas: One Health and the UN Decade on Ecosystem Restoration

Dr. Salman Hussain shared some closing reflections wherein he argued that the approach has managed to move from hypothesis to proposal to proof and to creating changes that not only benefit the environment and people, but that also make economic sense by taking different pathways that recognize of the externalities and impacts across the value chain. In terms of the adaptability and relevance of the TEEBAgriFood approach, Dr. Hussain firstly noted the vast number of countries that are currently experiencing severe exposure to food, energy and finance shocks and explained how the TEEB analyses incorporate the evaluation purpose as well as the scope of the value chain from the very inception of the projects to ensure that the most crucial challenges are targeted. Secondly, UNEP recently joined the One Health Joint Plan of Action (OH JPA) which aims to sustainably balance and optimize the health of humans, animals, plants and the environment. The plan recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent, which aligns directly with the TEEB approach. Thirdly, the TEEB approach is also very much linked to the UN Decade on Ecosystem Restoration which aims to prevent halt and reverse the degradation of ecosystems worldwide. The principles of TEEB apply in other projects as well, such as in the ReLISA project (Restoring Landscapes in South Africa: Nature-based solutions for climate, biodiversity and people) which has recently been accepted in the pre-proposal for a UNEP-led study in South-Africa, as well as for example the Natural Capital Accounting and Valuation of Ecosystem Services project (NCAVES). The TEEB Office has been collaborating with the UN Statistical Office to try and apply SEEA-EA i.e. System of Environmental Economic Accounting – Ecosystem Accounting, and partly as a consequence of the project, SEEA became *the* statistical standard. For any TEEB study to be successful, the main threats need to be pin pointed, as well as the policies that can deal with those threats. Please find Dr. Hussain’s presentation available through the link in the appendices.

Appendices

Related Links and Resources

- Recordings for all three days (YouTube):
 - o Day 1: [Day 1 TEEBAgriFood Africa, Asia, Europe Regional Symposium 2022 - YouTube](#)
 - o Day 2: [Day 2 TEEBAgriFood Africa, Asia, Europe Regional Symposium 2022 - YouTube](#)
 - o Day 3: [Day 3 TEEBAgriFood Africa, Asia, Europe Regional Symposium 2022 - YouTube](#)
 - o Additional TEEBAgriFood Symposium recordings:
<https://www.youtube.com/playlist?list=PLC2gARKM6UvSJTvov3Vd5eaxmhBOH9qYJ>
- Presentations displayed over the three days:
<https://drive.google.com/drive/folders/1QahJz9ZTLH39Is0qUGhLt6fLKVrGX-zy?usp=sharing>
- The Economics of Ecosystem and Biodiversity (TEEB) <http://teebweb.org/>
- UN Food Systems Summit 2021 [Website](#)

- Capitals Coalition Website: [The Capitals Coalition – redefining value to transform decision making](https://www.capitalscoalition.org/)
- Capitals Coalition Online Community: <https://community.capitalscoalition.org/>

Agenda

TEEBAgriFood Asia, Africa and Europe Regional Symposium Agenda (21-23 rd June 2022)		
Time (Bangkok)	Day 1 Agenda - Tuesday 21 st	Moderator/Speaker
13:00-13:05	Opening and Welcome Remarks	Dr. Salman Hussain, Coordinator, UNEP-TEEB
13:05-13:15	High-level Opening Remarks	Dr. Dechen Tsering, Director, Regional Office for Asia and the Pacific, UNEP
13:15-13:30	Background on TEEB and the Country Projects	Dr. Salman Hussain, Coordinator, UNEP-TEEB
13:30-14:00	High-Level Panel Discussion: IKI Countries in the Regions Representation from governments in those countries whose activities and results are close to final	Dr. Salman Hussain, Coordinator, UNEP-TEEB Mr. Laban Kiplagat, Chief Engineer, Director Agricultural Land & Environmental Management, Ministry of Agriculture, Livestock, Fisheries and Cooperatives. Chair TEEB-Kenya Steering Committee Dr. Phirun Saiyasitpanich, Secretary General, Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment, Thailand Additional Speakers TBC
14:00-14:05	Introduction to Country/Thematic Presentations for IKI-funded countries in the Region	Dr. Salman Hussain, Coordinator, UNEP-TEEB
14:05-14:30	IKI TEEBAgriFood Thailand: Comparing net benefits of organic and conventional rice production in NE region <ul style="list-style-type: none"> • Thematic focus: measurement of health aspects • Contributions from other countries on the thematic focus Q&A session	Ms. Rebeca Leonard, UNEP-TEEB Assoc. Prof. Dr. Phumsith Mahasuweerachai, Faculty of Economics, Khon Kaen University (KKU)
14:30-14:55	IKI TEEBAgriFood Kenya: Values of the Mau Forest Watershed <ul style="list-style-type: none"> • Thematic focus: measurement of social capital and its impact on sustainable livelihoods • Contributions from other countries on the thematic focus Q&A session	Ms. Monica Lopez, Programme Management Officer, UNEP-TEEB Prof. Jacqueline McGlade, ProCol Kenya and Strathmore University
14:55-15:25	IKI TEEBAgriFood Tanzania: Agriculture and Forestry Land Use Trade-Offs in the Southern Highlands <ul style="list-style-type: none"> • Thematic focus: analysis of agriculture and forestry land use trade-offs and impacts through the value chain • Contributions from other countries on the thematic focus Q&A session	Mr. Jacob Salcone, Programme Management Officer, UNEP-TEEB Dr. Gody Sanga, Institute for Resource Assessment (IRA)
15:25-15:30	Closing Remarks	Dr. Salman Hussain, Coordinator, UNEP-TEEB

TEEBAgriFood Asia, Africa and Europe Regional Symposium Agenda (21-23 June 2022)		
Time (BKK)	Day 2 Agenda - Wednesday 22 nd	Moderator/Speaker
13:00-13:10	Welcome and Recap of Day 1	Dr. Salman Hussain, Coordinator, UNEP-TEEB
13:10-13:50	High-Level Panel Remarks and Discussion Representation from EUPI countries on country policy priorities	Dr. Salman Hussain, Coordinator, UNEP-TEEB Dr. Li Jun-Sheng (PSC Chair), Director of Institute of Ecology, Chinese Research Academy of Environmental Sciences, Ministry of Ecology and Environment, China Ms. Chhavi Jha, Joint Secretary (RKVY, PC & NRM), Ministry of Agriculture and Farmers Welfare, India China Mr. Jarot Indarto, Senior Planner, Agriculture Directorate, Ministry of National Development Planning (BAPPENAS), Republic of Indonesia India Mr. Yee Chen Hua, Senior Principal Assistant Secretary Policy and Strategic Planning Division, Ministry of Agriculture and Food Industries, Malaysia Indonesia Mr. Sébastien Paquot, Head of Section and Counsellor for Climate Action and Environment, EU Delegation to China Malaysia
13:50-13:55	Introduction to Country/Thematic Presentations	Dr. Salman Hussain, Coordinator, UNEP-TEEB
13:55-14:20	Thematic Session 1: What is the Potential Role of Agroforestry in Food Systems Transformations? Indonesia - Bogor University India - The Indian Council of Agricultural Research, Indian Institute of Farming Systems Research (ICAR-IISFR) Q&A Session	Ms. Monica Lopez, Programme Management Officer, UNEP-TEEB Prof. Dr. Nunung Nuryartono, Dean, Faculty of Economics and Management, IPB University, Bogor, Indonesia Dr. A. S. Panwar, ICAR Indian Institute of Farming Systems Research, India
14:20-15:00	Thematic Session 2: Can Labelling and Certification Make an Impact? India - G.B. Pant University Malaysia - Malaysian Agricultural Research and Development Institute (MARDI) Thailand - Economics Faculty, Khon Kaen University (KKU) Q&A Session	Mr. Jacob Salcone, Programme Management Officer, UNEP-TEEB Dr. A. K. Sharma, GB Pant University of Agriculture and Technology, India Dr. Hairazi Bin Rahim, Socio-Economic Research, Market Intelligence and Agribusiness Centre, MARDI, Malaysia Assoc. Prof. Dr. Phumsith Mahasuweerachai, Faculty of Economics, Khon Kaen University (KKU), Thailand
15:00-15:20	Thematic Session 3: Applying TEEBAgriFood in Multi-Functional Landscapes China - TEEBAgriFood Study Q&A Session	Mr. William Speller, Programme Management Officer, UNEP-TEEB Dr. Li Li, UNEP-IEMP
15:20-15:30	Closing Remarks	Dr. Salman Hussain, Coordinator, UNEP-TEEB

TEEBAgriFood Asia, Africa and Europe Regional Symposium Agenda (21-23 June 2022)		
Time (Bangkok)	Day 3 Agenda - Thursday 23 rd	Moderator/Speaker
13:00-13:10	Welcome and Recap of Day 2	Dr. Salman Hussain, Coordinator, UNEP-TEEB
13:10-13:35	TEEBAgriFood: Targeted Applications Georgia, Uganda	Mr. William Speller, Programme Management Officer, UNEP-TEEB Ms. Lucy Iyango, Assistant Commissioner Ministry of Water and Environment, Uganda Additional Speakers TBC
13:35-14:10	Private Sector Engagement - Pilot Applications of TEEBAgriFood Guidelines for Business Presentation and discussion from private sector groups who aim towards food systems transformation by applying the TEEBAgriFood approach Capitals Coalition China, India and Indonesia participants	Ms. Monica Lopez, Programme Management Officer, UNEP-TEEB Ms. Martine van Weelden, Senior Manager, Capitals Coalition
14:10-15:10	Communications: Elevator Pitches Interactive training session on communicating project overview and results	Ms. Anna Helge, Communications Expert, UNEP-TEEB
15:10-15:20	Closing Remarks	Ms. Elke Steinmetz, Head of Division, International Cooperation on Biodiversity, German Ministry for Environment (BMUV)
15:20-15:30	Linking TEEBAgriFood to other agendas: One Health and the UN Decade on Ecosystem Restoration	Dr. Salman Hussain, Coordinator, UNEP-TEEB

Registration List

	First Name	Last Name	Organization	Country
1.	Li	Li	UNEP-IEMP	China
2.	Jialin	He	UNEP-IEMP	China
3.	Tatirose			China
4.	AS	PANWAR	ICAR-INDIAN INSTITUTE OF FARMING SYSTEM RESEARCH, MODIPURAM	India
5.	Lukas	Hach		Germany
6.	Kai	Schlegelmilch	Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) Working Group N II 4	Germany
7.	Laurent	LOURDAIS	EU Delegation to Thailand	Thailand
8.	Marci	Baranski		Thailand
9.	Meraj	Ansari	ICAR-IIFSR, Modipuram	United States
10.	Mohamed Mounir	MFONDEN POUMIE		Cameroon
11.	Evyan	Yang	Nilai University	Malaysia
12.	Azhan	Hasan	Turner & Townsend LLC Qatar and Qatar Rail / Ministry of Environment & Climate Change (MECC) Qatar	Qatar
13.	Jirapa	Kamollerd	Triple P Advance Co Ltd	Thailand
14.	Suvigya	Sharma	G.B. Pant University of Agriculture & Technology	India
15.	Annelies	Withofs	IKEA Foundation	Netherlands
16.	Voravee			Thailand
17.	Rebeca	Biancardi	EU Commission	Belgium
18.	Georgina	Avlonitis	UNEP	Kenya
19.	Charlotte	Hicks	UNEP-WCMC	Thailand
20.	Gretel	Gambarelli		Switzerland
21.	Sophiko	Akhobadze	Regional Environmental Center for the Caucasus	Georgia
22.	Lucy	Iyango	Ministry of Water and	Uganda
23.	Madhu	Verma	World Resources Institute	India
24.	Rituj	Sahu	The Rockefeller Foundation	India
25.	biodeve	Robi	IUCN	Ethiopia
26.	Catherine	Mungai	IUCN ESARO	Kenya
27.	YOGESH	PANDEY	Govind Ballabh Pant University of Agriculture and Technology, Pantnagar Uttarakhand	India
28.	John	Owino	IUCN ESARO	Kenya
29.	Tangu	Tumeo	International Union for Conservation of Nature (IUCN)	Malawi
30.	Stephanie	Haszczyn	FAIRR	United Kingdom

31.	TITHI	DUTTA	G.B Pant University of Agriculture and Technology	India
32.	Helene	Marre	UNEP	Thailand
33.	Prakriti	Kashyap		
34.	B Nico UNEP		UNEP	Indonesia
35.	Han	Meng	UNEP	China
36.	shaoyue	ma		China
37.	Qinghe	Qu		
38.	Qian	WANG	UNEP China Office	China
39.	che	li		
40.	Xiao	Cui		China
41.	Eve	Njau		Kenya
42.	Helena	Kotkova	UNIDO	Austria
43.	Cornelius	Krüger	UNIDO	Germany
44.	Sudari	Pawiro	UNIDO	Indonesia
45.	Pankaj	Kumar	GBPUA&T	India
46.	Daniel	Ouma	University of Nairobi	Kenya
47.	Mia	Turner		United States
48.	HE	LI	FAO	Thailand
49.	Peris	Kariuki	National Museums of Kenya	Kenya
50.	Anil	Sharma	G B Pant University of Agriculture and Technology, Pantnagar	India
51.	Jarot	Indarto	BAPPENAS	Indonesia
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53.	Dr A K	Prusty	ICAR-Indian Institute of Farming Systems Research	India
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55.	ICAR-IIFSR_N. Ravisankar		ICAR-Indian Institute of Farming Systems Research, Modipuram	India
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62.	Dr. Anjan kumar M J	Anju	University of Agricultural Sciences, GKVK, Bangalorr	India
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66.	U.K	Shanwad	University of Agricultural Sciences, Dharwad	India

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74.	Kiran Kumara	T M	ICAR-NIAP	India
75.	Ashok	Gupta	SKUAST-JAMMU	India
76.	Li Yong - Interpreter			China
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83.	Iris		星芒-文化与生物多样性产业可 持续发展项目裤	China
84.	ABD SHUKOR	RAHIZAD	Department of Veterinary Services	Malaysia
85.	Cheruyot Korir		County Government of Bomet	Kenya
86.	Firdoz	shahana	PJTSAU	India
87.	Taita	Terer	National Museums of Kenya, Centre for Biodiversity	Kenya
88.	HEMALATHA	RAJA SEKARAN	DEPARTMENT OF FISHERIES MALAYSIA	Malaysia
89.	Muhaida	Mohammad	Department of Agriculture	Malaysia
90.	Norhaslinda	Mohammed	Dept Of Agriculture Malaysia	Malaysia
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92.	Mohd Hazrul	Muhammad	Department of Fisheries Malaysia	Malaysia
93.	Sebastien Paquot Delegation of the EU to China		European Union Delegation to China	China
94.	MASNI	BINTI MOHD MARZUKI	DEPARTMENT OF AGRICULTURE MALAYSIA	Malaysia
95.	Juliana Ritonga	Saipul Jannah	Department of Agriculture	Malaysia
96.	Yan	Tang	AFD	France

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98.	Tingting	Tan	EU Delegation to China	China
99.	Noor 'Abidah	Mohd Dawi	Ministry of Agriculture and Food Industries	Malaysia
100.	Malinda	Auluck		Malaysia
101.	Bethsheba	Muchiri	UNEP	Kenya
102.	Bhabani Sankar	Pradhan	Arvind Limited.	India
103.	Bryan	Citrasena	IBCSD	Indonesia
104.	Rivoldiantoe	Basran	Department of Agriculture	Malaysia
105.	Nunung	Nuryartono	Bogor Agricultural University	Indonesia
106.	primoz	roglic		United States
107.	bahroin	tampubolon	IPB	Indonesia
108.	Leonie	Pearson	University of Canberra	Australia
109.	Lucia	Stephen	TCA Accelerator	Canada
110.	SANJAY	M.T.	University of Agricultural Sciences, Bangalore	India
111.	Suria	Tarigan	IPB University	Indonesia
112.	Phuttatida	Rattana	OFFICE OF NATURAL RESOURCES AND ENVIRONMENTAL POLICY AND PLANNING	Thailand
113.	Zoltán	Kálmán		
114.	Dawn	Neo	Global Food Partners	Singapore
115.	Yudha	Kristanto	IPB University	Indonesia
116.	Rawaida	Rusli	MARDI	Malaysia
117.	Leonard	Mkusa	Centre for Urban Food Policy and Advocacy	Malawi
118.	Syarifah	Amaliah	IPB University	Indonesia
119.	Phumsith	Mahasuweerachai	Khon Kaen University	Thailand
120.	Jakrapun	Suksawat	KKU	Thailand
121.	Krityanee	Kittiphatphatnit	Khon Kaen university	Thailand
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123.	Makiko	Yashiro	UNEP	Thailand
124.	Dechen	Tsering	United Nations Environment Programme	Thailand
125.	BlueSky	Timer		
126.	Rosliza	Jajuli	MARDI	Malaysia
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133.	Farras- Bappenas			
134.	Himanshu	Yadav		
135.	Nur	Alfiani	KEMENTERIAN PERTANIAN DAN INDUSTRI MAKANAN	Malaysia
136.	Jacque	McGlade	ProCol Kenya	Kenya

137.	KASAZLINDA	JAMAL	Department of Agriculture	Malaysia
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139.	Nishi	Kumari	Arvind Ltd	United States
140.	Onesmo	Selejio	UNIVERSITY OF DAR ES SALAAM	Tanzania
141.	Consolata	Acayo	Ministry of Agriculture, Animal Industry	Uganda
142.	Grace	Bwengye	National Planning Authority	Uganda
143.	Luksanaree	Maneechot	Charoen Pokphand Foods PLC (CPF)	Thailand
144.	Harki	Sidhu	RainforestAlliance	India
145.	Hairazi	Rahim	MARDI	Malaysia
146.	Ken	Zhang		China
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150.	Chunsheng	Yao	FAO	China
151.	Pini	Wijayanti		United States
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158.	Shihui	Yang	GoldenBee	China
159.	Hui	Ouyang		China
160.	Yanping	Zhang		
161.	JING	ZHAO		
162.	岱珊	霍	淮河卫士	China
163.	蕾拉	李		China
164.	Peiyu	Zhang	UNNC	China
165.	Ma	Zhiyuan		China
166.	Yunli	Bai		China
167.	冰玉	刘		China
168.	张	孟衡	中国环科院	China
169.	fangyuan	xing		China
170.	Jihong	Yu		United States
171.	Xiangbo	Xu		China
172.	han			China
173.	chuyun	cui		China
174.	Mingxing			China
175.	Amrit Lal	Meena	ICAR	India

176.	Manqiu	Xu	吉利集团	China
177.	Lingling	Shao	SGPWF	China
178.	ruolin	ni		China
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180.	Intan Nadhirah	Masri	MARDI	Malaysia
181.	Atul	Bagai		
182.	华山	孙		China
183.	Ruipeng	He		
184.	Huiran	Ma		China
185.	wei			China
186.	Jingyi	Guo	CUGB	China
187.	光轩	谢	CAEP	China
188.	米妍	朴		China
189.	YM			China
190.	琪	周	中国地质大学 (武汉)	China
191.	Chao	Fu		China
192.	Voravee KKU Thailand			
193.	Yulu	Sun	林草局规划院GEF海洋项目	China
194.	马探	白		China
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197.	xinchen			China
198.	MARIANIS	MD DIN	MAFI	Malaysia
199.	Chunlei	Wang		
200.	Jia	Lu		China
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204.	Krityanee		KKU	Thailand
205.	欣颖	隋		China
206.	nancy	lan		China
207.	Tania	Golingi	DHI Water & Environment	Malaysia
208.	Chun Knee	Tan	Sklew Biotech Sdn. Bhd.	Malaysia
209.	BlueSky	Timer		
210.	Lishia	Erza	ASYX Holding Pte Ltd	Indonesia
211.	Lisa	Heine		United States
212.	Eve	Njau	PROCOL KENYA	Kenya
213.	Solomon	Ntaiyia	Mau Mara Natural Capital	Kenya
214.	Priyanka Nakhale			United States
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216.	Rhutu	Thakkar	Arvind Limited	India

217.	Jacque	McGlade		
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219.	Elke	Steinmetz	BMUV	Germany
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226.	Anna	Hellge	UNEP	Kenya
227.	Lucy	Cockerell	UNEP	Finland
228.	Rebeca	Leonard	UNEP	Thailand
229.	Tomas	Declercq	UNEP	Switzerland
230.	Jacob	Salcone	UNEP	Switzerland
231.	Jay	Van Amstel	UNEP	Brazil
232.	Khushboo	Ugandamal	UNEP	United States