

## TEEB for Agriculture and Food (TEEBAgriFood) Uganda Project Scoping Workshop, 18<sup>th</sup> May 2021 Virtual Platform

### Table of Contents

<b>Key Points</b> .....	<b>1</b>
<b>Opening Remarks and TEEBAgriFood Introduction</b> .....	<b>2</b>
<b>Initial Project Progress, Feedback, and Next Steps</b> .....	<b>2</b>
<b>TEEBAgriFood Brazil and UPA</b> .....	<b>4</b>
<b>National Eco-Agri-Food Priorities</b> .....	<b>4</b>
<b>Showcasing Eco-Agri-Food Research and Projects</b> .....	<b>5</b>
<b>Plenary Discussion</b> .....	<b>6</b>
<b>Workshop Synthesis and Next Steps</b> .....	<b>8</b>
<b>Summary and Closing Remarks</b> .....	<b>11</b>
<b>Related Links and Resources</b> .....	<b>11</b>
<b>Appendices</b> .....	<b>12</b>
Appendix 1: Workshop Agenda .....	12
Appendix 2: Workshop Participants List .....	13

### Key Points

- The TEEBAgriFood Uganda Scoping Workshop was held on the 18<sup>th</sup> of May 2021. The overall objectives of the workshop were to gain further feedback on the five policy scoping options which were initially presented at the TEEBAgriFood Africa Symposium in February 2021, to identify research institutions who could undertake the technical work, and to narrow and finalise the intended policy scoping for the project application.
- TEEBAgriFood is a comprehensive framework that enables food system decision-making to better integrate the material interactions between environment, economy, society, and health, and encompasses interactions from the farm to household consumption. A TEEBAgriFood application would inform Uganda policymaking by targeting the broader issues of sustainability and equity within eco-agri-food systems using comprehensive scientific evidence, as to make nature's contribution to agriculture, food systems, and human well-being visible.
- During the workshop, further discussions were welcomed following presentations on behalf of the Ugandan Ministry of Water and Environment, the Ugandan National Environmental Management Authority, TEEBAgriFood Brazil, FAO-Uganda, IUCN, and the Nile Basin Initiative. Feedback was also

obtained from participating stakeholders representing national and city-level policy-makers, as well as academic and research experts, international organisations, and youth-led organisations.

- The targeted and open discussions from the participants indicated the stronger policy demand in scoping the TEEBAgriFood application towards urban and peri-urban agriculture in Kampala, with assessment of the periphery wetlands and the ecosystem services involved in this space. Feedback from Makerere University also pointed towards the targeted focus upon the Mabamba Bay Wetlands System, located 35km from Kampala, as a site of relevance to assess the encroachment of wetlands by small-scale agricultural production.
- Going forward, further bilateral interactions and meetings with the relevant policy stakeholders will take place to develop the project’s detailed policy and geographical scoping concerning UPA in Kampala, to identify research partners, and to continue building the stakeholder network to execute a TEEBAgriFood Uganda application.

## Opening Remarks and TEEBAgriFood Introduction

1. **Dr. Salman Hussain** (Coordinator, UNEP-TEEB) firstly welcomed the participants to the workshop and introduced the Economics of Ecosystems and Biodiversity (TEEB) initiative and the TEEB Agriculture and Food programme (TEEBAgriFood). The capital stocks and value flows in eco-agri-food systems were introduced (TEEBAgriFood Scientific and Economic Foundations [Report](#)), with explanation of the TEEBAgriFood Core Proposal with consideration of the externalities involved in agricultural production systems. Dr. Hussain also highlighted the UN Food Systems Summit taking place, to which the TEEBAgriFood Uganda may contribute to “Building Back Better” from COVID-19 and to transform sustainable food systems using an economic case for change.

## Initial Project Progress, Feedback, and Next Steps

2. To introduce the TEEBAgriFood Uganda project application, **Ms. Naomi Young** (Programme Support Intern, UNEP-TEEB) firstly outlined the initial progress as a prelude to the Scoping Workshop (Figure 1).

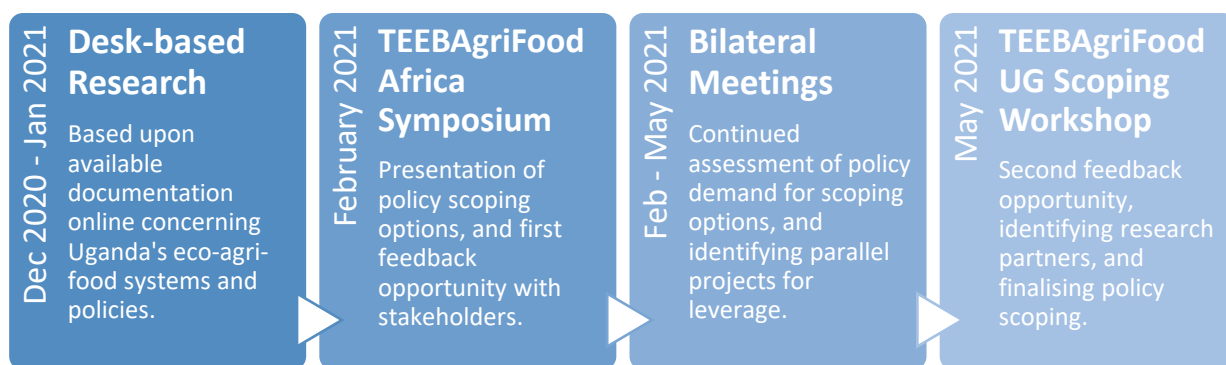


Figure 1: Initial TEEBAgriFood Uganda Project Progress

3. In overview, the following five policy scoping options were presented again (Figure 2). It was highlighted that feedback derived from the Symposium and bilateral meetings indicated that policy options targeting agri-commodities have already been integrated in national projects and targeted sector development. For these reasons, the two options (D and E) concerning agri-commodities have a weaker policy demand and

will not be considered in full detail, in favour of policy options with a stronger and more timely policy demand for Uganda (options A, B, and C).

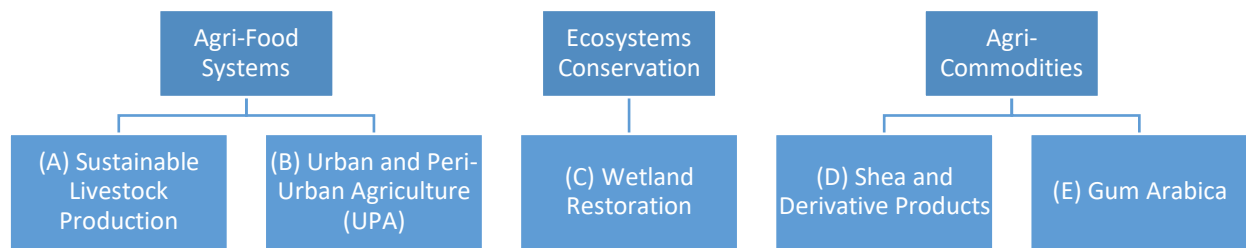


Figure 2: Policy Scoping Options for the TEEBAgriFood Uganda Application

- Options A, B, and C were introduced, drawing upon their policy relevance to Uganda’s Vision 2040 national development strategy. Specific to options A and B, the livestock sector and UPA space are both expected to experience a great scale of agri-industrialisation, outpacing the policies and strategies currently in place. Beef, dairy cattle, and poultry production systems are particularly noted, meanwhile Kampala emerges as an area of expected exponential growth in food and nutritional demands as the capital city. Bilateral feedback has identified that these options target must be mindful of both food security and environmental issues concerning land use and land change (LULC) and waste production, and is timely to consider the human-wildlife interface in urban and informal markets following the global COVID-19 pandemic.
- Specific to option C concerning wetland restoration, Ms. Young acknowledged the national recognition of wetlands as a key Ugandan ecosystem to provide ecological and socio-economic functions, across 12% of Uganda’s land cover. Despite this, significant decline and degradation is observed across river basins, as largely driven by exploitative land cover change through settlement and agriculture expansion, resource extraction and development. TEEBAgriFood assessments may therefore contribute to inform policy and decision-making for the future development of wetlands, as to better support sustainable livelihoods through means such as freshwater provisioning, irrigation schemes, and natural restoration activities.
- Parallel projects were also identified and introduced, which could provide leverage to the TEEBAgriFood Uganda application and were later presented in further detail during the workshop. These have been led by FAO-Uganda, IUCN, and the Nile Basin Initiative. An ongoing UNEP Economy Division project led by Ms. Marina Bortoletti, “Catalysing Urban and Peri-Urban Agriculture (UPA) to Improve Diets and Resilience” being applied in Kampala, is particularly relevant to the TEEBAgriFood Uganda application. The ongoing TEEBAgriFood Brazil application in São Paulo concerning UPA was also identified for high complementarity, and will also be presented in further detail by Mr. Jay Marinus van Amstel.
- Mr. William Speller** (Programme Officer, UNEP-TEEB) detailed the next steps following the Scoping Workshop, considering the tight funding and timeline available for the Uganda project by the end of 2021. Firstly, the workshop outcome will intend to contribute towards the finalisation of the TEEBAgriFood Uganda application scoping and identification of research partners to undertake the technical analysis using geospatial methods, ecosystem service assessments, and scenario analysis. Secondly, detailed project scoping will be required to design the scenarios, and the assessment of data needs and availability to execute the technical and analytical work. Thirdly and throughout, TEEB hopes to continue the positive and constructive dialogue with relevant policy stakeholders in Uganda, especially with the intention of the project to inform policy discussions.

## TEEBAgriFood Brazil and UPA

8. **Mr. Jay Marinus van Amstel** (TEEBAgriFood Brazil Consultant, UNEP-TEEB) presented the TEEBAgriFood Brazil application concerning UPA in the São Paulo Metropolis and the opportunities to provide ecosystem services, and the modalities of the project in progress. More broadly, the project aims to reduce the environmental impacts of the city, strengthen the resilience on climate change and pandemics, and to mitigate the negative impacts on biodiversity loss. São Paulo was firstly introduced to give context to the spatial scoping, for a city of 21 million inhabitants across 7,946km<sup>2</sup>, where the land cover comprised of 22% for pasturelands and agriculture and 26% for urban areas. Various agricultural production systems take place at the city-level, including: multiscale commercial agriculture, urban and rural multifunctional agriculture, family-led commercial agriculture, vertical farms, and community gardens.
9. The TEEBAgriFood Brazil application analyses the following five ecosystem services to assess the trade-offs, limitations, and opportunities for interventions in UPA: food provisioning, flood mitigation, heat mitigation, water yield, and erosion regulation. The alternative scenario assessed is premised upon the greater provisioning of locally-produced agriculture with the dedicated distribution for communities of high social vulnerability, meanwhile simultaneously providing an income generation source and environmental services.
10. Going further, the project will intend to provide leverage to a wide range of solutions to sustainable urban and peri-urban agriculture in this space. Such include: (1) a metropolitan regulatory framework defining UPA, (2) strengthening land use regulation policies, (3) payment programs for environmental services, and (4) providing access to productive structures to enable efficiency e.g. credit, technical assistance, and alternatives.

## National Eco-Agri-Food Priorities

11. **Mr. Nathan Mununuzi** (Senior Environment Officer), on behalf of the Ugandan Ministry of Water and Environment, presented on the “Policy Responses to Environmental Challenges in the Agricultural Sector” and first reflected on the environmental context in Uganda. The country’s economy is largely dependent on its abundant environmental resources, deriving 80% of the population’s livelihoods within natural resource-based sectors. Agriculture, in particular, contributes to 23% of the national GDP, 48% of total exports and makes up 68% of Uganda’s employment. Despite its significance, cross-cutting socio-economic challenges to Uganda’s natural resource base has degraded natural forest cover, wetlands, riverbanks and lakeshores. This has been primarily driven by rapid population growth and agricultural expansion, with consequential effects in the erosion of soils, declining soil fertility, compromised quality and availability of water, overgrazing, natural ecosystem encroachment, and invasion of weed species.
12. Mr. Mununuzi highlighted the key policy responses underscoring environmental decision-making in Uganda, including: the National Environmental Management Policy (1994); the National Forestry Policy (2001); the Guidelines for Mainstreaming Climate Change Adaptation and Mitigation in Agricultural Sector Policies and Plans (2018); and the Strategic Investment Framework for Sustainable Land Management (2010-2020). Going forward, policy actions required include the shift towards increased and improved productivity with use of locally-available materials, limiting the expansion of farming onto fragile ecosystems, and promoting organic production practices.

13. **Mr. Fred Muwanika** (BIOFIN Finance Expert), on behalf of the National Environmental Management Authority, presented on the “Environmental Challenges and Agricultural Sector in Uganda”. Echoing Mr Mununuzi’s presentation, Mr Muwanika reflected upon the contributions of the agriculture sector upon the GDP and employment, and the impacts of agriculture upon deforestation and soil degradation. As such, the key policy priorities suggested the targeted assessment of low agricultural production issues which consequentially cause encroachment on forest and wetland areas. Mr. Muwanika particularly mentioned the rural, urban, and peri-urban regions, meanwhile taking into consideration issues of land tenure in Uganda.

### Showcasing Eco-Agri-Food Research and Projects

14. **Dr. Gerald Nizeyimana** (Livestock Specialist and Uganda “ASL2050” Focal Point), representing FAO Uganda, presented and gave insight to the “Future of Urban and Peri-Urban Livestock Production in Uganda: Perspectives from Africa Sustainable Livestock 2050 Project”. The intended demand growth for livestock products against the growing national and Kampala populations were introduced, as framed to consider the expanding and novel livestock value chains serving peri-urban areas. Furthermore, the opportunities and challenges emerging as a consequence were discussed, such as the increased pressure on natural resources, increased point source pollution of soil and water, greater prevalence of antibiotic resistance, and the increased interactions between animals, people, and wildlife.
15. Going forward, Dr. Nizeyimana suggested policy initiatives that may be employed to transition towards sustainable urban and peri-urban livestock value chains, emphasizing the scaling up of good practices through policy reforms. Examples include: (1) the review of existing policy and legislative frameworks to assess to what extent it currently supports sustainable UPA livestock value chains, and (2) the identification, documentation, and creation of good livestock practices along UPA livestock value chains.
16. **Mr. Leonard Akwany** (Regional Wetlands Expert), representing the Nile Basin Initiative, gave insight to the TEEB-inspired Nile Basin Transboundary Wetlands projects and the lessons learnt from Uganda’s transboundary wetland sites. The TEEB-inspired studies aim to bring wetland ecosystem service values to the attention of river basin planners and managers, ensuring investments towards wetlands restoration and green infrastructure through bankable projects. Mr. Akwany firstly introduced the Nile Basin wetland system, covering 18.3 million hectares, and the challenges faced by its underutilisation and degradation upon the associated ecosystem services. Specific to Uganda, the Sio-Siteko (Kenya and Uganda) and the Semliki Delta (DRC and Uganda) transboundary wetland sites were assessed for their economic contributions via ecosystem services, serving to influence the development management plans.
17. With greater detail in the modalities of the TEEB-inspired projects, Mr. Akwany introduced the four scenarios assessed at the sites, including: (1) the business-as-usual scenario, (2) the agricultural intensification scenario, (3) the conservation scenario, and (4) the green infrastructure scenario. Going forward, progress is being made to better integrate water resources management through a Nile Basin Decision Support System platform (Nile DSS), and application of the project findings within conservation investments plans and investments portfolios. Overall, the projects also contribute to the wider sectoral planning and policy influence towards the management of Uganda’s wetlands and interactions with transboundary sites.
18. **Mr. Ephrem Imanirareba** (Enterprise and Economy Specialist), representing IUCN and the Eastern and Southern Africa Regional Office (ESARO), presented the applications of the Restoration Opportunities

Assessment Methodology (ROAM) for forest landscape restoration in Africa with considerations for ecosystem services. The modalities of the methodology application were introduced and discussed, involving: stakeholder coordination and support, spatial analysis and mapping, benefit and cost appraisals, carbon abatement costs and accrual, results validation, and the identification of restoration and investment options and opportunities. As a result of the work, the ROAM assessment outputs include restoration opportunity maps which may be able to inform landscape-level trends such as ecosystem services, restoration priorities, and decision unit aggregated data.

19. Mr. Imanirareba also reflected upon the considerations of gender-responsive and youth-led approaches to forest landscape restoration, in the provisioning of ecosystem benefits and the controlled access to forests. At present, there are challenges of access to productive resources and skills, as influenced by the lack of engagement with the disadvantaged and discriminated groups as stakeholders in development strategies. This is significant whereby women encompass an average of 43% of the agricultural labour force in developing countries, meanwhile the large majority of youth in Africa predominately live in rural areas and are employed in agriculture, accounting for 65% of total employment.

## Plenary Discussion

20. **Dr. Esau Galukande** (Ag. Director – Directorate of Gender, Community, and Production, Kampala Capital City Authority) reflected on the alignment of UPA priorities as indicated by TEEB and shared by the Kampala Capital City Authority (KCCA). This has been specifically reflected by KCCA’s Strategic Plan (2020-2025), where UPA is strongly anchored in the following four pillars of the plan:
  - a) **Quality of Life of Residents:** Aims to improve the lives of city dwellers including the disadvantaged groups;
  - b) **City Resilience:** Aims to address carbon permissions to manage climate change improve waste management and drainage in most affected areas;
  - c) **Economic Growth:** Aims to support and growth the formal sector development, and improves approaches to involve the private sector;
  - d) **Citizen Engagement and Governance:** Aims to improve institutional effectiveness, improve collaboration, and develop household incomes within the agricultural model of the city.
21. Dr Galukande noted the role of UPA in Kampala, for the provisioning of nutritious food, improving food security within the city for citizens and especially disadvantaged groups, and reducing carbon emissions by mileage and transported foods. UPA developments in Kampala may also harness innovative recycling methods, such as recycling biodegradable wastes into fertilizers using red wriggler earth worms and black soldier flies. This has benefits to: maintain the productivity of soil used in urban farming; to better consider the urban value chains, value addition activities, and storage capacities; and to maintain greater long-term employment benefits for city residents. Furthermore, incentives and technologies are provided to communities to promote urban farming in the small spaces in household backyards, thereby limiting the encroachment of agricultural production onto vulnerable ecosystems such as wetlands and floodplains.
22. Finally, Dr. Galukande highlighted the KCCA’s strategy to move away from planning at a city-level, but instead to proceed with development into the “Greater Kampala Metropolitan Area”. As such, a platform will be created in the districts surrounding Kampala, and there will be a strong address of activities and actions that promote sustainable economic growth and resilience, such as UPA. Other cities and townships

will also be considered in the transformation of sustainable food systems around Kampala, such as Mukuno, Kira, Entebbe, and Mpigi.

23. To reflect on a parallel UNEP project taking place in Kampala concerning UPA, **Ms. Marina Bortoletti** (Programme Officer, UN Environment Programme) remarked on the collaboration with KCCA to foster sustainable agriculture and establish links with the KCCA Strategic Plan pillars. The project will aim to provide more fresh and nutritious food to the city population, to support technologies as led by the Kanga Agricultural Resource Centre, and to support the governance of UPA investments and returns in Kampala. As part of the project, studies will be undertaken to assess UPA investments in the city and to provide capacity building sessions on urban planning and UPA to governmental and key stakeholders.
24. The parallel UNEP project, “Catalysing UPA to Improve Diets and Resilience” in Kampala will be targeted towards the five city divisions (Central, Kawempe, Makindye, Nakawa & Rubaga) amongst urban farming communities, with biodiversity conservation and resource management measures prioritised centrally. The project is currently ongoing, with collaboration between UNEP, KCCA, and Rikolto.
25. To add to the discussion, **Mr. Julius Mafumbo** (Assistant Commissioner – Directorate of Environment Support Services, Ministry of Water and Environment) reflected upon the nature of UPA taking place at the expense of fragile ecosystems, and its relationship with flooding, pollution, and deforestation which are underlying concerns for Kampala. When considering the promotion of UPA, Mr Mafumbo suggested that technologies such as hydroponics should be integrated, as to expand agricultural activities vertically instead of across land availability in Kampala. Mr. Mafumbo highlighted the positive trade-offs of vertical agricultural expansion, as to improve community incomes, agricultural productivity, nutritional security, and environmental resilience across fragile ecosystem landscapes.
26. Reflecting on the data availability and points of leverage from the National Forestry Authority, **Mr. John Diisi** (GIS and Mapping Coordinator) remarked that land cover mapping has taken place in Uganda since 1990, providing a wall-to-wall coverage across the country. Ecosystems have also been mapped completely, for land cover types such as forests, seasonally-wet wetlands, permanently-wet wetlands, rangelands, mountains, and subsistence and commercial agriculture, amongst others. Data availability is driven by the environmental challenges faced by Uganda, such as paddy rice farming expansion and the cultivated of wetlands, and so this is available for use and applications. Such include the development of natural capital accounts or for targeted projects and studies, as utilized by institutions such as the National Planning Authority, the National Environmental Management Authority, the World Bank, the Ministry of Finance, and the Ugandan Wildlife Authority.
27. Mr. Diisi also reflected upon the comparisons between Brazil and Uganda, whereby the land availability in São Paulo still holds the potential for agricultural expansion and crop development. On the other hand, the five city divisions of Kampala have already been heavily built up, and so Mr. Diisi questioned how such work could be carried out in Kampala. In addition, Mr. Diisi highlighted that the development of UPA in Kampala should take into account the market for manure produced in towns which may be easily transported back to agricultural lands for recycling and use.
28. To comment on Mr. Diisi’s remarks, **Mr. Jay Marinus van Amstel** (TEEBAgriFood Brazil Consultant, UNEP-TEEB) reflected on the spatial realities of São Paulo, where available land is privately occupied, and the government may utilize specific policies to boost urban agriculture to combat unsustainable expansion. It is also found that selling land for urban expansion may prove more profitable than cropping, and so agriculture must be assessed for its value in competing economically against urban expansion. The spatial

dynamics of fertile agricultural areas must also be assessed, to reconcile the needs of nature conservation, sustainable food production systems, and growing urban livelihood demands. As urban expansion is strongly projected across African cities, this is an important concern that should be addressed.

29. Mr. van Amstel also remarked upon the GIS limitations to assess urban agriculture. In the case of Brazil, the 30m spatial resolution of satellite imagery is not adequately fine to assess small-scale food production sites or backyard cropping sites. Other geospatial methods and higher-resolution satellite imagery may be applied to derive analysis better suited to the scale of research. Mr. van Amstel also suggested to expand the scale of analysis to the metropolis-scale, as to assess land-use types for agricultural development and production.

## Workshop Synthesis and Next Steps

30. **Dr. Salman Hussain** (Coordinator, UNEP-TEEB) thanked the presenters for their contributions and initiated the workshop discussions to begin narrowing the scoping to close. Dr. Hussain firstly highlighted the time and budgetary constraints at hand with the TEEBAgriFood Uganda application, recognising that in usual circumstances the project would involve stakeholder consultations with a steering committee formed, a wider participatory approach to identifying priorities, and ascertaining shortlisting for scoping areas. As such, a TEEBAgriFood Uganda application would harness the existing SEEA work and World Bank data to create and contribute towards a policy impact.
31. Without going back to the long-list of options in the absence of in-person meetings, Dr. Hussain suggested to make the case for urban and peri-urban agriculture in the context of the TEEB application, with an application of a wetlands-based scenario. The discussion has indicated that there is potential work to be conducted for UPA, and critically, when NORAD funding has specified for work targeting sustainable food systems. The UNEP Economy Division work, as prefaced by Ms. Bortoletti, would provide a strong basis for leverage through optimising capacity building and resource management activities, meanwhile providing a basis for complementarity by TEEB to make the economic case for ecosystems services in the UPA space. This would complement the policy needs for national and city-level government to undertake economic assessments of the natural and ecosystem services for interventions. By going forward in this way, the TEEBAgriFood Uganda application with a policy focus on UPA may be complemented by the wider assessment of other options should more funding become available in the future.
32. With reference to the business-as-usual alternative scenarios discussed by the TEEBAgriFood Brazil application in São Paulo, Dr. Hussain framed the workshop synthesis discussion to consider whether a similar assessment upon UPA in Kampala could be useful to make the material and economic case to the government and policy-making for intervention. This is the core approach to TEEBAgriFood applications, and would be used to guide reflections by the Ministry of Water and Environment during the discussion.
33. Finally, Dr. Hussain highlighted that there are cost implications to developing alternative scenarios, as opposed to the BAU scenario. On one hand, most of the TEEBAgriFood work involves specifying scenarios, evaluating ecosystem benefits and their influence on social and human capital, and making these values visible through monetary or monetary-equivalent terms. On the other, the TEEBAgriFood work must be able to demonstrate a return on investment, where UPA funding will lead to benefits for the Ugandan people which have been hitherto invisible. As such, Dr. Hussain asked the floor whether policymakers would be interested and receptive in the economic evidence generated through the valuation of benefits through improving UPA in Uganda, and whether such an application would make a difference.



34. **Mr. John Diisi** (GIS and Mapping Coordinator, National Forestry Authority) expressed agreement with assessing food provisioning as an ecosystem service, using the TEEBAgriFood Brazil application as an example, however questioned the value of targeting services such as flood mitigation, soil erosion, and water yield for Uganda or Kampala specifically. Such is the case for water yield, where UPA in Kampala largely discharges polluted water and would therefore would not be considered a beneficial ecosystem service. **Dr. Hussain** expressed understanding, and reflected upon the TEEBAgriFood rationale targeting ecosystem services beyond food provisioning services. In response to Mr. Diisi's comments, Dr. Hussain asked Mr. van Amstel to reflect on the TEEBAgriFood Brazil application and the process involved to identify the relevant ecosystem services for São Paulo.
35. **Mr. Jay Marinus van Amstel** (TEEBAgriFood Brazil Consultant, UNEP-TEEB) reflected on this process required to select the ecosystem services and the involvement of stakeholder engagement. Ecosystem services selected were specific to the context of São Paulo, such as water yield considerations for the freshwater provisioning for cattle rearing and production, flood mitigation activities, and heat mitigation to curtail the urban heat island effect. Mr. van Amstel also reflected on the interactions between ecosystem services, and the ways in which they respond specific to urban infrastructures and agriculture to derive positive benefits or negative impacts. Such may include erosion regulation, soil management practices, and irrigation practices to respond to water conservation affairs.
36. **Mr John Diisi** reflected on the ecosystem services relevant to Kampala, where they seek to drain water away from low-lying flood prone areas and to prevent mosquito breeding, in contrast to São Paulo's intentions to retain water supplies. Soil erosion is also a key priority for Kampala's agricultural production and crop growth, as nutrients and structure are lost following exposure. **Dr. Patrick Byakagaba** (Lecturer, Makerere University) expressed agreement to Mr Diisi's comments, and added that heat regulation is not a critical priority for Kampala as the city lies 23km south of the equator. On the other hand, ecosystem services concerning food production and specifically fish farming and production sectors may be policy-relevant for UPA instead, cognizant that water is a readily available resource in Uganda. As such, the selection of ecosystem services in the TEEBAgriFood Uganda project must be tailor-fitted to align with the Kampala and Ugandan environmental and policy context.
37. **Dr. Hussain** prompted the discussion to expand on possible policy-relevant study locations, geographical scoping, and types of interventions which may contrast against potential business-as-usual (BAU) scenarios. **Dr. Patrick Byakagaba** suggested that the periphery wetlands surrounding the Kampala Metropolitan area could be considered, such as the Mabamba Bay Wetland System and its associated tributaries. The interventions which could be realised include monitoring siltation, enforcing wetland boundaries alongside Ramsar Convention protections, applying land use conservation practices specific to wetlands, and the consideration of fish farming for food provisioning. To combat siltation locally, Dr Byakagaba suggested to control agricultural expansion in wetland-adjacent areas, to control the use of agro-chemical pollution in wetlands and wetland-adjacent areas, and to apply mechanical interventions at sites with high siltation.

**Box 1: Mabamba Bay Wetland System**

The Mabamba Bay Wetland System, spanning 16,500ha of wetlands of which 2,424ha is protected, is situated 35km south west of Kampala and is recognized as a wetland of international importance by the Ramsar Convention. The marsh wetlands extend towards the main body of Lake Victoria, and

supports an average of 190,000 birds annually and globally-threatened avifauna populations of conservation interest. The site maintains lucrative fisheries activity across six landing sites for subsistence and commercial purposes, as well as providing raw material for local crafts, building materials, water for domestic and livestock use, and non-wood products. Furthermore, the Wetland System plays an important hydrological role for waters entering the Lake Victoria by trapping incoming sediments and silt, meanwhile acting as flood control areas for the shoreline.

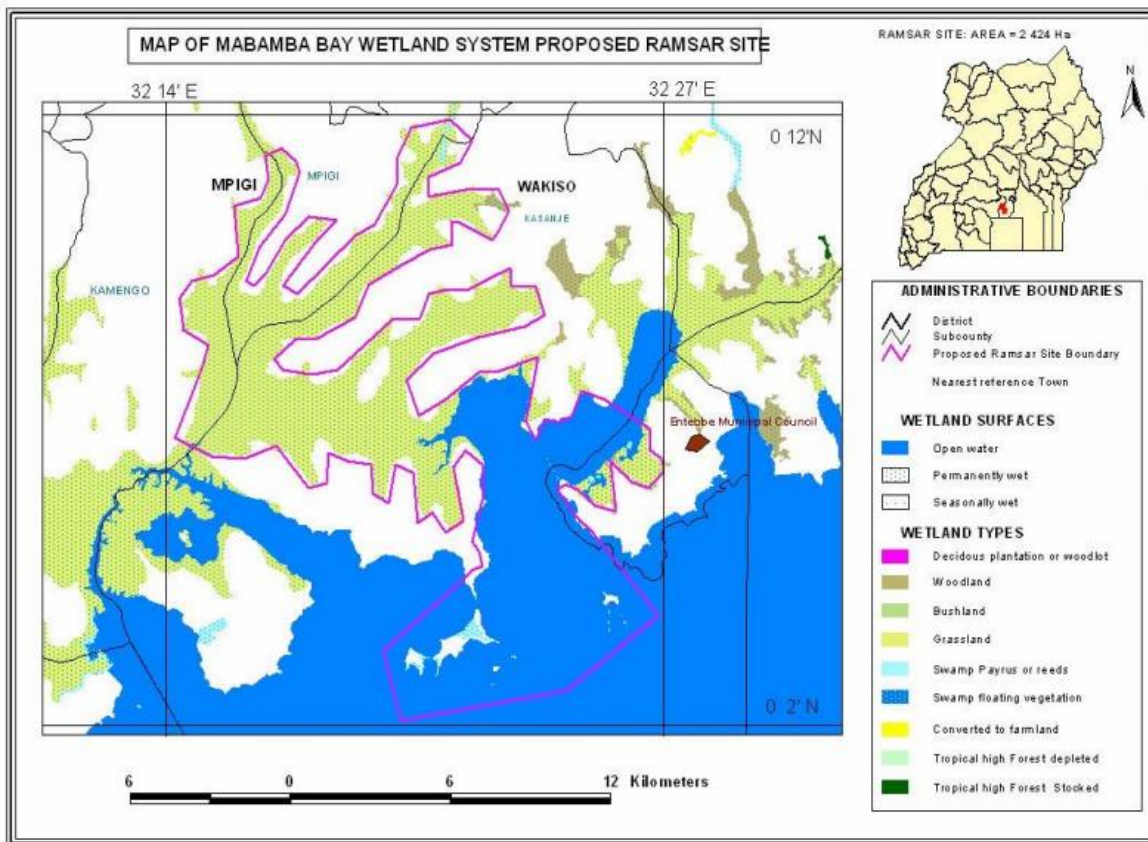


Figure 3: Mabamba Bay Wetland System, Ramsar Site Map

38. In response, **Dr. Hussain** prompted the reflection by the Nile Basin Initiative, specific to the suggested focus of UPA and wetlands with the intention to secure boundaries, reduce siltation, and realise other co-benefits. **Mr. Leonard Akwany** (Regional Wetlands Expert, Nile Basin Initiative) detailed the importance of a landscape-level connectivity, especially with regards to Kampala as urban infrastructure, cultivated areas, periphery ecosystems, and the Lake Victoria are closely interlinked and influenced by one another. Mr. Akwany also reflected on the interlinked ecosystem interactions that must be considered, such as the siltation of sediments and nutrients from urban and cultivated areas towards Lake Victoria.
39. To reflect on the suggested foci put forward by Dr. Byakagaba and Mr. Akwany and the relevant ecosystem services, **Mr. Fred Muwanika** (BIOFIN Finance Expert, National Environmental Management Authority) remarked that Kampala is predominately built-up, and food is transported from periphery districts such as Luwero District. A TEEBAgriFood application must therefore be scoped beyond the metropolitan area and towards rural areas of production.

40. Additionally, Mr Muwanika addressed the the key issues of urban flooding and pollution, where both risks discharge unsanitary water for further usage in agricultural production or human consumption. An example involves issues of water supply, shifting from Lugaba Division in Kampala to Katosi in the Mukono District, as means to provide the population with sanitary water without the costs of water treatment. Another example considering urban flooding acknowledges the polluted runoff from seasonal or heavy rains, indicating that urban areas are built up and floodplains must be managed to prevent the loss of human lives.
41. **Mr. Nathan Mununuzi** (Senior Environmental Officer, Ministry of Water and Environment) added to the commentary, emphasizing that a broader perspective must be maintained when considering UPA and the integrated issues involved. This has been similarly addressed by Dr. Galukande from KCCA, and emphasized how integrated urban agricultural systems will reduce pressure on wetlands to address flooding problems, protect food security, and improve livelihoods through waste management practices. This interconnected perspective may be better suited to draw the attention of policymakers.

### Summary and Closing Remarks

42. In sum, **Dr Salman Hussain** (Coordinator, UNEP-TEEB) highlighted the centrality of integration for the interconnected approaches to UPA and their ecosystem services, in line with the TEEBAgriFood approach. The unimpeded and uncontrolled UPA expansion and its derivative effects such as flooding would be the targeted areas of address for a TEEBAgriFood Uganda application, as informed by the existing LULC maps generated by the National Forestry Authority. Therefore, this is the economic case that a TEEBAgriFood study would aim to make.
43. To close the event, **Mr. William Speller** (Programme Officer, UNEP-TEEB) thanked the comments, contributions, and interventions from the participants that were key to provide a broad steer on the scope of analysis during the workshop. More precise scoping will be required following the workshop to derive further details, however this will be conducted through reaching out to various colleagues and partners bilaterally to continue discussions. In sum, Mr Speller thanked the presenters for their time and contributions, and affirmed the proceeding contact by email post-workshop to share the recordings and event report.

### Related Links and Resources

- TEEB – The Economics of Ecosystems and Biodiversity, Website: [Link](#)
- TEEBAgriFood Scientific and Economic Foundations, Report: [Link](#)
- TEEBAgriFood Africa Regional Symposium, Uganda Discussion Summary: [Link](#)
- UN Food Systems Summit, Website: [Link](#)

## Appendices

### Appendix 1: Workshop Agenda

Time (EAT)	Session	Agenda Outline
13:00-13:30	Workshop Introduction	<b>Opening Remarks and TEEBAgriFood Introduction</b> <b>Dr. Salman Hussain</b> Coordinator, UNEP-TEEB
		<b>Initial Project Progress, Feedback, and Next Steps</b> <b>Mr. William Speller</b> Programme Officer, UNEP-TEEB  <b>Ms. Naomi Young</b> Programme Support Intern, UNEP-TEEB
		<b>TEEBAgriFood Brazil and UPA</b> <b>Mr. Jay Marinus van Amstel</b> UNEP-TEEB Consultant, TEEBAgriFood Brazil
13:30-14:30	Presentations: National agri-food and environmental dimensions	<b>Segment 1: National Eco-Agri-Food Priorities</b> <b>Mr. Nathan Mununuzi</b> Senior Environment Officer, Ministry of Water and Environment  <b>Mr. Fred Muwanika</b> National Environmental Management Authority
		<b>Break and Q&amp;A</b>
		<b>Segment 2: Showcasing Eco-Agri-Food Research and Projects</b>  <b>Dr. Gerald Nizeyimana</b> Livestock Specialist and UG Focal Point, FAO Uganda  <b>Mr. Leonard Akwany</b> Regional Wetlands Expert, Nile Basin Initiative  <b>Mr. Ephrem Imanireba</b> Enterprise and Economy Specialist, IUCN ESARO
14:30-15:55	Plenary Discussion	<b>Plenary Discussion</b> Guided questions and open floor discussion concerning the Ugandan agri-food context, proposed policy options and scoping considerations, and the TEEBAgriFood Uganda project.
15:55-16:00	Workshop Conclusion	<b>Summary and Closing Remarks</b> <b>Mr. William Speller</b> Programme Officer, UNEP-TEEB

For more information about UNEP-TEEB, visit: <http://teebweb.org/>

To register, please email: [naomi.young@un.org](mailto:naomi.young@un.org)

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Appendix 2: Workshop Participants List

#	Name	Affiliation
1	Salman Hussain	UNEP-TEEB
2	William Speller	UNEP-TEEB
3	Monica Lopez Conlon	UNEP-TEEB
4	Simi Thambi	UNEP-TEEB
5	Jay Marinus van Amstel	UNEP-TEEB
6	Lucy Cockerell	UNEP-TEEB
7	Naomi Young	UNEP-TEEB
8	Levis Kavagi	UNEP
9	Marina Bortoletti	UNEP
10	Chereye Saleh	UNEP
11	Marieke Sassen	UNEP World Conservation Monitoring Centre
12	Stephen David Mugabi	Ministry of Water and Environment, Uganda
13	Julius Mafumbo	Ministry of Water and Environment, Uganda
14	George Wamunga	Ministry of Water and Environment, Uganda
15	Nathan Mununuzi	Ministry of Water and Environment, Uganda
16	Carol Kagaba	Ministry of Water and Environment, Uganda
17	Lucy Iyango	Ministry of Water and Environment, Uganda
18	Fred Muwanika	National Environmental Management Authority, Uganda
19	John Diisi	National Forestry Authority, Uganda
20	Sam Koojo Mugume	Ministry of Finance, Planning and Economic Development, Uganda
21	Esau Galukande	Kampala Capital City Authority, Uganda
22	Michael Kirya	Kampala Capital City Authority, Uganda
23	Patrick Byakagaba	School of Forestry, Environmental, and Geographical Sciences, Makerere University
24	Gerald Nizeyimana	Food and Agricultural Organisation, Uganda
25	Willington Bessong Ojong	Food and Agricultural Organisation, Uganda
26	Juan Carlos Sanchez	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), Uganda
27	Leonard Akwany	Nile Basin Initiative
28	Philip Otieno	Nile Basin Initiative
29	Jemal Ahmed Tadese	Nile Basin Initiative
30	Ephrem Imanirareba	International Union for the Conservation of Nature
31	Miguel Leal	ClimateSmart
32	Edgar Barigye	TwendeKazi