

## ISC Workshop on foresight, Bioversity Intl, 19 June 2018

(and ISC meeting of 18 June, Document 6)

### Foresight and FTA

There is more and more demand for foresight for many reasons:

- Longer term development demands, that are explicit and expressed: SDGs, NDCs. BaU, alternative, aspirational pathways.
- Need to be coherent and consistent internally (for internal reasons but also vis a vis our partners: what are the scenarios we use etc?).
- Also, opportunity to be in an agenda setting situation, strengthen the position of FTA in the global research and development agenda. The more coherent we are the better + importance of the capacity to generate our own scenarios for the future of food, agriculture, forests and land/water use. (full outsourcing would be an issue).
- And would help FTA to be stronger in front of donors with a stronger narrative on the future of food. Example of IPCC: has shown all government of the world that climate is changing and therefore that the world need to invest 1) in climate research, 2) in climate action.

At global level, there is increasing interest and talk about foresight on agriculture and food both in the CGIAR, and outside, including a new prospective exercise in FAO and the Foresight4Food initiative.

Countries need to implement several international commitments that have 2030 as their deadline: the SDGs, their own NDCs. Developing countries are also preparing their National plans of adaptation to climate change. This raises the question of how to help countries framing their own objectives and trajectories.

In this perspective, what could be the interest and involvement of FTA.

The present note aims to inform a discussion on the matter first inside FTA and then with potential partners. It considers foresight in a broad way, recalls the content of the phase 2 proposal, takes stock of the work conducted in FTA and available resources, identifies needs and potential articulations with on-going initiatives and makes proposals for a way forward.

#### 1) Scope

Foresight refers to the studies that aim to anticipate possible or probable futures. The word “foresight” is used both in a restricted way, often linked to the construction and use of scenarios and a broad way covering all “future” studies. We propose to cover here a broad scope in order to integrate the various needs and initiatives related to future studies both inside and outside FTA. Such studies apply a diversity of approaches, methods and tools. They can be economy wide or sectoral and can have a global,

regional, national or local scope and diverse time horizons. They can limit themselves to project current trends and known changes, in a Business As Usual (BAU) scenario or be more exploratory, starting with visions of the future and then backcasting to design pathways to arrive to these visions. There are also numerous studies that examine the impacts of the evolution of a specific parameter or driver or aim to describe the potential consequences of a determined change, for instance a political decision or measure (see Annex 1). Such studies can go both ways from local or sectoral to global, like how the evolution of yield in various countries could influence global demand for land, or from global to local and sectoral, how zero deforestation could impact palm oil production evolution.

## 2) Foresight in FTA phase 2 proposal

The phase 2 proposal delineates the scope and objectives of foresight in FTA:

*Foresight analysis will be undertaken to: (i) examine the emerging trends in forests, trees and agroforestry, especially to predict their potential impact on the SLOs; and (ii) estimate the potential impact of FTA outputs on the IDOs and SLOs. The results of the foresight analysis will also be used to identify important research areas for FTA to address. The analysis will combine both quantitative methods, such as general or partial equilibrium models, and qualitative methods, such as participatory future scenario building. Trade-offs will be built into the analysis, allowing a simulation of the winners and losers in a particular situation, policy innovation or practice adoption. (Annexes, p 184)*

The proposal also clearly articulates responsibilities:

- The management team has the responsibility to “organize and maintain foresight on prospective or emerging issues”. The support platform “delivers on foresight”, collaborating with FPs and other CRPs (CCAFS, PIM and WLE).
- In particular FTA collaborates with PIM on foresight analyses and research on policy processes. (Annexes, p 189). It provides to PIM foresight analysis (p33), in particular foresight analyses on oil palm (global) (p 39). Among the flagships, FP5 explicitly mention foresight to inform mitigation and adaptation.

## 3) Stock taking

Existing results from major global foresight studies have been used by the MSU to prepare the background to the prioritization exercise<sup>1</sup>. At this occasion gaps have been identified, in particular on land use and land use change. Many global foresight studies are focused on

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<sup>1</sup> See note on prioritization

agriculture and food, not taking into account forests and trees. Other are focused on energy or carbon sequestration.

There is a need to link these approaches, that focus on demand for land, wood energy or carbon sequestration, combine them with some other demands like the demand for materials for construction, furniture, paper... including as substitutes to non-renewable materials, and to combine them with a better understanding of the other factors that have an incidence on production, such as forest management, institutions, organization of value chains, investments...

A study has been conducted on foresight in CIFOR. Preliminary results show that an important part of what has been identified as foresight work was related to projects in the field, using participatory approaches with a time horizon of 5 to 10 years. The researchers interviewed pointed out the need for a common understanding of the notion as well as for methodological support, highlighting the lack of specific competencies in CIFOR.

From the synthesis prepared for the workshop organized by the ISPC on foresight in the CG, and in addition to what mentioned above, it appears that FTA conducts various types of studies:

- contributing to broader exercises, like the work on projections cocoa yield in main producing countries<sup>2</sup> to be used to determine land area needed to answer demand using the IMPACT model ([Global Futures and Strategic Foresight](#))
- estimating the impact of reduced deforestation on palm oil production with IIASA<sup>3</sup>
- estimating the relations between global demand changes and national production<sup>4</sup>
- estimating the impact of the implementation of NDCs in Brazil, DRC and Indonesia with IIASA<sup>5</sup>
- exploring changes at local and landscape level<sup>6</sup>

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<sup>2</sup> Elisabetta Gotor (Bioversity International), under review.

<sup>3</sup> Pablo Pacheco & Aline Mosnier (CIFOR) - FTA FP3; Research collaboration CIFOR & International Institute for Applied Systems Analysis (IIASA); Reference document: Mosnier et al. (2017) Assessing the potential impacts of zero deforestation commitments and a moratorium on large-scale oil palm plantation in Indonesia. Info Brief No. 177. Bogor: CIFOR

Pablo Pacheco & Sunil Sharma (CIFOR) - FTA FP3; Governing Oil Palm Landscapes for Sustainability (GOLS) project; Reference document: Sharma et al. (2017). Assessing impacts on ecosystem services under various plausible oil palm expansion scenarios in Central Kalimantan, Indonesia. Info Brief No. 176. Bogor: CIFOR

Pablo Pacheco (CIFOR) & Keith Wiebe (IFPRI) - FTA FP3, PIM FP1; Reference document: Wiebe et al. (unpublished draft). Comment on "A Makeover for the World's Most Hated Crop" (Yan, W. (2017). Nature, 543, 306-208)

<sup>4</sup> Anne Terheggen (ICRAF) - PIM FP1, FTA FP3; Reference document: Terheggen (2018 in print). Ethiopia's Potential Role in the Global Avocado Market. Nairobi: World Agroforestry Centre (ICRAF)

Anne Terheggen (ICRAF) - PIM FP1, FTA FP3; Reference document: Kaplinsky et al. (2011). China as a Final Market: The Gabon Timber and Thai Cassava Value Chains. World Development, 39(7), 1177-1190

<sup>5</sup> On going. See

[http://www.iiasa.ac.at/web/home/research/researchPrograms/EcosystemsServicesandManagement/LU\\_foresight\\_modeling.html](http://www.iiasa.ac.at/web/home/research/researchPrograms/EcosystemsServicesandManagement/LU_foresight_modeling.html)

<sup>6</sup> Peter Minang & Sonya Dewi (ICRAF) - FTA FP4; Land-use Planning for Multiple Environmental Services (LUMENS); Reference document: Dewi et al. (2015). Negotiation support tools to enhance multifunctioning landscapes in Minang et al. (Eds.), Climate Smart Landscapes: Multifunctionality in Practice. Nairobi: World Agroforestry Centre; Note: spatially explicit, semi-agent-based model based on Quantum-GIS, FragStat and R environment

- estimating impacts of potential changes in practices on livelihoods<sup>7</sup>
- 4) Needs and potential objectives of foresight studies in FTA.

As recalled in the phase 2 proposal, foresight can help prioritize research questions.

It is also a research question in itself, often necessary to identify options for progress.

Foresight exercises can also be used as boundary objects, providing opportunities to work with partners and stakeholders, to construct a common understanding and vision.

Foresight in FTA could thus have the following objectives:

- Ensure that forests, trees and agroforestry are properly accounted for in global foresight studies
- Enable the identification of possible future for land use and forests, trees and agroforestry that take into account the various drivers of change that apply to them
- Use these results to prioritize research needs
- Provide a global framework (global futures and methodologies) that could serve for sectoral and local studies, and for the set of FTA bilateral projects as a way of increasing the consistency of the underlying set of scenarios and hypotheses.

5) Proposals for a way forward

What could we do?

- Use of common scenarios (ideally constructed in collaboration) ISPC
- If we have different scenarios, there is a need for consistency between scenarios that may differ: example: energy, food, forests...
- Common methods: organize exchanges. Sharing common hypothesis (from outside the different projects). Need for more consistent approaches between projects/methods, tools (true within FTA but also with other CRPs).
- Use shared common projects between CRPs (examples banana and deforestation RTB/FTA), Or Burkina Faso example from CCAFS.

FTA could engage in Foresight exercises in five different ways (in addition to what is already being done in specific projects) :

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Glenn Hyman (CIAT) - FTA FP5; Science and Nature for People Partnership (SNAPP) project; Reference websites: <https://snapppartnership.net/teams/land-use-change-in-the-orinoquia> and <http://blog.ciat.cgiar.org/can-development-and-conservation-go-hand-in-hand-in-colombias-orinoco-region/>

Christopher Martius (CIFOR) & Glenn Hyman (CIAT) - FTA FP5; BioCarbon Fund project; Reference documents: Reports (not available - currently being reviewed)

<sup>7</sup> FP2 on going

- use results of past and on-going foresight exercises for its own research. It could take the form of a specific synthesis.
- participate to on-going exercises to ensure that forests, trees and agroforestry are better integrated. Provide data and information.
- construct or contribute to a more global specific forests, trees and agroforestry related foresight, by itself or in collaboration with other.
- provide a global framework (common references, methodologies) to be used for sectoral and local foresight.
- conduct a place based foresight exercise, for instance in a Sentinel Landscape
- strengthen some of its on-going work, for instance the work done with IIASA.

Original global foresight exercises require considerable resources, with specific technical competencies, that are currently not present in FTA. It also requires important data sets. Such considerations call for a collaboration with on-going initiatives rather than building an autonomous one.

Question is with whom to partner, and how.

## Annex 1: Frame of reference for state of foresight works in FPs.

A simple frame of reference to map FTA works is to articulate them by (a) scales: Global studies, National studies, sub-national studies, local/community level studies, and (b) sectors, with works either in a sector, and/or a sectoral study contributing to/using another sector or economy-wide studies another, and (c) nature of variable being investigated (land-use, production and consumption variable, economic fluxes/revenues/costs/investments..).

Each of the type of work further uses /mobilises different kinds of approaches: modelling, descriptive works/narratives, participatory approaches, scenario building, etc.

Descriptive works: BAU with possible futures/scenarios.

	Economy wide		Forest sector		Food/Energy sectors
global		←		←	
		→		→	
regional		←		←	
		→		→	
national		←		←	
		→		→	
local		←		←	
		→		→	

Another one is to relate them to three types of questions:

- Projection BAU of a situation or parameter
- Exploration of possible futures
- Exploration of consequences of a change, or of the evolution of a determined parameter on other parameters or a situation (economic, social, landscape), at the same, broader or lower level.

All these studies use either quantitative methods and models, or qualitative methods and participatory approaches, or a combination of those.

## **Annex 2: On going foresight initiatives at global and regional levels that may be of interest for FTA**

### **In the CGIAR**

the ISPC is conducting a comprehensive foresight exercise to inform the strategy of the CGIAR, and to provide context and emerging insights as a basis for system level prioritization of research. Building on its long-term work on Strategy and Trends, the ISPC has initiated an independent foresight assessment in 2017, starting with a brainstorming workshop (April 2017, Naples-Italy)<sup>1</sup>, with a group of international experts and strategic thinkers on how the futures may look like around grand challenges, global trends and likely disruptions on food and nutrition security (horizon 2050); and how the world is prepared to address them to reach the SDGs and beyond. The outcomes of the workshop will be edited for publication in a book on “Global Agri-Food Systems to 2050– Threats and Opportunities” (to be published in 2018).

Foresight work is currently carried out in various Centers and Research Programs (e.g. Global Futures and Strategic Foresight, which is led by IFPRI but includes all 15 Centers and links with most CRPs) with a diversity of approaches, and at disparate scales.

The ISPC workshop on foresight (Aberdeen, May 2018) enabled to take stock of the current state of ongoing foresight work within the different CRPs. It enabled to construct a shared understanding on what foresight is (different approaches and related tools, beyond the IMPACT model, used at different levels), how it can be useful internally and externally, as well as on capacity needs (gaps, CGIAR comparative advantages) and what could be a system wide framework and approach.

The workshop concluded with the following key messages for the CGIAR SC:

1. There is a perfect storm of global threats and challenges to agri-food systems, that was listed.
2. There are several comparative advantages of the CGIAR for foresight work, an important one of them is that we have our feet on the ground
3. Foresight is necessary for the work of the CGIAR for a range of reasons
4. There is a need for a deeper understanding of the foresight uses and needs by our stakeholders
5. Developing foresight work requires strong collaboration and partnerships inside and outside CGIAR
6. There is a need for a common methodological framework that accommodates various approaches
7. The CGIAR needs a system wide systematic process and structure on foresight.
8. The CGIAR need to leverage or redirect resources at system level to fund coordinated work. Several avenues for funding were proposed (including linked to country-level work...)

The workshop concluded that the CGIAR could launch a foresight process (rather than a foresight platform) that would contribute to different objectives. Modalities for such a process remain to be determined.

The ISPC will prepare a paper for SC7 (November 2018), based on the results of the workshop, towards a framework for organizing foresight works across the CGIAR and with partners. In addition, ISPC's role to advise the SC on foresight related issues will be specified.

The ISPC will organize a one-day event on Monday 12 November 2018, back to back to SC7 in Seattle to sensitize the SC and SIMEC on foresight related issues and the importance of foresight works both for ongoing CGIAR research and to frame strategic research programming, as well as for CGIAR's impact pathways with development actors and a range of stakeholders at global and national levels.

It could be linked to the country collaboration initiatives for country-level coordinated foresight work with stakeholders.

The issue of foresight was discussed in the science leaders meeting, and a think piece on foresight, based on the results of the ISPC Aberdeen workshop, is expected to be prepared by the SMO for the next CGIAR SMB and SC meetings.

## **FAO**

The Global perspectives work of FAO has been reorganized in the last 3 years. First work was the 2014 "Achieving zero hunger" publication. Then the 2016 "Trends and challenges". Now FAO will be publishing early June the "Future of food and agriculture, alternative pathways towards 2050". The FAO study will soon be released. Country data will also be released. For the first time FAO will publish 3 scenarios and not just one: BAU, stratified societies, moving towards sustainability. Business as usual is quite aligned to FAO-OECD outlook. The scenarios are based on the challenges we face, starting from possible futures, then designing possible pathways to attain them. The main focus was agriculture as livestock, crops and fisheries. Land use was considered mainly as availability of land. Until now forests have not entered the picture in a prominent way. Maybe in the next assessment there could be more on forestry. FAO mentions an exercise started on livestock in Africa with ILRI, where the issue of land use is prominent. If they rely on pasture for the increase of production where will it come from? Feed needs, feed mix, derive use of land, surface. Then deal with trade-offs with crops and forests.

FAO has not dealt in the assessment with mitigation of climate change in forests. Issue of cc is prominent in Futures of agriculture, each scenario is associated to an RCP. Agroforestry mentioned, but not developed. That report opens pathways.

## **APFOS III**

The third Asia-Pacific Forestry Sector Outlook Study (APFSOS III) is to be published in 2019, and will look into 2030. It follows the 2 first outlooks APFSOS I published in 1998 and APFSOS II published in 2010.

APFSOS III aims at providing a picture of emerging opportunities and challenges for forestry in Asia and the Pacific to 2030 and beyond, laying out a foundation for long-term strategic planning by decision-makers including governments, investors, industries, international organizations and civil society organizations.

Given the timeframe (2030) of the outlook, it was decided that it should be inscribed in the perspective of the SDGs and the NDCs. This makes the outlook quite special given the existence of “normative” or “aspirational” targets (2030 SDGs). The outlook could show what catalytic actions countries and stakeholders could take for forestry to fully play its role towards the countries’ goals.

It is an FAO product, with the contribution of partner organizations, represented in the advisory committee. FTA Director represents CIFOR in the advisory committee. The 2<sup>nd</sup> meeting of the advisory committee may be in CIFOR on the 14<sup>th</sup> of November. Partners of FTA may contribute to the preparation of the report, in particular on **trees outside forests** (esp. ICRAF), on **social forestry**, and on **environmental services of forests** (the two last esp. CIFOR). But no budget is foreseen by FAO, so it won’t be possible to allocate travel budget or staff time, and contributions would be made electronically and on a voluntary basis.

<http://www.fao.org/asiapacific/resources/forestry-outlook/en/>

## **Foresight4Food**

The objective of the Foresight4Food Initiative is to support enhanced foresight and scenario analysis for global food systems. Foresight4Food aims to provide a mechanism for better analysis and synthesis of key trends and possible futures in global food systems and to support more informed and strategic dialogue between the private sector, government, science and civil society.

A scoping meeting was organized in Oxford in March 2017. A follow up workshop was held in May 2018 in Montpellier, a Foresight4Food website is being developed to support a community of practice and a Foresight4Food Science and Policy Dialogue is anticipated for late 2018 or early 2019.

Five key activity areas envisaged for F4F:

1. Communities of practice for food system foresight users and providers
2. Synthesis and analysis of existing foresight work
3. Foresight resource portal, dash board and communication materials
4. Bridging hub for linking foresight users and providers to support global, regional and national/local foresight and dialogue processes
5. Identifying and brokering new foresight work on gaps and emerging issues

The initiative is currently led, following the first meeting in Oxford last year, by two co-chairs: Jimmy Benton, from the University of Leeds and Patrick Caron, the chair of the HLPE, with a Steering Committee from the initial meeting in Oxford, including Rachid Serraj from the ISPC, as well as from ACIAR, the Gates foundation, GFAR, CIRAD, and operational work being done by the initial support unit for the initiative hosted by the Food Systems Group of the Environmental Change Institute of Oxford, led by Jim Woodhill.

The initiative is planning an event in 2020, probably linked to a major food or nutrition event.

<https://www.foresight4food.net/>

## **IIASA**

### The Forests, Agriculture, Biodiversity, Land, and Energy Project: Pathways for Sustainable Land Use

Initiated by IIASA and the UN Sustainable Development Solutions Network (SDSN) and implemented with partners around the world under the umbrella of The World in 2050 Initiative, Forests, Agriculture, Biodiversity, Land, and Energy (FABLE) project aims to address the following challenges:

- At the global level, the lack of a shared understanding of how to meet the integrated objectives of preserving biodiversity, achieving net negative emissions from land use, and producing sufficient nutritious food through sustainable agriculture. Strong global models exist for each of these issues, but they need to be better integrated to ensure consistency with the Sustainable Development Goals and planetary boundaries.
- At the national level, the lack of a robust and comprehensive long-term pathways towards sustainable land-use that address the five dimensions of food production, greenhouse gas emissions, biodiversity and forest conservation, freshwater availability, and air and water pollution. Most countries, including many highly bio-diverse countries, currently lack adequate analytical modeling tools that are rigorous and integrated across the various knowledge domains (agronomy, hydrology, ecology, climatology, and nutrition).

[www.iiasa.ac.at/web/home/research/researchPrograms/EcosystemsServicesandManagement/vent/170403-fable.html](http://www.iiasa.ac.at/web/home/research/researchPrograms/EcosystemsServicesandManagement/vent/170403-fable.html)

### Integrated Solutions for Water, Energy, and Land (ISWEL)

The International Institute for Applied Systems Analysis (IIASA) in partnership with the Global Environment Facility (GEF), and the United Nations Industrial Development Organization (UNIDO) is leading the Integrated Solutions for Water, Energy, and Land (ISWEL) project. The main project goal is to explore cost-effective solutions to jointly meet water, land and energy

demands under different development and climate pathways. The project takes a global approach, but it also zooms into two large transboundary basin facing multiple developments and environmental challenges: The Zambezi and the Indus.

To achieve its goal, ISWEL is structured around three main components. The first component deals with the development of an integrated nexus assessment framework suitable for rigorous analysis of potential interactions, synergies, and trade-offs between water, energy and land resources and under different future climate and development scenarios. This framework will integrate and link four different IIASA open source models: ECHO, CWAT, MESSAGE, and GLOBIOM, which will be upgraded to better represent the linkages between the energy-, hydro- and agro-economic systems at the global and basin level.

The second component is focused on the assessment of nexus solutions across scales. To this end, the integrated nexus assessment framework will be used to identify multi-sectorial scarcity hotspots and assess the synergies and trade-offs among sectors and countries. This information will be used for distilling portfolios of integrated solutions for water, energy, and land under different climate and socio-economic development pathways, at the global and for the two basins.

Engaging with stakeholders is one of the distinct features of ISWEL to ensure that project outcomes are useful for decision-making and contribute to the development of nexus research and management capacities. Within this component, a number of workshops and consultations are planned to engage with a wide number of actors from different sectors and riparian countries, to identify main challenges in relation to water, energy, and land; providing feedback and data for improving tool development and effectiveness, support the co-development of policy scenarios, and how these might evolve under different development and climate pathways. Lastly, efforts within the component will be also allocated to support the development of nexus capacities within the basins. This will be done through a number of activities, including the sponsoring of research grants for doctorate students from the riparian countries, and the development of an online tool that will allow stakeholders to explore water, energy and land inter-linkages and the synergies and trade-offs behind sectorial versus joint decisions.

#### Land use foresight modelling for Indonesia, Brazil and the Congo Basin

In this project, IIASA and CIFOR study the effects of Intended Nationally Determined Contributions (INDCs) and large-scale reforestation plans in Brazil, the Congo Basin and Indonesia as well as the contribution of the zero deforestation pledge by large scale palm oil companies in Indonesia, on the evolution of forest and other land cover, climate change mitigation, food security and international trade of palm oil, beef and soy.

[http://www.iiasa.ac.at/web/home/research/researchPrograms/EcosystemsServicesandManagement/LU\\_foresight\\_modeling.html](http://www.iiasa.ac.at/web/home/research/researchPrograms/EcosystemsServicesandManagement/LU_foresight_modeling.html)