

1. *Title/Heading*

Identifying strategic options for nature-based solutions in the land-use space

Perspectives on opportunities for collaboration with the Food Agriculture Biodiversity Land and Energy (FABLE) Consortium

2. *Context and rationale*

Deep transformations of human systems are necessary to sustainably secure basic human needs and advance human welfare, while managing the risks from global environmental change. It will require reconciling multiple social, economic and environmental objectives, based on a robust understanding of the implications of strategic decisions about development pathways.

To simultaneously progress towards the Sustainable Development Goals (SDGs) and the objectives of the Paris Agreement, the sustainable transformation of food and land-use systems represents a key concern. Nature based solutions encapsulate a broad range of ecosystem-based actions, which contribute to climate change mitigation and adaptation and the protection of biodiversity and environmental services. Furthermore, nature-based solutions should account for broader societal contexts and needs. Hence, nature-based solutions can help to address multiple objectives, which operate in the land-use space. To effectively harness the potential of nature-based solutions, it is important that actions are embedded in a strategic decision-making context, which facilitates the transition from individual efforts to broad level scale-up and transformation.

3. *An overview of the contribution*

Within the context of the UN Secretary-General's Climate Action Summit and the focus of establishing a coalition for nature-based solutions, we would like to introduce the Food Agriculture Biodiversity Land and Energy (FABLE) Consortium as a model-aided decision-support environment for sustainable development pathways in the land-use space. Through its focus on systems-based approaches and integrated assessments, FABLE can help advancing the understanding how strategic decisions concerned with scaling up nature-based solutions can benefit the overall transformation of food and land-use systems towards sustainability. This will improve insights into interactions between regional and country scale proposals with global scale concerns.

Co-led by the International Institute of Applied Systems Analysis (IIASA) and the Sustainable Development Solutions Network (SDSN), FABLE brings together knowledge institutions from developed and developing countries to advance the analytical capacity for strategic land-use planning. Activity lines are focused on i) cross-sectoral capacity development and sharing of best practice for data management and modeling of land-use interactions (including simplified models of land-use and food systems for stakeholder engagement; integration of geospatially explicit biophysical and socioeconomic data for integrated assessment modeling; and technology roundtables for sharing advances in technology applications which influence modeling assumptions), ii) development of national pathways, which are also cognizant of globally agreed targets and account for the implications of trade assumptions; and iii) analytical support to national and international policy processes.

Currently focus is particularly placed on establishing and expanding analytical capacities of countries for integrated assessments. FABLE takes a long-term time horizon to explore the implications of

strategic decisions. The aim is to delineate the solution space for sustainable development pathways, which realize national development aspirations while accounting also for globally agreed targets. Informed by the 2030 Agenda for Sustainable Development and the Paris Agreement, FABLE country teams identify collective targets for sustainable food and land-use systems. In addition to a focus on 2030, global targets are being explored for 2050. This allows FABLE to gain insights into the scale of transformation, which is necessary to attain sustainable development trajectories for the long-term. Guided by these collective targets and taking also into account also national development aspirations, country teams then set out to frame national development pathways until the middle of century. For this purpose, FABLE provides a model-aided environment for scenario development, integrated analysis and stakeholder dialogue, allowing for an iterative process, which enables countries to make joint progress towards their collectively agreed targets.

By advancing systems-based approaches to nature-based solutions, FABLE can help with identifying and managing synergies and trade-offs between multiple socioeconomic and environmental objectives in the land-use space, allowing for the integration of nature-based solutions in strategic scenario design and development pathway planning.

4. How the contribution leverages living natural systems as a solution to avert climate change?

Our contribution provides an underlying analytical framework for systematically assessing the potential of nature-based solutions in mitigating climate change, while supporting broader scale transformations towards sustainable development, as framed by the Sustainable Development Goals.

5. How might the contribution support both climate, mitigation and adaptation as well as other important co-benefits and social, economic and environmental outcomes in coming years. They may include:

- *Impact on realization of the 2030 Agenda for Sustainable Development (in particular SDGs 1,2,6,12,13,14,15,16)*

Advancing the understanding of interactions between SDGs and implications of long-term strategic decisions is central to the approach of FABLE. Covering the multiple dimensions of food and land-use systems, FABLE works with country partners on identifying development pathways, which deliver on satisfying basic human needs and advancing human welfare (i.e. SDGs 1, 2 and 6), while sustainably managing climate, marine and terrestrial systems (SDGs 13-15).

In modeling the interactions between multiple socioeconomic and environmental targets relevant to food and land-use systems, FABLE explores the effectiveness of supply and demand-based measures, relevant to SDG 12. Links to other SDGs are also established, such as the role of diets in promoting good health (SDG 3), while also addressing malnutrition (SDG 2) and reducing pressures on the environment (SDG13-15). SDG 16 with its focus on peace, justice and strong institutions is recognized as an important prerequisite.

By establishing a collaborative environment for modeling teams across countries, FABLE also furthers the establishment of partnerships (SDG17) for scientifically informed decision-support on collectively advancing the SDGs. Embedding nature-based solutions within the systems based analytical framework of FABLE allows for strategic decisions on environmental protection or renaturation initiatives, which can help mitigate climate change and reduce biodiversity loss, while minimizing trade-offs with food security and other human development targets.

- *Food security*

Food security is one of the key dimensions of FABLE. Country partners explore development pathways which provide food security and address malnutrition, i.e. delivering healthy diets with sufficient daily per capita caloric intake. By also addressing overconsumption and considering the implications of changes in diets, FABLE can provide systematic insights how demands on land for food can be reconciled with demands for land to maintain and restore ecosystem services essential for climate change mitigation and conservation of biodiversity.

- *Minimising species extinction and ecological losses and fostering an increase of biodiversity.*

Finding ways to halt and reverse biodiversity loss is another critical focus of FABLE. The Consortium is collectively exploring the potential options for protecting land, increasing forest cover and other interventions suited for meeting biodiversity and climate targets of the SDGs and Paris Agreement in an integrated manner, while also ensuring food security and agricultural productivity. The effect of efficient agricultural production and changes in diets on reducing competing land-use pressures and meeting global biodiversity targets is part of the integrated assessment framework employed by FABLE.

6. *Which countries and organisations are involved in the contribution?*

FABLE is a network of leading knowledge institutions from 20 developed and developing countries. The FABLE Secretariat is jointly hosted by SDSN and IIASA, working in close collaboration with the EAT.

7. *How have stakeholders (for example local communities, youth and indigenous peoples, where applicable) been consulted in developing the contribution?*

The FABLE Consortium is concerned with developing collective solutions for sustainable development pathways. Country teams propose national level solutions which are then collectively assessed and discussed in the context of achieving globally agreed targets. Stakeholder dialogue and engagement is an integral part of FABLE's effort.

8. *Where can the contribution be put into action?*

The FABLE Consortium seeks to guide strategic action. This includes strengthening the analytical capacity of country partners to carry out integrated, model aided analysis to inform strategic decisions about development paths in the land-use space. By relating national development pathways also to global sustainability contexts, FABLE can also provide feed-back on the international ambition needed to implement nature-based solutions, if the transformation towards sustainable food and land-use systems is to be achieved.

9. *How the contribution will be delivered? How will different stakeholders be engaged in its implementation? What are the potential transformational impacts?*

The key contribution of FABLE is to provide a quantitative and integrated analytical framework for assessing transformation needs of land-use sectors and the role of individual countries to achieve sustainable food and land-use systems. As aforementioned, FABLE works with knowledge institutions from developed and developing countries to capture country specific characteristics for modeling national development pathways, while also embedding the national modeling efforts into a global context, informed by the SDGs and Paris Agreement.

10. Is this initiative contributing to other Climate Action Summit workstreams (industry transition; energy transition; climate finance and carbon pricing; infrastructure, cities and local action; resilience and adaptation; youth and citizen mobilization; social and political drivers; mitigation strategy)?

The emphasis is placed on providing a cross-sectoral understanding of the implications of upscaling nature-based solutions for realizing development and environmental objectives. With its focus on analyzing land-use pathways within a multiple objectives' context, FABLE allows for exploring interactions of nature-based solutions with the mitigation strategy workstream and other dimensions of the Climate Action workstreams.

11. How does this contribution build upon examples of experience to date? How does the contribution link with different ongoing initiatives?

The energy sector has employed integrated assessment approaches for analyzing the effects of strategic decisions and accounting for cross-sectoral impacts. This has also informed analyses on the strategic transformations required to attain low carbon development trajectories. Similar comprehensive efforts have been lacking in the land-use space. The FABLE initiative draws on lessons derived from deep decarbonizations pathways project (DDPP) and similar initiatives and transfers these lessons to strategic assessments in the land-use context. FABLE also draws on the long-standing expertise of IIASA to apply integrated assessment methods to identify optimal solutions to complex development problems. FABLE is also part of the Food and Land-Use Coalition, a multi-stakeholder coalition focused on transforming food and land-use systems.

12. What are the mechanisms for funding (with specific emphasis on potential for partnerships)?

The FABLE Consortium receives programmatic funding from diverse funding entities to advance global and country specific analytical efforts. It provides a flexible environment for developing and growing collaborative partnerships.

13. What are the means of stewardship, metrics for monitoring?

FABLE seeks to provide an analytical environment for assessing development pathways in their capacity to deliver on global objectives, complemented by national targets. It could hence facilitate the understanding of how upscaling of nature-based solutions can contribute to advancing progress towards the SDGs and the Paris Agreement.

14. What is the communication strategy?

FABLE has a multipronged approach to communication. Results on sustainable development pathways will be published as technical reports and scientific journal articles. The global implications of the findings will be discussed at key international policy forums, while national level scale results will be disseminated through the engagement of country teams with key institutions and stakeholder groups. Through its link to the Food and Land-Use (FOLU) Coalition, FABLE can further draw on a network of 'FOLU-Ambassadors', a network of distinguished professionals and experts, who support high level policy dialogue and outreach.

15. What are the details of proponents (indicating the degree of commitment among the countries and organizations that are named).

The FABLE Consortium is open to knowledge institutions from developed and developing countries, who submit a written expression of interest. At present 18 country teams are engaged in the analytical activities and discourse of the Consortium.

Further Information

The 2019 FABLE Report is available at:

IIASA: <http://www.iiasa.ac.at/web/home/about/news/190725-fable-report-launch.html>

SDSN: <http://unsdsn.org/resources/publications/pathways-to-sustainable-land-use-and-food-systems/>

For interactive executive summary of the report, click [here](#).