



Submission to the UNFCCC ahead of the second Technical Dialogue of the Global Stocktake

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Executive Summary

This submission is made on behalf of the [Institute for Sustainable Development and International Relations](#) (IDDRI). IDDRI is an independent policy research institute and a multi-stakeholder dialogue platform who identifies the conditions and proposes tools to put sustainable development at the heart of international relations and public and private policies.

Submissions are also on behalf of the [Deep Decarbonisation Pathways Initiative](#) (DDP). The DDP initiative is a collaboration of in-country research teams, based in recognised and independent institutions, which aims to help governments identifying pathways to deep decarbonisation.

Objective

This submission presents a series of ideas and frameworks developed by IDDRI and its partners to be considered by Parties and Non-Party Stakeholders in the second Technical Dialogue of the Global Stocktake (GST), both concerning the structure of the GST and also its substance. It builds from the first submission, which can be found here: <https://unfccc.int/documents/461840>

We intend to supplement this submission with more specific data and recommendations for the last Technical Dialogue, depending on the needs articulated as an outcome of the previous ones.

Summary of Inputs

The inputs IDDRI is submitting to the second information collection of the Global Stocktake, are concerning (1) the form in which we suggest the GST process itself could be improved to enhance national climate action and international cooperation, and (2) specific substance topics that have been overlooked or less covered in the first submissions and Technical Dialogues.

The GTS process: How to organize the GST to enhance national climate action and international cooperation

In order to have a GST that leads to increased ambition and action, it should identify the international enablers necessary to implement systemic transformations. The participation of the policy-relevant players for the discussion is also key, as well as understanding their positions and interests. Here we suggest specific practical recommendations for the future iterations of the information collection and Technical Dialogue:

1. A first identification of key **systemic transformations and their international enablers** could be already done based on the information received in the first cycles of information collection and technical dialogues. These already identified key systemic transformations and their international enablers could be then **used to structure and organize the information collection and the synthesis reports** led by the Secretariat and the constituted bodies, which would provide more in-depth and actionable information to foster an informed conversation
2. The different discussions in the Technical Dialogue should continue to have the input of **scientists coming from the Global North and Global South**, so they are able to provide scientific evidence along the process. Furthermore, different **stakeholders working around the same systemic transformation should also be invited**, so they can help dive deeper into the global enablers and their barriers of each transformation.
3. To foster progress in the Technical Dialogues, they could be **organised around the systemic transformations and international enablers identified**. This would allow cross-cutting discussions closer to the countries' realities and their implementation, and help identify the actors and the conditions to unlock global enablers. This in-depth discussion will require that stakeholders go beyond their positions and prepared statements and engage in a constructive dialogue. For that, the **work of the facilitators of the Technical Dialogue is key: they should be nominated at least a month in advance, and required to coordinate beforehand to be able to extract the most of the discussions**. This pre-dialogue scoping could notably identify points of convergences and key points of divergence across transformations, so that the Technical Dialogues can crystallize the former and allow progress on the latter through a facilitated and well-prepared exchange.

Topics that need further attention in the GST:

- **Long-Term Adaptation Pathways**

Long-term adaptation pathways are the most promising approach to plan for ground-breaking decisions under deep uncertainty as they help to build a concrete and place-specific narrative allowing to contextualize individual options, bridge the gap between short- and long-term challenges, and identify priority interventions. They could empower governments and stakeholders to be able to plan for long-term response. To explore their impact, they could be incorporated in the Glasgow-Sharm-El-Sheik Working Program or call for an IPCC Special Report for the international community to support more internationally coordinated research on «solutions» and pathways.

- **Comprehensively assess what is needed to reach the Paris Agreement's collective mid-century net zero goal in keeping with ecosystem planetary boundaries**

Various elements in the Paris Agreement **provide a clear mandate for the Global Stocktake to assess Parties' collective progress towards the mid-century net zero goal towards 1.5°C, in the context of the biodiversity loss crisis.** Based on learnings from TD1 (especially discussions around cross-cutting Guiding Question #20¹ and mitigation questions), IDDRI recommends that a key focus for TD2 discussions be on how to reach the net-zero goal in a way that supports ecosystem integrity rather than further aggravating the biodiversity loss crisis and risk overstepping planetary boundaries. Specifically, five key topics for discussion are:

1. Underscore the critical importance of preserving existing natural carbon sinks, yet do not overpromise ecosystem restoration and natural carbon sinks' role towards net zero.
2. If discussing bioenergy, clearly address the controversies around carbon neutrality claims and 'underreported emissions', and the need for strict sustainability safeguards and thresholds.
3. Right-size the limited role that land-based carbon dioxide removal can play on Parties' collective road towards Net Zero emissions to 1.5°C.
4. Points 1-3 lead to the following conclusion: to collectively reach net zero emissions by mid-century towards the 1.5°C goal, protecting 'nature' must critically come *in addition to*, and in no case *instead of* the first priority of deep decarbonization and fossil fuel phase-out.
5. When discussion cross-cutting question 20 on ecosystems, link it fully to the mitigation Guiding Questions, especially question #4 and #5.1., and question #22.a on integrated approaches.

¹ Guiding Question 20: *"How are Parties recognizing the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, order to achieve the purpose and long-term goals of the Paris Agreement?"*

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How to organise the GST to enhance national climate action and international cooperation

The effective strengthening of national climate action and international cooperation – two primary objectives of the mitigation stream of the GST – requires acknowledging systemic transformations consistent with long-term global carbon neutrality, identifying concrete actions supporting them and promoting the coordinated adoption of these actions by a diversity of actors.

International discussions, such as those conducted under the GST, have a key role in helping align visions among key actors on these different dimensions, and unpack explicit and robust information to guide their decisions

IDDR's experience highlights that international discussions can deliver these outcomes if they follow two key principles:

- independent scientific evidence about systemic transformations and their international enablers is used as a benchmark throughout the discussions
- discussions are organised in a way that allows a constructive confrontation of (possibly diverging) positions and interests from a diversity of actors

The assessment of the first Information Collection and Technical Dialogue of the GST against these two guiding principles allows deriving targeted recommendations for coming iterations of the GST.

Benchmarking the discussions with scientific evidence on system transformations and their enablers

International discussions should be framed with scientific evidence on system transformations relevant to global carbon neutrality and their enablers. This scientific guiderail can help focus the exchanges on the search for concrete solutions truly aligned with the requirements of the final goal, including when they require structural changes from current trends.

Current national mitigation strategies are focusing most efforts on zero-emission technological transitions. While these transformations are necessary, they will not be sufficient to reach global carbon neutrality. The scientific community already warned that many other options, such as demand-side solutions should be taken into account (IPCC, 2022); and that technological change could not be seriously implemented without taking into account the system transitions in which it should take place (IPCC, 2018). Misconceptions still exist on the nature of national and systemic transformations required by global carbon neutrality.

For example, in the transport sector, the focus is often given to technological energy efficiency measures (SLOCAT, 2021) or the change of vehicle motorization and fuel supply, which are not sufficient at all to reach carbon neutrality. Without considering the transformations of the production and consumptions systems, we cannot achieve the deep emission reductions in freight decarbonisation (Waisman et al., 2021; Briand & Waisman, 2019).

Such national systemic transformations may depend on international enablers. This can be because these transformations are linked to changes in global conditions that depend on decisions of global actors (international public institutions and organizations, groups of other countries, multinational corporations, etc.). This can also be because these transformations require profound changes compared to current trends, for which cross-country benchmarking and lessons learnt can be a useful guide.

International discussions represent a unique opportunity to discuss these international enablers of national transformations necessary for net-zero, and help identify the most important opportunities for increasing climate ambition nationally to reach long term global climate targets.

To prepare well the adoption of concrete actions, such international discussions will require information on the socio-economic effects of the transformations and on the barriers to the scale up of action, given the key challenges and opportunities identified in the national analyses (Fazekas et al., 2022). This can notably lead to identify the possible actions that could be adopted by diverse actors in each country. The identification of changes in global conditions that could help overcome the barriers and support increases in climate ambition can also guide priorities of international cooperation. An effective identification of such barriers and enablers requires that the national analyses of the opportunities for accelerating climate actions identify short term policy implications of long-term transformations, and provide detailed information on the physical and economic transformations to enable solution- and policy-oriented dialogues. To ensure that these analyses adequately take into account national policy priorities and circumstances, and thereby provide nationally policy-relevant insights, it is important that the opportunities for increasing climate ambition are defined according to national circumstances, as opposed to global ones.

For example, the access to- and cost of international capital for renewable energy investments is a main barrier shared by many emerging- and developing countries, as again demonstrated in recent research². However, accelerating the pace of the roll-out of renewable energy infrastructure is a key domestic transformation for achieving deep decarbonisation for global carbon neutrality, seizing green growth

² https://ddpinitiative.org/wp-content/pdf/DDP_BIICS_CountryReport.pdf

opportunities and generating job opportunities. Therefore, the reduction in the cost of this capital is an international enabler of national transformations in these countries.

Organizing a constructive confrontation of (possibly diverging) positions and interests from a diversity of actors

International discussions should reflect the diversity of positions and interests of actors who have important levers in hand for the considered transformations. The confrontation of viewpoints can help identify points of convergences but also reveal the points of divergence and their underlying drivers, hence providing clear guide for decision-making by each actor and for priorities of cooperation between them.

Current international climate dialogues often focus on public policy perspectives and have difficulties to offer a fair and equal representation to national challenges in the global north and south (Beuermann, 2021). However, system transitions for global carbon neutrality require by definition the coordination of multiple decisions taken by countries, but also by regions, cities, companies, and citizens, and so on, in different interconnected worldwide regions (IPCC, 2022). In the same vein, discussing a specific transformation and related enablers requires gathering the relevant participants who could share specific domestic perspectives on implementation challenges and those who could act on the specific enablers. Gathering this diverse set of perspectives is therefore a necessary condition to ensure that all action levers and potential impacts, owned or experienced by the different actors, could be included. This is true for purely domestic stakeholder processes (Calfucoy et al, 2022). This is also true for international processes.

For example, revamping business value chains for global carbon neutrality will depend on national public policy actions related to industrial and trade policies, labour, investment and environmental regulations among others, but also on regional and international trade agreements (UNCTAD, 2020). Therefore, it requires a discussion which brings perspectives from different economic regions. In addition, this transformation will highly depend on other actors such as multinational enterprises and shippers, suppliers or logistics organisations³ (Harry-Villain, 2021). Other perspectives would also be key for this discussion, such as the buyers and consumers, the transport and logistics companies and workers' unions.

Beyond the identification and participation of the policy-relevant players to the discussion, the remaining challenge is to orchestrate a dialogue strategy which could produce insights for enhancing national climate action and international cooperation. Current climate dialogue approaches often underestimate the fact that the actors, even if convinced that climate change is a threat to them, will also defend other interests, which could be in opposition and block the sustainable transition.

³ <https://www.smartfreightcentre.org/en/sustainable-freight-buyers-alliance-1/>

Therefore, to deliver effective policy lessons, facilitators should be able to get a map of these interests and power relations to imagine a dynamic in the conversations.

Following the example highlighted above, different trade-offs could be identified between the different types of actors, and between players within the same group of actors, which could block or hinder the revamping of business value chains. For example, enterprises are looking for profit maximization when investing, which is often opposed to governments implementing higher social or environmental standards and also create a competition between them with different positions.

Aside from the relevant actors for the discussion, it is crucial to develop a strategy for the conversation, playing on the positions of different actors and relations among them, to help catalyse reactions, reveal threats and opportunities, and prepare the ground for effective and constructive dialogues around trade-offs embedded in different courses of actions and policy solutions that navigate the trade-offs while maximising benefits to actors involved.

Key lessons and recommendations for the Global Stocktake

In order to have a GST that leads to increased ambition and action, it should identify the international enablers necessary to implement systemic transformations. The participation of the policy-relevant players for the discussion is also key, as well as understanding their positions and interests. Here we suggest specific practical recommendations for the future iterations of the information collection and Technical Dialogue:

1. A first identification of key systemic transformations and their international enablers could be already done based on the information received in the first cycles of information collection and technical dialogues. These already identified key systemic transformations and their international enablers could be then used to structure and organize the information collection and the synthesis reports led by the Secretariat and the constituted bodies, which would provide more in-depth and actionable information to foster an informed conversation
2. The different discussions in the Technical Dialogue should continue to have the input of scientists coming from the Global North and Global South, so they are able to provide scientific evidence along the process. Furthermore, different stakeholders working around the same systemic transformation should also be invited, so they can help dive deeper into the international enablers and their barriers of each transformation. Therefore, the information collection should be seen as a source of stakeholder-oriented and national perspectives to identify the operational players and initiatives who could bring and confront views about the international enablers.
3. To foster progress in the Technical Dialogues, they could be organised around the systemic transformations and international enablers identified. This would allow

cross-cutting discussions closer to the countries' realities and their implementation, and help identify the actors and the conditions to unlock international enablers. This in-depth discussion will require that stakeholders go beyond their positions and prepared statements and engage in a constructive dialogue. For that, the work of the facilitators of the Technical Dialogue is key: they should be nominated at least a month in advance, and required to coordinate beforehand to be able to extract the most of the discussions. This pre-dialogue scoping could notably identify points of convergences and key points of divergence across transformations, so that the Technical Dialogues can crystallize the former and allow progress on the latter through a facilitated and well-prepared exchange.

Resources:

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Calfucoy, P, Torres Gunfaus, M., Fazekas, A. Adrien Vogt-Schilb, A. (2022). Long - Term Strategies for Decarbonization in Latin America: Learnings from Actor - Based Insights into the Drafting Process. IDB WORKING PAPER SERIES N°1361, available at: <https://publications.iadb.org/publications/english/document/Long-Term-Strategies-for-Decarbonization-in-Latin-America-Learnings-from-Actor-Based-Insights-into-the-Drafting-Process.pdf>.

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of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001.

Harry-Villain, L., Briand, Y., Waisman, H., Major, M., Castillo, L., Companies and carbon neutrality, a story of systemic transformations and cooperation: Illustration on the freight transport sector, Iddri, Note, November 2021.

SLOCAT, (2021). Climate Strategies for Transport: An analysis of Nationally Determined Contributions and Long-Term Strategies

UNCTAD, 2020. World Investment Report 2020, International production beyond the pandemic

Waisman H., Torres Gunfaus M., Pérez Català A., Svensson J., Bataille C., Briand Y., Aldana R., Anggreni L., Angulo-Paniagua J., Argyriou M., Benavides C., Bergamaschi L., Berghmans N., Boer R., Buira D., Bukowski M., Calderón W., D'Agosto M., de León F., Deprez A., Díaz M., Dorina A., Dubeux C., Fall S., Fei T., Filcak R., Foerster A., Garg A., Goes G. ., Gonçalves D., Healy C., Hosek E., J.-Vinois A., Kobyłka K., La Rovere E., Leonardi M., Levai D., Major M., Malos A., Maurtua Konstantinidis E., McCall B., Montedonico M., Mosnier A., Nogueira E., Nyiro F., Okereke C., P.-Nguyen V., Palma R., Peterson E., Potashnikov V., Predassi J R., Pye S., Quirós-Tortós J., Rossita A., Safonov G., Safonov M., Sanz Sánchez M. J., Sarr S., Sawyer D., Schaffhauser T., Siagian U., Stetsenko A., Sudharmma Vishwanathan S., Tamura K., Torres R., Trollip H., Valenzuela M. J., Walter M., Watson J., Wetmańska Z., Wills W., Yun J., Zevallos P. (2021). Climate ambition beyond emission numbers: taking stock of progress by looking inside countries and sectors. Deep Decarbonization Pathways (DDP) Initiative-IDDRI. Paris.

Adaptation pathways

The acceleration and irreversibility of climate change over the 21st century raises concerns about the future habitability of many settlements around the world (e.g. low-lying coastal systems) and the shrinking of the solution space for adaptation (Haasnoot et al. 2021). How —and how fast— societies will anticipate such high-end risks raises important questions at the science-policy interface: how to raise awareness about climate-related changes (e.g. sea-level rise, permafrost thaw) happening faster than expected? And **how to empower governments and stakeholders to be able to plan for long-term response?** Long-term anticipation of climate threats raises challenges relating to political willingness, societal acceptability, long-term affordability, land-tenure and socioeconomic issues, etc.; and could lead to maladaptation if decisions taken now are too short-sighted.

Transcending these barriers calls for moving away from targeting one single option or a set of individual options, to sequencing diverse options over time according to their synergies and trade-offs. **Long-term adaptation pathways** are the most promising approach to plan for ground-breaking decisions under deep uncertainty as they help to build a concrete and place-specific narrative allowing to contextualize individual options, bridge the gap between short- and long-term challenges, and identify priority interventions. Building adaptation pathways in turn calls for understanding the potential effectiveness of a wide range of adaptation measures over time; the synergies and tradeoffs between these options; the anthropogenic tipping points that will, in addition to environmental and climatic tipping points, require decision shifts; and the drivers of decision shifts. Addressing such challenges could be seen as a critical pillar for adaptation globally, especially to help identify priority areas of action on adaptation and, that way, help refine the definition and ambition of the Global Goal on Adaptation.

However, to date, the international discussion does not refer to the adaptation pathway approach. Two areas of progress could be:

- For the Glasgow-Sharm-El-Sheik Working program to answer the following questions in view of the GST: **what do we know about countries trajectories of adaptation for the next decades? Would this help identify shared priorities of action as well as key stapes towards collective ambition on adaptation?**

- **For the international community to support** more internationally coordinated research on « solutions » and pathways, for example through calling for an IPCC Special Report on “Evidence of and enabling conditions for effective climate adaptation across scales” (including adaptation pathways) within the future Seventh Assessment Cycle (AR7) (Magnan et al. 2022).

Resources:

- Haasnoot et al. 2021: <https://www.science.org/doi/10.1126/science.abi6594>
- Magnan et al. 2022: <https://www.science.org/doi/10.1126/science.abq0737>

Comprehensively assess what is needed to reach the Paris Agreement's collective mid-century net zero goal in keeping with ecosystem planetary boundaries

1) Approaches to assessing in GST ecosystem integrity and reaching the Paris Agreement's collective mid-century net zero goal

Various elements in the Paris Agreement – *inter alia* Article 14.1's focus on using “best available science” and Art. 4.1's focus on reaching the collective net zero goal “in the context of sustainable development”[1] – **provide a clear mandate for the Global Stocktake to assess Parties' collective progress towards the mid-century net zero goal towards 1.5°C, in the context of the biodiversity loss crisis.** Indeed, scientists have repeatedly reminded how both the climate and biodiversity crises are deeply intertwined together, and with consequences for other SDGs; therefore underscoring the need to address them both in tandem if we are to reach ambitious outcomes in each (IPCC-IPBES Co-Sponsored Workshop Report's (CSWR), 2021).

Crossing the best available climate and biodiversity science, IDDRI in 2019 already argued that “climate ambition should [...] be redefined as limiting temperature rise to 1.5°C through emission reduction pathways that are biodiversity and food security compatible” (Deprez et al., 2019). We also concluded the Global Stocktake is “a key moment to integrate biodiversity into global climate accountability towards reaching carbon neutrality and long-term collective climate goal,” and “to explicitly question the validity of 1.5°C or 2°C emission pathways that compromise the attainment of global biodiversity goals and other SDGs (e.g., SDG 2 ‘Zero Hunger’)” (Deprez et al., 2021).

Therefore, the inclusion of cross-cutting question Guiding Question #20 – “*How are Parties recognizing the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, order to achieve the purpose and long-term goals of the Paris Agreement?*” – into the TD1 discussions is welcome. However, we observed that: (i) Comments on the role of ecosystems were often general, and some mitigations measures were promoted (e.g. bioenergy) without proper mention to the necessary safeguards to ensure they do not undermine biodiversity and ecosystem conservation, (ii) a siloed approach predominated: few comments fully noted what ensuring ecosystem integrity implies for the overall mitigation action required to reach collective net zero[2] – i.e. the need for ecosystem conservation AND deep decarbonization (rather than *instead of*).

2) IDDRI Recommendations for an integrated approach in TD2 for assessing the role of ecosystems in reaching the PA goals and implications for mitigation action towards the 1.5°C mid-century net zero goal.

Based on learnings from TD1 (especially discussions on Question #20 and mitigation questions), IDDRI recommends that a key focus for TD2 discussions be on how to reach the net-zero goal in a way that supports ecosystem integrity rather than further aggravating the biodiversity loss crisis and risk overstepping planetary boundaries. This specifically means focusing on the following five key elements:

1. Underscore the critical importance of preserving existing carbon sinks and ecosystem integrity (rather than keep depleting them, e.g. through continued deforestation), yet do not overpromise the additional mitigation role ecosystem restoration and 'natural carbon sinks' can play towards net zero.

Preserving existing natural forests and ecosystems is essential for addressing climate change, so as to avoid further releasing into the atmosphere the vast carbon stocks they hold (Dooley et al. 2022). A lot of focus in recent years has also gone to the potential additional role of sinks that restoring 'nature' can play. Yet recent studies have been increasingly cautious about 'right-sizing' the realistic role that the 'natural carbon sinks' – through measures such as reforestation, forest management and soil carbon sequestration – can play on the path to reaching net zero emissions by mid-century (and net-negative thereafter) in order to achieve and maintain the 1.5°C goal. Nolan et al. (2021) note that while previous studies suggested these measures could help remove up to 1,200 GT/CO₂, when accounting for social and governance implementation challenges and environmental and sustainability constraints, a more realistic assessment is 100-200 GT/CO₂ removal. In turn, Dooley et al. (2022) note that carbon removals from restoring ecosystems (e.g. forests and mangroves) can be neither scaled up “quickly enough to noticeably reduce peak global temperatures,” nor too extensively due to competing land uses – therefore concluding they can by no means substitute for deep emission reductions and fossil fuel phase-out.

2. If discussing bioenergy, clearly address the controversies around carbon neutrality claims, and the need for implementing strict sustainability safeguards and thresholds.

While in national policies bioenergy is often considered as a 'carbon neutral' source of energy, the IPCC AR6 WGIII acknowledges that "bioenergy carbon neutrality is debated and depends on factors such as the source of biomass, conversion pathways and energy used for production and transport of biomass, and land use changes, as well as assumed analysis boundary and considered timescale" (IPCC, AR6 WGIII, CH 6). Scientists have also repeatedly expressed concerns that current IPCC accounting rules for bioenergy – in which the emissions from combustion are accounted for in AFOLU inventories of the country in which the biomass is harvested, rather than the energy section of GHG inventories of the country in which biomass is combusted – can lead to problematic interpretations of carbon neutrality claims, Pulles et al. (2022), potentially leading to misaligned incentives. Pulles et

al. (2022) for example provides a detailed proposal for how to improve IPCC GHG inventory guidelines for bioenergy to help address some concerns.

Scientists also stress the importance of ensuring strict sustainability safeguards and safeguards on bioenergy. The IPCC-IPBES CSWR assessed that in order not to compromise food security nor undermine biodiversity, the sustainable deployment potential of bioenergy (with or without CCS) is of 1-2.5GT/CO₂/yr (50-90 EJ – versus 30 EJ today (IPCC WGIII, Ch.7)). Concerns on biodiversity particularly revolve on the fact that many of the best bioenergy planting areas are estimated to be based in biodiversity hotspots (Santangeli et al, 2016), with areas of Central and South America, Africa, and South East Asia most at risk (Hoff et al, 2018). As regards to the specific case of wood-based biomass, [over 500 scientists](#) have also expressed concern to Heads of State that replacing burning of fossil fuel (namely coal) with burning of trees risks severely undermining climate and biodiversity goals, and should therefore be avoided.

3. Acknowledge the significantly limited role that land-based carbon dioxide removal can play on Parties' collective road towards Net Zero emissions to 1.5°C.

Preserving ecosystems and halting biodiversity loss requires not only unprecedented efforts of ecosystem conservation, restoration, and sustainable management today (which is where most focus is placed today), but also ensuring ecosystems are preserved into the future, which requires reducing land-use conversion pressures and keeping them low throughout coming decades.⁴

Recent science indicates that given the sustainability thresholds necessary to ensure biodiversity and the integrity of ecosystems are not severely undermined, BECCS (but also afforestation) will only be able to play a much more limited role (e.g. around 1-2.5 Gt/CO₂/yr sustainable deployment assessed by the IPCC-IPBES JWR), than that still projected in a number of Integrated Assessment Models (IAMs), even those within the IPCC AR6 WGIII Report. An assessment by Creutzig et al (2021) found that 33% of the 1.5°C or 2°C pathways presented in IPCC reports bank on over 5 Gt/CO₂/yr removals by BECCS by 2050 – which would necessitate planting bioenergy crops on an area over twice the size of Argentina – or above (up to 13.5 Gt/CO₂/yr), significantly trespassing sustainability thresholds. Creutzig et al (2021) caution that “large-scale BECCS and its associated land use would likely steer the earth system closer to or beyond planetary boundaries associated with freshwater use, biosphere integrity, and biochemical flows.”

4. Points 1-3 lead to the following conclusion: to collectively reach net zero emissions by mid-century towards the 1.5°C goal, protecting 'nature' must critically come *in addition to*, and in no case *instead of* the first priority of deep decarbonization and fossil fuel phase-out.

A key conclusion from our work at IDDRI in crossing climate and biodiversity science is that fully integrating biodiversity and ecosystems into the climate discussion reinforces the call for upfront ambitious mitigation towards reaching net zero emissions and the 1.5°C goal, requiring dual accelerated action on **both (i) deep decarbonization** (fossil fuel phaseout,

⁴ Land-use conversion is the first driver of biodiversity loss (IPBES GAR, 2019).

and scaling-up demand side measures—which are a key win-win)⁵ *in addition to (rather than instead of) (ii) minimizing emissions from LULUCF, by preserving and restoring natural ecosystems, and scaling-up sustainable land use* (Deprez et al., 2021). The need to protect ecosystems *in addition to* decarbonization questions the role carbon markets/offsets can play in financing ecosystem conservation, and connects back to guiding questions on mitigation (especially #4 and #5.1.), and finance and means of implementation, #11 and 15 in particular focused on Art. 2.1.(c).

5. When discussion cross-cutting question 20 on ecosystems, link it fully to the mitigation Guiding Questions, especially question #4 and #5.1., and question #22.a on integrated approaches. On Question 22 specifically:

22.a “what integrated and holistic approaches are available to achieve the purpose and long-term goals of the Paris Agreement?” TD2 should also further focus on demand-side shifts (e.g. lifestyles changes): the IPCC AR6 WGIII Report underscored this as a key element to accelerate deeper decarbonization, yet this was under-emphasized in the TD1.

22.b: How can science and innovation be accelerated, encouraged and enabled? Ensuring greater integrated science across the climate and biodiversity scientific communities is essential, to feed back into the Paris Agreement including the GST. In order to help guide Parties NDCs’ to be aligned with the 1.5°C goal in keeping within ecosystem planetary limits, **Parties could call upon the IPCC to develop a Special Report with IPBES, under the upcoming 7th Assessment Report Cycle.** Building off the IPCC AR6 WGII and WGIII Reports, and the IPCC-IPBES JWR, this Special Report could detail out how to address both crises in tandem, especially through sustainability pathways to reach the 1.5°C goal keeping within ecosystem planetary boundaries and ensuring other Sustainable Development Goals (e.g. food security) can be met.

Resources:

Creutzig et al., 2021 Creutzig, F. *et al.* (2021) ‘[Considering sustainability thresholds for BECCS in IPCC and biodiversity assessments](#)’, *GCB Bioenergy*, 13(4), pp. 510–515.

Deprez et al., 2019 [Towards a climate change ambition that \(better\) integrates biodiversity and land use](#), IDDRI Study

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⁵ The IPCC AR6 WGIII Report’s (2022) namely emphasises the need to reduce emissions by 84% by 2050 in order to reach net zero on a 1.5°C path with no or limited overshoot.

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[1] Other relevant hooks include: the Paris Agreement's Art. 5, but also 1/CP.25, and 1/CMA.3 Part of the Glasgow Pact.

[2] While recognizing the links between ecosystem integrity and climate adaptation are critical, our present note is focused on the mitigation links.

[3] <https://www.nytimes.com/2022/05/17/climate/eu-burning-wood-electricity.html>

[4] <https://www.woodwellclimate.org/letter-regarding-use-of-forests-for-bioenergy/>

[5] <https://seea.un.org/news/g7-ministers-commit-seea-implementation>