Framework Convention on
Climate Change

Subsidiary Body for Scientific and Technological Advice 05 June 2021

Dialogue on the relationship between land and climate change adaptation related matters

Informal summary report by the Chair of the Subsidiary Body for Scientific and Technological Advice

Summary

This report provides an informal summary of the dialogue on the relationship between land and climate change adaptation related matters, held virtually on 30 November and 1 December 2020 during the UNFCCC Climate Dialogues 2020. It includes a summary of findings from the discussions by Parties on non-Party stakeholders on land and climate change adaptation practices; delivering support for land and climate change adaptation actions; assessing and monitoring land adaptation to climate change; and policy approaches for land management and climate change adaptation. It also includes reflections on enhancing action on land and climate change adaptation.

Contents

Abbreviations and acronyms

CBD	Convention on Biological Diversity
CIFOR	Centre for International Forestry Research
COP	Conference of the Parties
COVID-19	coronavirus disease 2019
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GEO	Group on Earth Observations
ICRAF	World Agroforestry Centre
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
KJWA	Koronivia joint work on agriculture
NAP	national adaptation plan
NDC	nationally determined contribution
NWP	Nairobi work programme on impacts, vulnerability and adaptation to climate change
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
SBSTA	Subsidiary Body for Scientific and Technological Advice
SDG	Sustainable Development Goal
Sendai Framework	Sendai Framework for Disaster Risk Reduction 2015–2030
UNCCD	United Nations Convention to Combat Desertification

I. Background

1. COP 25 requested the Chair of the SBSTA to convene at SBSTA 52 a dialogue on the relationship between land and climate change adaptation related matters, not intervening in other processes under the Convention, the Kyoto Protocol and the Paris Agreement, including those carried out under the SBSTA. It also invited Parties and non-Party stakeholders to submit inputs via the submission portal by 31 March 2020 to inform the dialogue and requested the SBSTA Chair to prepare an informal summary report (this document) on the dialogue.[1]

2. The SBSTA Chair prepared an information note[2] based on the submissions[3] from Parties and non-Party stakeholders to inform the organization of the dialogue. The dialogue provided a space for Parties and non-Party stakeholders to discuss existing practices in land and climate change adaptation and share related experiences, challenges and opportunities, drawing on the knowledge and scientific findings contained in the IPCC Special Report on Climate Change and Land (SRCCL).[4]

3. The SBSTA Chair ensured that the dialogue was inclusive and participatory with inputs from both Parties and non-Party stakeholders.

II. Proceedings

4. The dialogue was held virtually on 30 November and 1 December 2020 during the UNFCCC Climate Dialogues 2020. It consisted of two 2.5-hour sessions, one on each day, and consisted of a high-level opening on the first day, plenary sessions and breakout discussions on both days and a concluding discussion on the way forward on the second day.

5. The dialogue was chaired by Kakhaberi Mdivani, Vice Chair of the SBSTA. At the high-level opening, statements were made by Zac Goldsmith, Minister for Pacific and the Environment of the United Kingdom of Great Britain and Northern Ireland; José Ignacio Pinochet Olave, Vice-Minister, Ministry of Agriculture of Chile; Ibrahim Thiaw, UNCCD Executive Secretary; and Patricia Espinosa, UNFCCC Executive Secretary. Additionally, Jim Skea, Jagdish Krishnaswamy and Cynthia Rosenzweig, authors of the SRCCL, and Handaine Mohamed of Morocco were invited to make keynote presentations at the dialogue.

6. Four breakout groups were established, each focusing on one of the following topics:

(a) Land and climate change adaptation practices;

(b) Delivering support for land and climate change adaptation actions;

(c) Assessing/monitoring land adaptation to climate change;

(d) Policy approaches for land management and climate change adaptation.

7. The breakout groups were led by a moderator and included panellists who provided initial reflections to kickstart discussions. A set of guiding questions were provided to the breakout groups (see annex II). A Mentimeter live poll was conducted during each breakout group session to enable all participants to provide written input to the discussion.

8. At the closing of the Climate Dialogues, the SBSTA Chair invited Parties and non-Party stakeholders to submit any additional inputs on the dialogue by 31 December 2020 for

[1] Decision 1/CP.25, paras. 32–34.

[2] Available at https://unfccc.int/sites/default/files/resource/20201109-Informationnote-SBSTA-Land-Dialogue-Nov-2020.pdf.

[3] Available at https://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx (type "land" into the search box). A list of Parties and non-Party stakeholders that made submissions is provided in annex I.

[4] IPCC. 2019. IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems. PR Shukla, J Skea, E Calvo Buendia, et al. (eds.). Available at https://www.ipcc.ch/report/srccl/.

consideration in the preparation of this summary report.[5] One submission was received from FAO.

9. The programme for the dialogue, including the list of speakers and panellists, and the information note, event flyer, presentations and event recordings are available on the dedicated event web page.[6] Visual story artworks commissioned for the land dialogue are contained in annex III and annex IV.

III. Summary of the dialogue

A. Key messages from the high-level opening

10. The high-level opening drew attention to the vicious cycle involving the land system and climate change, emphasizing evidence of the value of land for human and ecological systems, especially given its unparalleled potential to reduce greenhouse gas emissions and build resilience to climate change, while stressing that climate change and land degradation are the biggest destructors of land.

11. The opening also emphasized a range of interrelated actions that need to be taken around the globe on sustainable management, conservation and restoration of land and the implementation of a range of ecosystem-based approaches and nature-based solutions to protect biodiversity and build resilience.

12. Nature-based solutions can provide a third of the most cost-effective solutions to climate change and help minimize the threat of loss and damage. Nonetheless, nature-based solutions receive less than 3 per cent of global climate finance. Mr. Goldsmith highlighted the actions being taken by the United Kingdom as part of action campaigns associated with COP 26, which include putting nature at the heart of ongoing dialogues in the lead-up to COP 26, inviting donors to step up financial contributions and launching the just transition initiative, which brings together governments, farmers, businesses, indigenous peoples and others to lead the shift to sustainable land use and food systems.

13. Raising ambition on land management and climate change adaptation requires action and engagement at all levels. Mr. Olave highlighted the actions being taken by the Government of Chile as the current Presidency, which include highlighting and promoting adaptation within agriculture, raising awareness of climate change mitigation across the agriculture sector and sharing knowledge and skills in a collaborative manner both in the region and globally.

14. Land restoration is once again gaining momentum on a global scale. Mr. Thiaw underscored the launch by the Group of 20 of the Global Initiative on Reducing Land Degradation and Enhancing Conservation of Terrestrial Habitats,[7] the aim of which is to prevent, halt and reverse land degradation, as an important political milestone. He also underlined that there are some 500 million smallholder farming families in developing countries that can contribute to the global effort to mitigate greenhouse gases and build resilience through sustainable land management.

15. Governments are continuing to raise their level of climate ambition through their NDCs and in formulating and implementing their NAPs. Ms. Espinosa stressed that, in conjunction with the declaration of 2021–2030 as the United Nations Decade on Ecosystem Restoration, this gives countries, business and institutions opportunities to invest time, effort and money in restoring the natural landscape, which will result in job creation, food security and measures to address climate change. Ms. Espinosa also emphasized the need to deepen and expand conversations on land and climate change adaptation in that regard.

[5] As footnote 3 above.

[6] https://unfccc.int/node/210375.

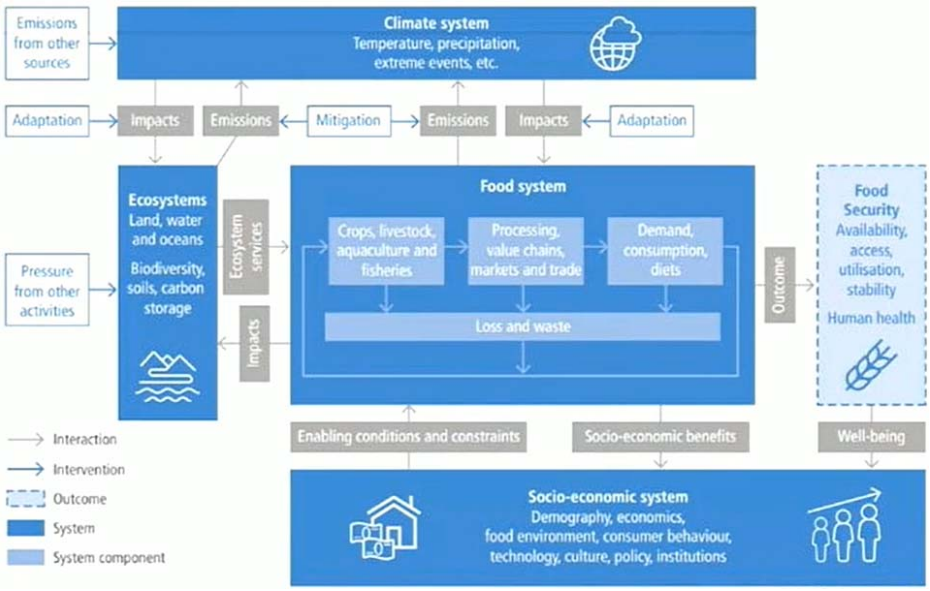
[7] Information on the initiative is available at https://www.env.go.jp/press/files/jp/115070.pdf.

B. Highlights from keynote presentations

16. Mr. Skea, Mr. Krishnaswamy and Ms. Rosenzweig presented findings on climate change adaptation from the SRCCL, with a focus on food systems, desertification and land degradation. The authors stressed that response options in the land sector effectively contribute to both adaptation and mitigation and to broader aspects of sustainable development.

17. Regarding the food system (see figure 1), many response options from production to consumption, including food loss and waste, can be deployed and scaled up to advance adaptation and mitigation.

Figure 1
The food system and its interaction with the climate system, ecosystems and the socioeconomic system



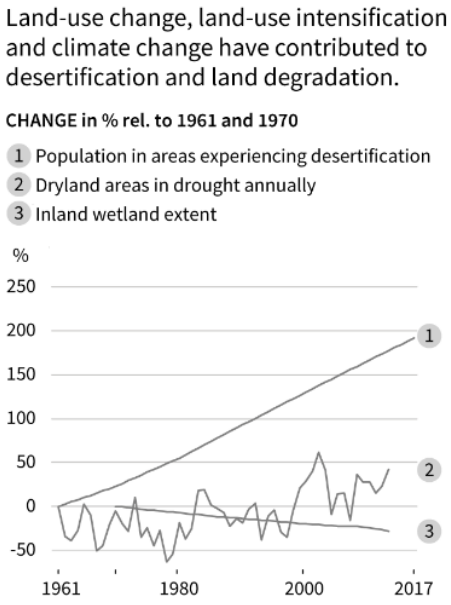
Source: Slide 1 of the presentation by Ms. Rosenzweig.

18. Other cross-cutting response options can yield medium to high results in addressing adaptation and mitigation in food systems. These include diversifying the food system through integrated production systems, broad-based genetic resources and heterogeneous diets, among other things; applying indigenous and local knowledge; and empowering women and promoting rights-based approaches to decision-making.

19. Regarding desertification and land degradation, productive land is a finite, critical resource that is already facing pressure from many sides, with climate change adding to the burden. Some 70 per cent of ice-free land is already impacted by human activities through infrastructure, agriculture, pastures and forest plantations or managed forests.

20. As more land is degraded, the percentage of people exposed to climate risks increases. Figure 2 shows, inter alia, the trend in population in areas experiencing desertification.

Figure 2
Desertification and land degradation



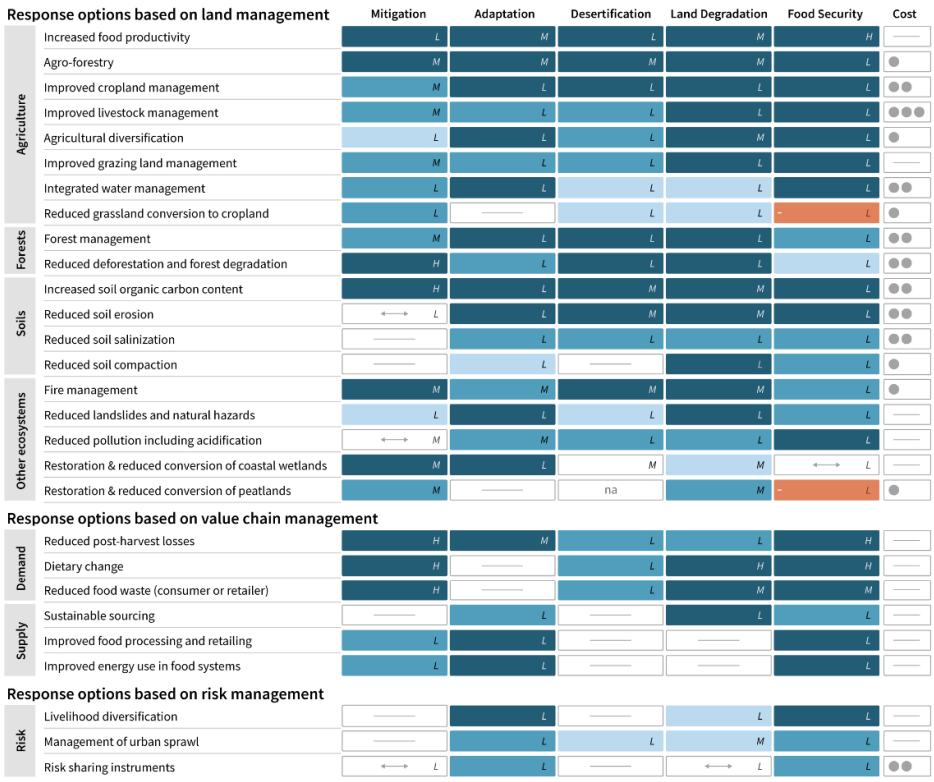
Source: Slide 5 of the presentation by Mr. Krishnaswamy.

21. Many response options can be implemented with or without limited competition for land, and some also have the potential to reduce demand for land (see figure 3). The response options are interlinked, and some have co-benefits or are more effective when paired with others. Acting early will avert or minimize risks, reduce losses and generate returns on investment.

22. Measuring progress towards goals is important to decision-making, adaptive governance and policy success.

Figure 3

Potential global contribution of response options to mitigation, adaptation, combating desertification and land degradation, and enhancing food security



Options shown are those for which data are available to assess global potential for three or more land challenges.
The magnitudes are assessed independently for each option and are not additive.

Key for criteria used to define magnitude of impact of each integrated response option

		Mitigation *Gt CO_2-eq yr^{-1}*	Adaptation *Million people*	Desertification *Million km^2*	Land Degradation *Million km^2*	Food Security *Million people*
Positive	Large	More than 3	Positive for more than 25	Positive for more than 3	Positive for more than 3	Positive for more than 100
	Moderate	0.3 to 3	1 to 25	0.5 to 3	0.5 to 3	1 to 100
	Small	Less than 0.3	Less than 1	Less than 0.5	Less than 0.5	Less than 1
	Negligible	No effect	No effect	No effect	No effect	No effect
Negative	Small	Less than -0.3	Less than 1	Less than 0.5	Less than 0.5	Less than 1
	Moderate	-0.3 to -3	1 to 25	0.5 to 3	0.5 to 3	1 to 100
	Large	More than -3	Negative for more than 25	Negative for more than 3	Negative for more than 3	Negative for more than 100

Variable: Can be positive or negative — no data — na not applicable

Confidence level
Indicates confidence in the estimate of magnitude category.
H High confidence
M Medium confidence
L Low confidence

Cost range
See technical caption for cost ranges in US$ tCO_2e^{-1} or US$ ha^{-1}.
High cost
Medium cost
Low cost
no data

Source: Figure SPM.3A in IPCC, 2019: Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press. As referenced in the presentation by Mr. Krishnaswamy.

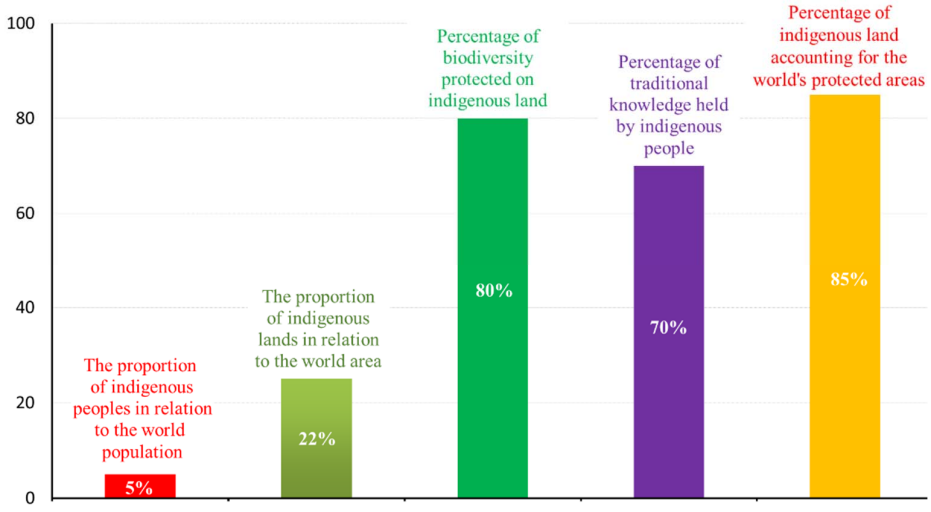
23. Mr. Mohamed presented on indigenous peoples' land rights and climate change.

24. Some 80 per cent of the world's indigenous peoples live in areas that are most vulnerable to climate risks, with deforestation and other pressures on land directly threatening their existence and livelihoods.

25. Globally, indigenous peoples have established a strong connection with land and have a wealth of ancestral and traditional knowledge and practices for the sustainable management of land, which can play a significant role in adaptation and mitigation in the land sector.

26. For optimal results, scientific and traditional systems can be used in conjunction to inform policy actions, for example, satellite land-cover mapping imagery can be used to identify indigenous lands and establish degradation levels.

Figure 4
Positioning of indigenous peoples in the world



C. Land and climate change adaptation practices

27. During the session, participants discussed experience, good practices and lessons learned in land management and climate change adaptation, exploring topics including existing approaches in land management and climate change adaptation, co-benefits to wider socioeconomic systems, challenges and gaps and ways to address them, and potential opportunities to scale up action. The session was facilitated by Florian Claeys from the European Commission. Representatives of Indonesia, Norway, the Research Programme on Climate Change, Agriculture and Food Security and the United Nations Environment Programme provided initial reflections to kickstart discussions. Paragraphs 28–38 below summarize findings from the discussions.

28. Land management has huge potential in terms of climate change adaptation. As climate change impacts intensify, there is a growing need to make full use of this potential. Climate change adaptation should therefore be integrated in all aspects of land use and land management.

29. There is a wide range of practices related to land management and climate change adaptation, including:

(a) *Sustainable agriculture and agroforestry practices* such as precision agriculture; integrated landscape approaches; agroforestry; and sustainable management of land, forests and other ecosystems. Brazil's integrated landscape approach has enabled social, economic, environmental and agronomical approaches to land-use management, helping to strike a balance between agricultural production, biodiversity conservation and provision of environmental services. In Indonesia, the Government launched a small-scale community tree planting programme with components of sustainable agriculture and forests,

agroforestry, rehabilitation of degraded lands and peatland restoration. Following the success of the programme, the Government granted an additional 12.7 million ha land to local communities for agroforestry;

(b) *Regenerative, restorative and rehabilitative land practices* such as rehabilitating degraded lands; securing and restoring wetlands, peatlands and forest lands; and urban greening. In Norway, the Government adopted the national plan for restoring wetlands in 2016, on the basis of which 80 wetland and peatland areas have been restored;

(c) *Spatial management* through policies such as Brazil's Agriculture Climate Risk Zoning instrument, through which farmers can receive advice on planting and sowing crops to reduce harvest loss, and guidance documents such as Norway's national spatial planning guidelines for municipalities and counties on how to integrate climate change adaptation in land-use management;

(d) *Establishing early warning systems and using climate information* for decision-making support in production, harvest and distribution of agricultural goods and services. Panama has developed a land vulnerability index with a view to gaining a better understanding of the impacts of climate change on forests, agriculture and livestock.

30. Integrating climate change adaptation in land management has a wide range of co-benefits that extend beyond land system resilience. Delivering on climate change adaptation and land management would deliver on many elements of the SDGs, including through improvements to food security, water security, health and job security. Sustainable agriculture and agroforestry practices have been proven to improve the livelihoods of local communities and increase their resilience while protecting ecosystem services. The use of nature-based solutions in the most vulnerable systems has helped to increase food production and food security. Additionally, many land management practices help to reduce the amount of greenhouse gases in the atmosphere.

31. Applying traditional knowledge from local communities and indigenous peoples can significantly enrich approaches aimed at strengthening linkages between land management and climate change adaptation. Such knowledge can also help to establish a stronger focus on land rights, enhance land governance and strengthen the efforts for sustainable land management across countries.

32. Linkages between land management and climate change adaptation are complex, requiring the application of integrated approaches. The use of nexus approaches in terms of land, biodiversity and climate change can significantly enhance benefits for land adaptation to climate change and enhance natural resilience. Creating synergies and avoiding trade-offs between land management and climate change adaptation or mitigation can make actions more effective, and considering just one perspective can lead to unintended trade-offs.

33. Climate-related risks, including heightened risk of fires, pests and diseases, can make it difficult to maintain forests and agricultural systems. Effective risk management approaches are required. In Brazil, ensuring that the management of agronomical practices is integrated with the landscape has led to benefits with regard to the adaptive capacity of agricultural production, including through increased biodiversity, better soil conditions and water quality improvements.

34. Enhanced governance at all levels is essential in terms of bringing together different actors working on land management and climate change adaptation, establishing criteria for sustainable practices and creating synergies between different practices. The UNFCCC process provides opportunities for promoting cooperation among countries and enhancing coordination at the international level. NAPs and the work under the KJWA and the NWP can play a significant role in enhancing the integration of climate change adaptation in land management. There are also a number of initiatives to learn from, including the Forest and Water Champions initiative led by FAO, IUCN and the Stockholm International Water Institute.

35. Economic, technological, institutional, sociocultural, environmental and geophysical barriers exist for some response options. There is a range of challenges in scaling up actions related to land and climate change adaptation, including limited technical knowledge and awareness and a lack of agreed technical standards; a lack of or inconsistent land management

governance, policy and regulation; limited finance for land-based adaptation owing, in part, to a lack of evidence of the value of land management and adaptation to sustainable development; and a lack of political support to drive actions at all levels. Enhanced efforts are required to improve collaboration and cooperation among different actors; improve tenure aspects of land; improve understanding of the costs and benefits of land adaptation to climate change; improve data quality and enhance their generation, availability and accessibility; enhance knowledge-sharing, learning and engagement among all stakeholders; and develop capacity at all levels taking into account gender, vulnerable groups, land owners, subnational and local authorities, etc.

36. The work under the KJWA and the NWP provides opportunities to exchange experience, good practices and lessons learned in land management and climate change adaptation.

37. The SRCCL and the IPBES Assessment Report on Land Degradation and Restoration released in 2018[8] provide scientific evidence on response options on land that can significantly contribute to climate change adaptation and hence serve as the basis for action at different levels.

38. COVID-19 recovery efforts provide opportunities to enhance land management and climate change adaptation actions. In New Zealand, the government created a 'jobs for nature' programme focused on afforestation, climate change control and water management.

D. Delivering support for land and climate change adaptation actions

39. During the session, participants discussed experience, good practices and lessons learned in relation to current support and gaps for the land sector in terms of building resilience to climate change, including the types of support and gaps, their sources and the scales involved, as well as related challenges and opportunities. The session was facilitated by Tony Simons from CIFOR–ICRAF. Representatives of Mexico, the World Bank and IUCN provided initial reflections to kickstart discussions. Paragraphs 40–49 below summarize findings from the discussions.

40. To facilitate the implementation of actions related to land and climate change adaptation, countries should include relevant priorities in their national policies, strategies and plans, such as their NDCs, NAPs, CBD National Biodiversity Strategies and Action Plans and UNCCD national action programmes.

41. Some countries have established programmes to scale up the implementation of land-related actions at the national level. In New Zealand, for example, the Government is implementing the One Billion Trees Programme to encourage afforestation and thereby store more carbon, enhance forest resilience, improve biodiversity, reduce erosion and provide opportunities for indigenous Maori communities to maximize the potential of their land and resources.

42. There are examples of programmes targeting actions related to land and adaptation. The World Bank runs a climate-smart agriculture programme,[9] initially developed by FAO, the aim of which is to increase productivity, reduce emissions and enhance adaptation. The programme has a current global portfolio of USD 2.5 billion. IUCN and the United Nations Environment Programme administer the USD 20 million Global Fund for Ecosystem-based Adaptation, which receives funding from Germany and provides seed capital for innovative approaches to ecosystem-based adaptation.[10]

43. For evidence-based climate decision-making, establishing a scientific basis by, for example, applying the best available science and information; using appropriate data, analysis and interpretation; and developing and applying metrics and indices is important in

[8] IPBES. 2018. The IPBES assessment report on land degradation and restoration. Montanarella, L., Scholes, R., and Brainich, A. (eds.). IPBES secretariat, Bonn, Germany. Available at https://ipbes.net/assessment-reports/ldr.

[9] More information is available at https://www.worldbank.org/en/topic/climate-smart-agriculture.

[10] More information is available at https://globalebafund.org.

terms of enabling support for actions related to land and climate change adaptation. In addition to helping to strengthen assessments and priority-setting in national policies, strategies and plans, this will help to improve the quality of evidence to be used in funded activities.

44. There are growing efforts to enhance the engagement of the private sector in land management and adaptation-related actions. The World Bank is exploring strategies for repurposing existing climate finance for public–private investments. Private sector companies are among the eligible recipients for the Global Fund for Ecosystem-based Adaptation.

45. Recognizing the full value of land to the economy can help to drive support for land management. For the three most popular land uses (i.e. agriculture, forests and pastures, which accounted for two thirds of all land in 2020), their value is often only characterized by their direct contribution to gross domestic product (i.e. 4.5 per cent for agriculture and 1.5 per cent for forests). This overlooks the overall value of the agriculture and forest systems from the economic, social and environmental perspective, which is greater than the estimated figures.

46. The decade 2021–2030 provides the opportunity to invest more time, effort and money in managing, protecting and restoring land and its provisioning services, particularly in reference to, inter alia, the implementation of the SDGs leading up to 2030, the implementation of the Paris Agreement, the United Nations Decade on Ecosystem Restoration, the post-2020 global biodiversity framework, and the Rio Conventions conferences in 2021 and related outcomes.

47. In responding to large-scale land and adaptation requirements, additional consideration must be given to land tenure and land rights to ensure that concerns related to land, climate and rights are considered holistically.

48. There are several challenges related to delivering support for actions related to land and climate change adaptation, including competing priorities for resources; lack of data to underpin assessments for decision-making; limited information base for making the case for investing in land; knowledge and capacity gaps for updating national strategies and raising ambition; security of land tenure and land rights for small-scale farmers, local communities and indigenous peoples; and finance for irreversible losses due to land degradation.

49. Support for actions related to land and adaptation can be enhanced by undertaking additional efforts, including:

(a) Utilizing existing support under the UNFCCC with respect to capacity-building, technology and finance, including under the work of the different programmes such as the KJWA, to strengthen adaptation and mitigation approaches in the land sector;

(b) Carrying out capacity-building in relation to specific approaches related to land management and climate change, including nature-based solutions and ecosystem-based adaptation;

(c) Expanding the pool of support for actions related to land and adaptation;

(d) Strengthening partnerships between government, agriculture sectors, local and indigenous communities, the private sector and other users of land to promote support for adaptation and mitigation actions in the land sector;

(e) Further promoting through governments and international organizations scientific programmes that can support Earth observations on land to develop and monitor climate change adaptation in general and progress in relation to NAPs in particular.

E. Assessing and monitoring land adaptation to climate change

50. During the session, participants discussed experience, good practices and lessons learned, challenges and opportunities pertaining to the assessment and monitoring of land adaptation to climate change, including through the mapping of land-cover change, assessment of progress in land management and climate change adaptation at the national

level, and the assessment of risks and resilience-building in land systems. The session was facilitated by Miriam Medel from UNCCD. Representatives of Japan, GEO and the United Nations Human Settlements Programme provided initial reflections to kickstart discussions. Paragraphs 51–59 below summarize findings from the discussions.

51. While the progress is at different stages around the world, there are enough data and systems worldwide to start to inform the assessment and monitoring of land adaptation to climate change. Through the automatic classification of satellite images from Landsat and a national monitoring tool, Brazil has been able to monitor shifts in the degradation of pastoral lands. The country saw a significant reduction in the number of severely and moderately degraded pastures between 2010 and 2018 thanks to the implementation of its ABC Plan. The EU adaptation strategy and the Common Agricultural Policy both contain monitoring and evaluation frameworks for member States to report on the achievement of their goals and targets under those instruments.

52. Scientific knowledge forms the basis of adaptation assessments. Under the framework of its climate change act 2018, the Japanese Government reviewed the latest scientific knowledge to inform the update to its national climate change adaptation plan and facilitate monitoring. Furthermore, the Government applied scientific knowledge to take action such as designing and implementing forest conservation projects with a view to protecting people's lives and property against mountain disasters, tidal waves and strong winds. New Zealand's Climate Change Response Act requires the national Climate Change Commission, an independent committee, to produce risk assessments, which subsequently inform the production of the country's NAP and its subsequent monitoring.

53. There are many inter-connected issues in land and climate change adaptation, including the needs and knowledge of vulnerable communities, local communities and indigenous peoples; land tenure; disaster risk reduction; data; technology; and the role of agriculture. Monitoring efforts in these areas can help to inform the assessment and monitoring of land adaptation to climate change.

54. The consideration of indigenous peoples with respect to assessing land adaptation to climate change requires a different set of targets and indicators to be used in recognition of their distinct role in protecting and managing land. Capacity-development and knowledge systems need to be comprehensively addressed, taking into account all systems and stakeholders, including scientific, traditional, local and indigenous knowledge systems.

55. Including all stakeholders in the measurement, reporting and verification of the performance of policy instruments can enhance the information base for decision-making. In updating its NDC and developing its fourth national communication, Panama collaborated with international and national institutions on data collection and capacity-building and to compile lessons learned and convened multiple dialogues with different actors and stakeholders, including representatives of the public and private sectors, women, youth and academics. The dialogues helped to consolidate the available information and identify the needs of each sector.

56. A range of challenges must be faced to effectively assess and monitor land adaptation to climate change, including a lack of robust high-resolution data at appropriate levels in many developing countries; a lack of context-appropriate monitoring approaches with qualitative and quantitative inputs; the complexity of the indicators for climate change adaptation; limited institutional capacity to implement national plans and strategies in many developing countries; and limited alignment between work on agriculture, biodiversity and forestry and work on land adaptation to climate change.

57. Global initiatives and data sets can be accessed to inform the assessment and monitoring of land adaptation to climate change and help with some of the existing challenges. Examples highlighted at the dialogue included:

(a) The Global Forest Observations Initiative, which provides support to developing countries in relation to national forest management systems;

(b) The GEO Global Agricultural Monitoring initiative and its Crop Monitor, which produce and disseminate relevant, timely and actionable information on agricultural conditions and outlooks;

(c) The GEO Biodiversity Observation Network, which is aimed at improving the acquisition, coordination and delivery of biodiversity observations and related services for a range of users;

(d) The GEO Land Degradation Neutrality initiative, which strengthens land degradation monitoring and reporting using remote sensing and data collected on site;

(e) The GEO Wetlands initiative, which is aimed at supporting stakeholders and users with earth observation based mapping, monitoring, inventory and assessment of wetlands;

(f) The Earth Observations for Ecosystems Accounting initiative, which is aimed at furthering the development and use of earth observations for natural capital accounting;

(g) The Global Land Indicators Initiative, which coordinates the development of globally comparable indicators, methodologies and tools for data collection, monitoring and reporting on land governance issues, including in relation to the SDGs and the New Urban Agenda.

58. There are also platforms for exchanging experience, best practices and lessons learned, including the European Climate Adaptation Platform, which fosters exchange with regard to data, indicators for agricultural land and lessons on monitoring and evaluation.

59. Taking the following additional steps could help to enhance assessment and monitoring with regard to land adaptation to climate change:

(a) Reinforcing linkages between existing monitoring instruments; each tool related to land policy should specify the indicators used for monitoring in relation to land and climate change adaptation;

(b) Exploring how different programmes work together to enhance coherence and synergy in assessing and monitoring land adaptation to climate change, including those under the Convention and the Paris Agreement, the 2030 Agenda for Sustainable Development and the Sendai Framework;

(c) Developing indicators and supporting countries in developing their own implementation capacities;

(d) Promoting collaborative efforts among a wider set of actors and intergovernmental programmes to improve data exchange with a view to informing the assessment of land adaptation to climate change, for example, by bringing together the work of the GEO Land Degradation Neutrality initiative, UNCCD and the United Nations Human Settlements Programme on land tenure and land degradation neutrality;

(e) Drawing upon the work carried out under constituted bodies and programmes under the UNFCCC, including the Adaptation Committee, the Least Developed Countries Expert Group and the NWP, in relation to monitoring and evaluating adaptation across different systems, in addition to work under the process to formulate and implement NAPs and, more broadly, work on monitoring and evaluating progress in relation to the SDGs.

F. Policy approaches for land management and climate change adaptation

60. During the session, participants discussed experience, good practices and lessons learned in relation to policy approaches for land management and climate change adaptation, interlinkages between policy approaches and how approaches can be strengthened further, including through the integration of land-based matters into NDCs, NAPs and other related instruments. The session was facilitated by Fatou Gaye from the Gambia. Representatives of New Zealand, Uganda, FAO and Southern African Science Service Centre for Climate Change and Adaptive Land Management provided initial reflections to kickstart discussions. Paragraphs 61–61 below summarize findings from the discussions.

61. The land sector offers the highest number of co-benefits in terms of adaptation, mitigation, disaster risk management, land degradation neutrality, biodiversity and progress towards the achievement of the broader set of SDGs. Including and/or enhancing land-related

commitments and targets in existing instruments, such as NDCs, NAPs, disaster risk reduction plans, National Biodiversity Strategies and Action Plans and UNCCD national action programmes, and in other specific strategies and plans at national level, will help to improve the assessment and monitoring of land adaptation to climate change and thereby shape related policies. New Zealand's NDC includes forests and forestry, and its first NAP to be completed in 2022 will include land and water measures and recognize the interests of the indigenous Maori communities.

62. Forests, trees and agroforestry offer unparalleled benefits in terms of sustainable development and provide numerous nature-based solutions, including storing carbon, improving water quality and biodiversity, and achieving positive animal welfare outcomes. Ambitious policies are required to elevate the role of forests and related stakeholders in both land management and adaptation. In New Zealand, for example, the Government is implementing the One Billion Trees Programme (see para. 42 above).

63. Land-based ecosystems are transboundary and require political cooperation at the regional and international level. The new EU adaptation strategy is expected to improve knowledge in relation to climate impacts and solutions, reinforce planning and climate risk assessment, and accelerate adaptation action in the region, in addition to strengthening climate resilience globally.

64. International frameworks are instrumental in driving national policy and action. In Uganda, in the context of meeting its commitments under the UNFCCC, the CBD and the UNCCD, the Government has elevated adaptation actions in its NDC and developed a national climate change policy, while it is currently mainstreaming land degradation neutrality into its national development agenda. Moreover, in 2007 the Government developed a national adaptation programme of action containing adaptation actions in nine priority areas. Additionally, the country anchors its agriculture agenda to the Comprehensive Africa Agriculture Development Programme and its four strategic pillars, which incorporate sustainable land management, market access, research and technology transfer.

65. Utilizing existing support under the UNFCCC with respect to capacity-building, technology and finance and drawing on the work under programmes such as the KJWA can help to strengthen adaptation and mitigation approaches in the land sector.

66. Scientific programmes promoting the use of Earth observations can support sound policy development for land management and advance adaptation in multiple land sectors.

67. Indigenous and local knowledge can play a key role in enhancing understanding of climate processes, impacts and responses.

68. There is growing recognition of the need for and the value of building synergies between different groups and actors in land management and adaptation. In the Islamic Republic of Iran, the Government cooperated with local non-governmental organizations to promote sustainable land management practices with a view to reducing severe risks, including those related to land-use change, forest degradation, overgrazing and soil erosion. Through that engagement, the country successfully stopped forest wood harvesting and implemented policies to protect forests.

69. Measuring progress towards set goals is important to decision-making, adaptive governance and policy success. Through desk research, Uganda estimated the organic carbon stocks for different land-use and land-cover changes at the national level, and the results empowered the country to improve precision in carbon sequestration. In Brazil degraded pastures dropped by 9 per cent between 2010 and 2018 as a result of implementing its Adaptation and Low-Carbon Emission Agricultural Plan, further strengthening the argument in favour of progress tracking.

70. Partnerships between government, agriculture sectors, local and indigenous communities, and other users of land can improve security of tenure, advance synergies and overcome barriers to adaptation and mitigation.

71. Empowering women can bolster synergies, advancing both household food security and sustainable land management.

72. Land, adaptation and synergy with other objectives, including those related to mitigation, are covered by several programmes under the UNFCCC, including the NWP, the KJWA and the Marrakech Partnership for Global Climate Action. There is a need to explore how work across these programmes can be consolidated to help Parties to effectively identify land and adaptation options for implementation.

73. Challenges include limited linkages between different policy instruments and a lack of resources for implementing policies.

74. More coordination between government agencies and United Nations agencies and greater bilateral cooperation are required to address the linkages between sustainable land management and climate change adaptation and mitigation.

IV. Enhancing action on land and climate change adaptation: findings from the dialogue

A. Enhancing action through existing processes under the UNFCCC

75. Various programmes and activities under the UNFCCC address issues related to land and climate change adaptation, including:

(a) The KJWA, where Parties, constituted bodies, operating entities of the Financial Mechanism and members of the scientific community exchange views and experiences on issues related to agriculture and climate change;[11]

(b) The NWP, including in its collaboration with the Adaptation Committee, and its thematic areas on biodiversity, forests and grasslands;

(c) The formulation and implementation of NAPs;

(d) The research dialogue;

(e) REDD+;

(f) The Marrakech Partnership for Global Climate Action, including the sessions of the Race-to-Zero Dialogues[12] on nature-based solutions and land use in November 2020.

76. The programmes and activities referred to in paragraph 75 above can be used to further advance work related to land and adaptation, while avoiding overlaps, maximizing synergies and promoting learning between actors.

77. The dialogue identified the following actions that can be implemented to enhance actions related to land and climate change adaptation under the UNFCCC:

(a) Facilitating knowledge-sharing and access to data at all levels with a view to informing actions at the national level and discussions under the UNFCCC on land- and adaptation-related matters;

(b) Capturing and sharing experiences, good practices and lessons learned from different solutions with regard to developing and implementing monitoring and evaluation systems for land adaptation to climate change, with a particular focus on the least developed countries, small island developing States, African countries and other developing countries;

(c) Promoting the application of the latest science and technologies to local contexts;

(d) Expanding the pool of actors and stakeholders to involve everyone working on or owning land;

[11] Workshop documents are available at https://unfccc.int/node/192864.

[12] The programme, event recordings and related documents are available at https://unfccc.int/node/243476.

(e) Using experiences and tools related to ecosystem-based adaptation, such as the CBD voluntary guidelines,[13] to create linkages between land and the environment, for example, on ecosystem restoration;

(f) Promoting synergies between national policies, plans and strategies under the UNFCCC with those under other frameworks, including the SDGs, the Sendai Framework, the CBD and the UNCCD, especially on land degradation and restoration.

78. There were also proposals for convening further dialogues or discussions under the Subsidiary Body for Implementation and the SBSTA on the relationship between matters related to land and those related to climate change, focusing on specific themes and topics, which were contrasted with the opposing view that there is adequate coverage of land- and adaptation-related matters under the UNFCCC and no further work is needed.

B. Linkages with the Sustainable Development Goals and other international frameworks and processes

79. Land is strongly affected by climate change, but it also represents an incredible solution with multiple benefits in terms of climate change and in other areas. It is thus important that processes under the UNFCCC are connected with other processes. An integrated approach on land management is imperative for meeting all the goals. This can be achieved by maximizing implementation at the national level, where the potential for synergies among different challenges can be fully exploited. For instance, the EU is addressing climate change adaptation and mitigation across all sectors and through a number of its strategies, including its biodiversity strategy for 2030, the Farm to Fork Strategy, the Circular Economy Action Plan, the EU Forest Strategy and the EU Bioeconomy Strategy. Indonesia engages with several conventions dealing with the land sector, which accounts for the majority of the country's mitigation and adaptation targets.

80. Coordinating efforts under different international frameworks, including those under the Convention and the Paris Agreement, the 2030 Agenda for Sustainable Development, the Sendai Framework, the CBD and the UNCCD can help to enhance actions related to land and climate change adaptation.

81. There are opportunities to build synergies around the SDG indicators related to land tenure, land access, women's rights to land ownership and/or control, and land degradation and deforestation (e.g. SDG indicators 1.4.2, 2.3.1, 2.3.2, 5.a.2, 15.2 and 15.3.1) with a view to enhancing synergies in assessing and monitoring land adaptation to climate change, supporting policy action and advancing progress in achieving the SDGs. Earth observations can be used in national statistics to support decision-making processes under frameworks such as the 2030 Agenda on Sustainable Development, the Paris Agreement and the Convention, and the Sendai Framework.

82. In 2021, the three Rio Conventions (UNFCCC, CBD and UNCCD) will hold their Conference of the Parties sessions in the same year for the first time since 1992. This presents opportunities for Parties to explore ways to strengthen synergies on climate change adaptation, biodiversity and land-related matters.

83. There are also opportunities to align land management and climate change related actions with post-COVID-19 recovery measures, particularly for actions related to agriculture and forests.

84. The dialogues identified the following actions that can be implemented to enhance linkages with the SDGs and other international processes:

(a) Making the IPCC findings, including the SRCCL, more accessible and practical for local communities and farmers;

[13] Secretariat of the Convention on Biological Diversity (2019). *Voluntary guidelines for the design and effective implementation of ecosystem-based approaches to climate change adaptation and disaster risk reduction and supplementary information*. Technical Series No. 93. Montreal, 156 pages. Available at https://www.cbd.int/doc/publications/cbd-ts-93-en.pdf.

(b) Developing analytical tools incorporating climate change, biodiversity and land degradation with clear indicators to set up planning and actions;

(c) Supporting countries in creating synergies and aligning processes and efforts under the Rio Conventions (UNFCCC, CBD and UNCCD);

(d) Undertaking joint activities and initiatives such as knowledge-sharing events, policy briefs and research under the UNFCCC, CBD and UNCCD on climate change adaptation, biodiversity and land;

(e) Increasing funding for implementation of activities on the ground and ensuring coordination and cooperation across frameworks;

(f) Ensuring widespread engagement involving all stakeholders, including United Nations organizations, specialized agencies, financial institutions, cities and subnational authorities, civil society, local communities and indigenous peoples.

V. Concluding remarks

85. The land dialogue provided an opportunity for Parties and non-Party stakeholders to discuss the value of land for human and ecological systems and its unparalleled potential to reduce greenhouse gas emissions and build resilience to climate change. It provided further insights into existing approaches to land management and climate change adaptation, delivery of support, assessment and monitoring, and related policy approaches, and gave participants the opportunity to share their experiences.

86. The dialogue emphasized the key role played by agricultural lands, forests, wetlands and peatlands in supporting national development and the livelihoods of local communities, addressing socioeconomic and environmental issues, safeguarding biodiversity and maintaining ecosystem functions. It highlighted the fact that integrating all aspects of land-use management into climate adaptation actions can create numerous co-benefits for socioecological systems. It also provided confirmation that linkages between land management and climate change adaptation are complex and require integrated approaches and that the use of nexus approaches in land, biodiversity and climate change can significantly enhance benefits for land adaptation to climate change and enhance natural resilience.

87. The dialogue highlighted the need to further deepen and expand conversations on land and climate change adaptation. It also provided confirmation that existing processes under the UNFCCC can be used to further advance work related to land and adaptation, while avoiding overlaps, maximizing synergies and promoting learning between actors. The event further highlighted linkages with other processes and frameworks, including the work under the CBD and the UNCCD, the SDGs, and national and regional strategies, that can provide entry points for integrated approaches in land management and climate change adaptation.

Annex I

Submissions from Parties and non-Party stakeholders to inform the dialogue on the relationship between land and climate change adaptation related matters

88. Submissions from the following Parties and non-Party stakeholders to inform the dialogue on the relationship between land and climate change adaptation related matters had been received as at 21 October 2020:

(a) Parties:

(i) Argentina;

(ii) Brazil;

(iii) Croatia and the European Commission on behalf of the European Union and its member States;

(iv) Gabon on behalf of the African Group;

(v) Indonesia;

(vi) Japan;

(vii) Mexico;

(viii) New Zealand;

(ix) Norway;

(b) United Nations organizations:

(i) FAO;

(ii) UNCCD;

(c) Intergovernmental organizations:

(i) CIFOR;

(ii) IUCN;

(d) Non-governmental organizations:

(i) Climate Action Network International;

(ii) World Wide Fund for Nature;

(iii) Global Forest Coalition in collaboration with the Climate Land Ambition and Rights Alliance and Corporate Accountability.

89. The submissions are available on the submission portal.[1]

[1] https://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx (type “land” into the search box).

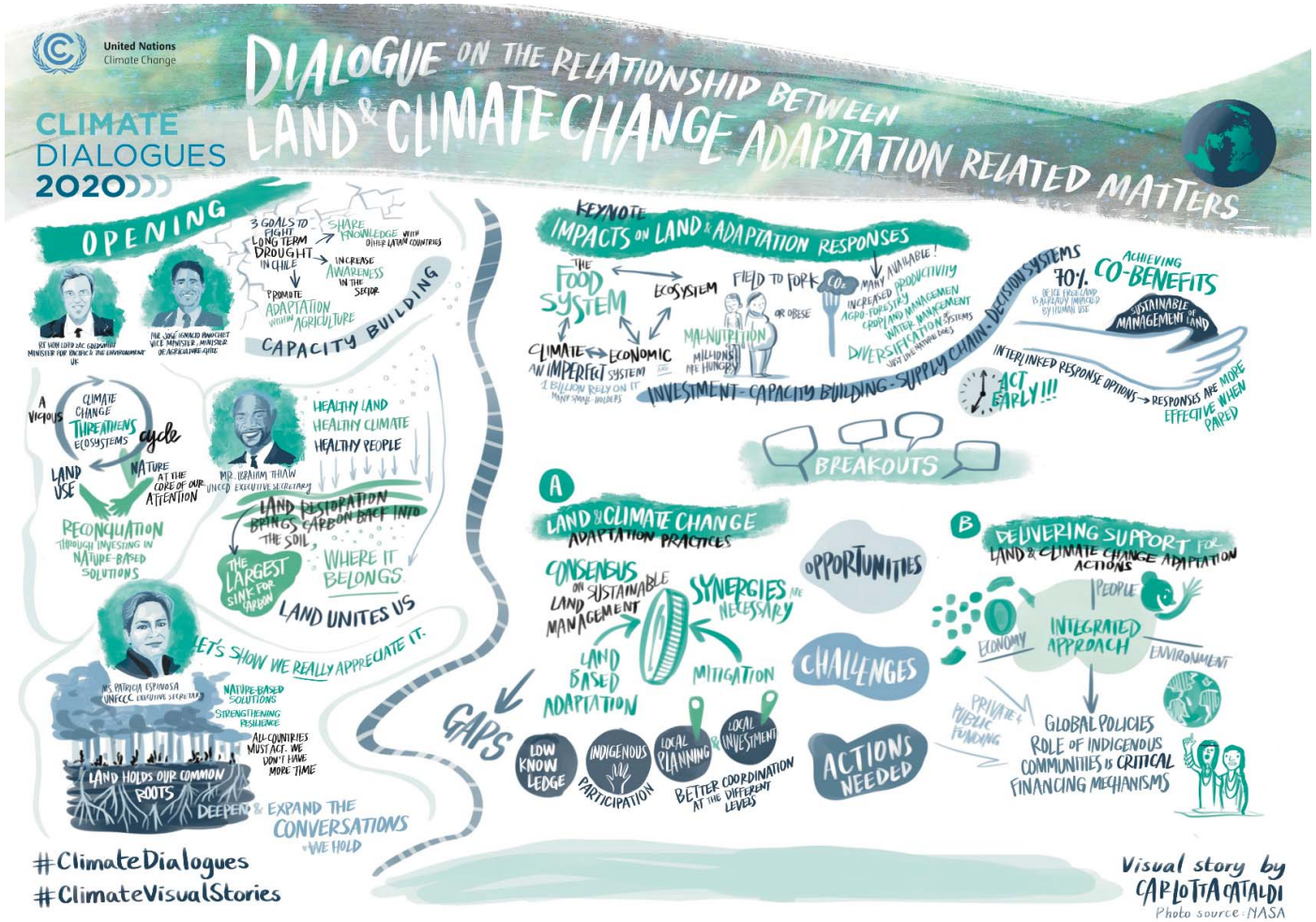
Annex II

Guiding questions for discussion groups

Breakout group	*Guiding questions*
Breakout group 1: land and climate change adaptation practices	What are the opportunities, challenges and gaps in strengthening linkages between land and climate change adaptation practices?
	What actions are needed to leverage these opportunities and address the challenges and gaps in strengthening the linkages between land and climate change adaptation practices?
Breakout group 2: delivering support for land and climate change adaptation actions	What are the opportunities and challenges in enabling the delivery of support for land and climate change adaptation under the UNFCCC?
	What actions are needed to leverage the opportunities and address the challenges and gaps for delivering integrated responses across the land sector and support climate-resilient development pathways?
Breakout group 3: assessing/monitoring land adaptation to climate change	What are the opportunities, challenges and gaps for enhancing the assessment of land adaptation to climate change?
	What actions are needed to leverage these opportunities and address the challenges and gaps in assessing land adaptation to climate change?
Breakout group 4: policy approaches for land management and climate change adaptation	What are the opportunities and challenges for the considerations regarding different groups, communities and policy issues across land management and climate change adaptation actions?
	What actions are needed to leverage these opportunities and address the challenges and gaps to strengthen policy approaches for land management and climate change adaptation?

Annex III

Visual story artwork – day 1



Annex IV

Visual story artwork – day 2