



**CPF**  
Collaborative Partnership  
on Forests

# Challenges and Opportunities in Turning the Tide on Deforestation

*Joint Statement of the  
Collaborative Partnership  
on Forests*



DEPARTMENT OF  
ECONOMIC AND  
SOCIAL AFFAIRS



Halting deforestation is an essential lever in the Decade of Action to achieve the Sustainable Development Goals (SDG) by 2030, and for confronting the “quadruple planetary emergency,” comprising a climate crisis, a nature crisis, an inequality crisis and a global health crisis.<sup>1</sup> It requires concerted action by governments, the private sector and civil society to achieve transformational change in food systems and to promote sustainable agricultural and forest value chains that halt deforestation.<sup>2</sup>

The United Nations Secretary-General António Guterres has called for scaling up action on “turning the tide on deforestation” and stated that “we must halt deforestation, restore degraded forests and change the way we farm” (Climate Action Summit, September 2019).

This Joint Statement of the Collaborative Partnership on Forests presents sound scientific facts and figures around the current status of deforestation and the multidimensional services provided by forests. It also aims to support countries and other key stakeholders to address the issue. The statement builds on the outcomes and recommendations of the Collaborative Partnership on Forests International Conference “From Aspiration to Action – working together to halt deforestation and increase forest area” held in 2018.

The Collaborative Partnership on Forests has a key role to play in building consensus and policy coherence to protect and sustainably manage forest, providing data and analysis for solutions and agreements, and accelerating action in countries through the participation and technical support of its members.



## 1

Deforestation and forest degradation continue to take place at an alarming pace, with the rate increasing in Africa. Even though deforestation has slowed or reversed in some regions, progress has been insufficient to meet SDG target 15.2 to sustainably manage all types of forests, and to halt and reverse deforestation by 2020. Forests cover 31 percent of the Earth's land area, which is just over 4 billion hectares. Approximately half of the forest area is relatively intact, and more than one-third is primary forest. Since 1990, an estimated 420 million hectares of forest has been lost through deforestation. From 2015 to 2020, the rate of deforestation was estimated at 10 million hectares per year, down from 16 million hectares per year in the 1990s. At the global level, the rate of deforestation exceeds the rate of forest expansion – through natural regeneration, afforestation and reforestation – resulting in a net loss of 178 million hectares of forest since 1990. Gains and losses of forest area generally occur in different types of forests resulting in a decline in the total area of primary forests, and, consequently, in their irreplaceable social, climate and ecological values.<sup>3 4 5</sup> Africa had the highest net loss of forest area from 2010 to 2020 followed by South America. Since 1990, Africa has reported an increase in the rate of net loss, while South America's losses have decreased substantially, by more than half since 2010 relative to the previous decade. Asia showed the highest net gain in forest area in the period 2010–2020.<sup>6</sup>

## 2

Without halting and reversing deforestation, climate goals cannot be met. Forests are an integral part of the climate solution. Reducing Emissions from Deforestation and Forest Degradation (REDD+) remains a critical element of international climate commitments and national climate strategies. The net anthropogenic greenhouse gas (GHG) emissions due to forestry and other land use activities (FOLU) – primarily emissions due to deforestation – account for 11 percent of global emissions.<sup>7,8</sup> Some scientists warn that if the deforestation of tropical forests, especially Amazonia, was to reach an ecological tipping point (turning them into scrublands), climate goals would become unattainable.<sup>9</sup> Moreover, immediate action to avert such drastic ecological shifts would be significantly less costly than attempting to reverse them later.<sup>10</sup> A broad range of nature-based solutions can provide up to one-third of cost-effective climate mitigation needed between now and 2030 to stabilize warming to below 2° C.<sup>11</sup> Among these, reducing deforestation and forest degradation – including of peatlands and mangroves – are some of the most effective, mature and robust options.<sup>12</sup> Many countries included sustainable land use as part of their Nationally Determined Contributions (NDC), and more than 50 countries specifically refer to REDD+ in their NDCs.<sup>13</sup>

## 3

Forests are home to most of the Earth's terrestrial biodiversity, but this precious wealth is under threat from deforestation and forest degradation. Forests should be featured prominently in the post-2020 global biodiversity framework. Forests provide habitats for 80 percent of amphibian species, 75 percent of bird species and 68 percent of mammal species.<sup>14</sup> Approximately 60 percent of all vascular plants are found in tropical forests.<sup>15</sup> Mangroves provide breeding grounds and nurseries for numerous species of fish and shellfish.<sup>16</sup> An estimated 75 percent of the 115 leading food crops globally – together representing 35 percent of global food production – benefit from pollination by animals,<sup>17</sup> many of which live in forests. The biodiversity of forests varies considerably according to factors such as forest type, geography, climate and soils – in addition to human pressure. Deforestation and forest degradation contribute significantly to the ongoing loss of biodiversity. Reductions in forest patch size and increases in patch isolation have been shown to decrease the abundance of birds, mammals, insects and plants by 20 to 75 percent, impacting ecological functions such as seed dispersal and, hence, forest structure while also contributing to a reduction in ecosystem services such as carbon sequestration, erosion control, pollination and nutrient cycling.<sup>18</sup> A forest-specialist index that represents forest ecosystem health, focusing on forest dependent species, fell by 53 percent between 1970 and 2014, highlighting the increased risk of these species becoming vulnerable to extinction.<sup>19</sup> Only 40 percent of the world's forests still have a high level of integrity<sup>20</sup> with boreal coniferous forests and tropical rainforests being the least fragmented and most continuous.<sup>21 22</sup> In the Amazon and Congo basins, however, land-use conversion is causing rapid change. Composite indices of biodiversity, including richness and evenness of species, still need to be developed for more accurate assessment of forests viability.

## 4

Forests are a source of sustainable livelihoods, prosperity and resilience. Sustainably managed forests provide livelihoods, energy and food security for many rural poor. Worldwide, around 1 billion people depend to some extent on forest foods such as wild meat, edible insects, edible plant products, mushrooms and fish.<sup>23</sup> Some 2.4 billion people – in both urban and rural settings – use wood-based energy for cooking.<sup>24</sup> Roughly one-third of the world's population has a close dependence on forests and forest products.<sup>25</sup> Around 820 million people live in tropical forests or savannahs,<sup>26</sup> and an estimated 1.2 billion people depend on agroforestry farming systems.<sup>27</sup> Forests play a key role in water security for over half of the world's population and their domestic, agricultural and/or industrial needs.<sup>28</sup> Sustainable, inclusive and diversified forest products value chains increase the value of forests, make efficient use of renewable resources and contribute to sustainable consumption and production through enhanced use of renewable forest resources to replace non-renewable materials and sources of energy.<sup>29</sup> Taking into account direct, indirect and induced employment, the formal forest sector provides an estimated 45 million jobs globally and labour income in excess of USD 580 billion

per year.<sup>30</sup> The informal sector is estimated to provide employment for an additional 41 million people.<sup>31</sup> Forests and trees contribute to ecosystem resilience and provide ecosystem services that reduce the vulnerability of local communities to climate change. When disaster strikes or crops fail, forests act as safety nets that can provide the affected communities with food and income.<sup>32</sup> Sustainably managed forest ecosystems can also help minimize the likelihood of agricultural losses from drought, soil erosion, landslides and floods.

## COVID-19 and Deforestation

**Healthy, resilient forests are key to decreasing the risk of zoonosis. Deforestation amplifies health risks, such as that posed by the COVID-19 outbreak.**<sup>33</sup> At least 60 percent of human infections are considered to have originated in animals.<sup>34 35 36</sup> When forests are cleared for agricultural use, broader contacts and human exposure to vectors of wildlife pathogens increase the risk of transmission of zoonotic (animal-to-human) diseases.<sup>37</sup> Increased pressure on forests and other ecosystems together with climate change are some of the human-mediated factors driving the emergence of zoonotic diseases, and thus increasing the risk of future pandemics.<sup>38 39 40</sup> Furthermore, air pollution caused by burning biomass in land clearing processes can exacerbate the respiratory problems resulting from COVID-19 and put additional pressure on already overburdened health services.<sup>41 42</sup>

**The COVID-19 pandemic has exacerbated deforestation pressures and heightened the urgency of action to support sustainable forest management.** The COVID-19 pandemic has generated a range of additional risks that may result in a significant increase in deforestation, including, weakened law enforcement, increased illegal activities in forests and the deregulation and relaxation of environmental laws.<sup>43</sup> Lockdowns have led to disruptions in markets and supply chains and caused job losses, triggering reverse migration into rural areas and increasing pressure on forests to provide subsistence livelihoods. The socio-economic distress resulting from the COVID-19 pandemic is now exacerbating and deepening pre-existing inequalities, exposing vulnerabilities in social, political, economic and biodiversity systems, which are in turn amplifying the impacts of the pandemic.<sup>44</sup> According to the World Bank, between 88 and 105 million people could be pushed into extreme poverty, setting poverty reduction back by around three years.<sup>45</sup>

**“Building back better” requires halting deforestation and increasing investment in ecosystem restoration.** Healthy forests are essential to “building back better” and must be part of the “One Health” approach, that seeks to achieve optimal health outcomes by recognizing the interconnections between people, animals, plants and their shared environment. The extent to which global efforts to avert the climate emergency succeed or fail will depend on how we rebuild our economies today.<sup>46</sup> Adequate resources for sustainably managing forest landscapes should be core elements of national, regional and global COVID-19 recovery plans, planting the seeds for a circular economy and a green future.<sup>47</sup> There is a clear need to unlock investment opportunities that strengthen livelihoods, are deforestation-free, and mitigate the risks of future zoonotic diseases.<sup>48</sup> This should include ambitious investments to implement REDD+ at scale, and strong support to restore hundreds of millions of hectares pledged to ecosystem restoration under various international and regional initiatives,<sup>49 50 51</sup> thus offering large opportunities to enhance rural livelihoods and economies, including creating jobs.

## 5

**Halting deforestation requires taking action beyond the forest sector, notably by transforming agricultural and food systems.** Agricultural expansion is the most significant driver of global deforestation and accounts for about 73 percent of tropical deforestation, of which 40 percent is due to large-scale commercial agriculture and 33 percent to small-scale subsistence use. Other drivers are mining (7 percent), infrastructure (10 percent) and urban expansion (10 percent).<sup>52</sup> Underlying factors affecting the conversion of forests to agriculture include population growth, agricultural development, a lack of land-tenure security and the poor governance of land-use change.<sup>53</sup> Increasing demand for agricultural products needs to be met through productive landscapes, sustainable intensification, integrated production systems and circular economies – building upon innovation as well as traditional knowledge to limit expansion of agricultural areas. Production support and incentives should be complemented by monitoring and enforcing regulations to limit forest conversion. Where commercial agriculture is the principal driver of land-use change, enhanced governance is needed, including social and environmental safeguards, public and private-sector commitments to zero deforestation and jurisdictional approaches. Where subsistence agriculture is the key driver, support to adopt more sustainable production practices needs to be complemented with broader poverty alleviation and rural development interventions, notably strengthening tenure. Sustainable production and consumption patterns (SDG 12) are particularly critical to transform food systems to overcome both degradation of natural resources and food insecurity. Reducing food loss and waste, restoring the productivity of degraded agricultural lands, consumer education and a switch to healthier diets from sustainable food systems can contribute significantly to halting agricultural expansion and related deforestation.<sup>54</sup>

## 6

**Damaging forest fires are symptomatic of an imbalance in natural systems exacerbated by human interventions. Unless we work to prevent them, forest fires could become one of the most important accelerators of deforestation.** An average of 122 million hectares of forests are annually affected by forest fires, pests, diseases, invasive species, drought and adverse weather, with 76 million hectares affected by forest fire alone.<sup>55</sup> A mutually reinforcing cycle of climate change and wildfire is emerging. Wildfires increase degradation through their impacts on forest ecosystems, and degradation contributes to wildfires in altered and secondary forests with exposed fuels, invasive species and recurring fires, and associated impacts on forest health.<sup>56</sup> Available data shows a trend of increasing frequency and intensity of uncontrolled fires adversely affecting biodiversity, ecological services, human well-being and livelihoods and national economies.<sup>57</sup> Extreme wildfires are the result of past and present policy, planning and governance decisions that – coupled with increasingly adverse weather conditions due to climate change – create the conditions for fires to ignite and spread across landscapes beyond the capacity of societies to suppress them. Immediate action is

required to prevent extreme wildfires where possible and to limit the disastrous consequences of such events. The impacts of extreme wildfires can be significantly reduced through investments in wildfire prevention and integrated fire management. Application of such approaches, tools and technologies is more cost-effective in the long run than fighting larger and faster spreading wildfires.<sup>58</sup>

## 7

**Ensuring the legality of timber production and trade, and strengthening forest governance, are crucial for tackling deforestation.** The International Criminal Police Organization (INTERPOL) estimates that the value of illegal timber trade lies in the range of USD 51–152 billion per year.<sup>59</sup> The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) promotes the sustainable trade of approximately 300 timber species that are at risk of over-exploitation through sustainability and legality standards. Demand-side commitments to legality, such as those made by both producer and consumer countries within the framework of the FAO-EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan and associated bilateral Voluntary Partnership Agreements (VPA) processes, have shown that trade is an effective tool for incentivizing governance reforms to promote legal and sustainable forest management and economic development. Furthermore, demand-side legislation including the European Union Timber Regulation (EUTR) and import regulation, the United States' Lacey Act Amendment, Japan's Clean Wood Act and the Republic of South Korea's Act on Sustainable Use of Timber, among others, shape a global trade environment where the legality of timber imports must be demonstrated. Voluntary certification is also a valuable tool and already covers more than one-third of industrial roundwood production.<sup>60</sup> Progress in addressing illegality requires continued commitments to transparency and to eliminating corruption, as well as adequate and predictable funding for enforcement. Effective law enforcement depends critically upon understanding and responding to the needs of indigenous peoples and local communities.<sup>61</sup>

## 8

**Important public and private commitments have been made to halt and reverse deforestation, but implementation is lagging and should be accelerated.** The objective to reduce, halt and reverse forest loss has been adopted across different international commitments by countries and the private sector, including the SDGs (specifically SDG 15), the Paris Agreement, the Global Forest Goals (GFG) of the United Nations Strategic Plan for Forests (UNSPF) 2030, the New York Declaration on Forests (2014), as well as the Consumer Goods Forum's 2010 pledge to achieve zero-net deforestation for key forest-risk commodities in global supply chains by 2020.<sup>62</sup> Global Forest Goal 1 in the United Nations Strategic Plan for Forests sets a target of 3 percent increase in forest area by 2030 (UN General Assembly resolution 71/285). The Bonn Challenge, launched in 2011, sets high ambitions for restoring deforested and degraded land. The UN Decade on Ecosystem Restoration 2021–2030 (UNGA resolution 73/284) aims to scale up efforts to prevent, halt and

reverse the degradation of ecosystems worldwide. Nevertheless, implementation is not on track. In key supply chains, the number of companies with zero deforestation commitments are still in the minority, and even these commitments have been too slowly implemented and are also insufficiently ambitious.<sup>63 64</sup> There is too little information from companies on their actions and results to judge their progress in achieving their commitments.<sup>65</sup> Few countries have met their Bonn commitments thus far, with only two completed (Pakistan and the United States of America) and limited reporting on progress in most other countries.<sup>66</sup> Too often, the results of significant efforts in tree-planting campaigns are jeopardized by insufficient maintenance, contributing to very low survival rates. Jurisdictional or integrated landscape approaches are increasingly seen as opportunities to align the actions of the private and public sectors and to demonstrate the results at the territorial level.<sup>67</sup> Renewed efforts have to be made to address the problems that countries and companies are facing to advance the implementation process.

9

**Policy coherence – across sectoral, environmental and economic policies – needs to be strengthened to accelerate change and halt deforestation.**

Governments must adopt evidence-based coherent and coordinated sectoral, environmental and economic policies to align public incentives and ensure consistent implementation across national and sub-national levels. The degree of coherence currently varies substantially across countries, and misalignments are rarely acknowledged.<sup>68</sup> Synergies and trade-offs inherent in land-use systems need to be better understood and managed, including through integrated land use planning and institutional dialogue. Both weak institutional co-ordination and overly complex institutional arrangements contribute to policy misalignments.<sup>69</sup> Clear policy and legal frameworks are needed to govern land use and land use change, including secure land tenure systems that recognize traditional customary rights to use land and forest products.<sup>70</sup> National policy goals should be consistent with international commitments, such as the SDGs and the Paris Agreement. They should further reflect the transboundary impacts associated with national strategies, such as measures to address “imported deforestation.” Supply chain legislation, including due diligence requirements, can accelerate progress *vis-à-vis* existing voluntary private sector commitments. Due diligence requirements for imports should be complemented by measures to strengthen the capacity of producer countries to meet requirements in order not to exclude poorer countries and producers with less capacity to demonstrate compliance from markets.

10

**The true costs of deforestation and the value of standing forests are not reflected in policies and investment decisions, nor in commodity prices. Reforms to agricultural subsidies are needed to reduce deforestation, catalyse climate action, protect biodiversity and foster food security.** Strong market signals about the value of standing forests are needed. Natural capital accounting is advancing, but it is far from being adopted systematically.<sup>71</sup> Potentially

irreversible effects of deforestation, including on ecosystem services, are not fully accounted for in the monetary value of forests included in countries' wealth accounts.<sup>72</sup> Economic signals from policy and market prices rarely reflect the social costs and benefits of ecosystem services, which remain largely unpriced or underpriced.<sup>73</sup> Too often, policymakers do not consider the value of natural capital and ecosystems services when making decisions on agricultural support.<sup>74</sup> Agricultural production support amounts to well over USD 500 billion every year, but, according to the Organisation for Economic Co-operation and Development (OECD), most current support to agriculture distorts markets, stifles innovation and harms the environment rather than financing long term investment.<sup>75</sup> Since agriculture commodities are broadly traded, some countries' domestic policies and agricultural support measures can influence land-use changes in other countries and lead to deforestation.<sup>76</sup> Globally, the efficiency of subsidies to agriculture in terms of benefits to farmers is low, and better designed measures could cut public expenditures without reducing actual support to the agriculture sector.<sup>77</sup> Reforming fiscal instruments and subsidies to incentivize sustainable land use and reorient existing public funding commitments to boost long-term performance of the agriculture sector and reflect environmental costs, can be a trigger for systemic change that advances climate, biodiversity and food security goals.

# 11

**To tackle the full scale of deforestation requires more strategic public investment and increased of public and private climate finance at all levels.** In order to unlock large-scale investments in forest conservation and restoration, adequate and predictable finance for REDD+ is needed. Conservation is less costly than restoration.<sup>78</sup> Private sector climate commitments and related interest in carbon offsets from reducing deforestation have increased significantly in recent years, both project developers and corporate buyers expect more stable market conditions. Public sector funds can be used to support establishing enabling conditions. Public investments appraisals in all sectors must include a risk assessment of expansion into forest land. Dedicated public investment is needed for data provision and access, monitoring and enforcement, tenure support, research and development, technical assistance to small producers to adopt sustainable practices, and social protection for vulnerable forest dwellers. Strategic public investment can channel much larger amounts of private finance. Public funding should facilitate private investment to transform agricultural and food production systems to more sustainable models, using de-risking tools such as guarantees, blended finance and support for innovative microfinance initiatives. Investments in land-based mitigation measures make up a mere 2 percent of climate finance.<sup>79</sup> Advocacy for and commitments to adequate and predictable finance to sustainably manage all types of forests and for forests as a climate solution, including through REDD+, is urgently needed.

## 12

Maintaining forest area and halting deforestation require the active participation of all stakeholders, including indigenous peoples and local communities, women and youth, and requires that their rights be recognized and protected. Systematic multi-stakeholder dialogue between the public and private sectors and civil society as well as across levels of government is a vehicle to achieve transformation and results at scale. As forest regulators, and often large-scale forest owners, governments are responsible for establishing participatory, inclusive and transparent processes that promote the engagement of local stakeholders. This should include their meaningful participation to ensure the legitimacy of land-use plans and for obtaining their free, prior and informed consent to implement and monitor such plans.<sup>80</sup> Civil society organizations play a key role as watchdogs holding governments and as business to account, and agents of change fostering social and sustainability innovation.<sup>81</sup> Better access to information can enhance transparency and accountability. Indigenous peoples manage approximately 28 percent of the world's land surface, intersecting with 40 percent of terrestrial protected areas and ecologically intact landscapes, and 37 percent of all remaining natural lands.<sup>82</sup> Their traditional knowledge of forests and of the pool of species adapted to local conditions can play a crucial role in ensuring the sustainability of ecosystem services and food security, and can support restoration, regeneration and biodiversity conservation.<sup>83</sup> Secure collective tenure rights for indigenous peoples and local communities are strongly correlated with reduced deforestation and forest degradation.<sup>84</sup> Strengthening rights and access to land, resources and investments in and around forests presents an opportunity to propel women and youth to be agents of change and to encourage a long-term, sustainable approach to forest management.<sup>85</sup>

## 13

Innovation is paving the way for better data to inform evidence-based decision-making to halt and reverse deforestation. Forest and land-use monitoring systems are being developed using more advanced tools than ever, facilitating the generation of more transparent and accurate forest data. Countries have increasingly better access to and make better use of high-resolution geospatial data and enhanced computing capabilities. These forest data increase the accuracy and transparency of countries' reporting on national plans, policy processes as well as private sector supply chain commitments. Decisions based on data and analysis produce better outcomes – including in the achievement of multiple sectoral policy goals, private sector commitments and, ultimately, the SDGs and nationally determined contributions to climate-change mitigation. In order to ensure the sustained provision of high-quality forest data, forest monitoring systems must be properly embedded into institutional settings, and supported by appropriate legal arrangements. While in many countries progress is already impressive, in others more effort is needed to ensure that a sound legal basis is established, forest data are available and are relevant to stakeholder concerns, are of high technical quality

and are produced by national forest monitoring systems and institutions with adequate capacity and financial continuity.<sup>86</sup>

# 14

**Mobilizing global partnerships and cooperation is crucial for achieving the transformational change necessary to halt deforestation.** The complexity of the direct and indirect drivers of deforestation calls for a combination of innovative policy and regulatory frameworks, private and public leadership, citizen-led movements, appropriate finance, knowledge exchange and technical and technological cooperation. By making use of existing fora and international initiatives on forests, countries and regions can deepen their common understanding of the barriers and opportunities for addressing deforestation and forest degradation. Tackling deforestation and forest degradation must also remain high on the global agendas on climate change, biodiversity, agriculture, international trade, poverty reduction and human rights and in the context of public-private initiatives.

## What is the Collaborative Partnership on Forests?

The Collaborative Partnership on Forests, established in 2001 in support of the work of the United Nations Forum on Forests, is an informal, voluntary arrangement among 15 international organizations and secretariats with substantial programmes on forests. These agencies share their experiences and build on them to produce new benefits for their respective constituencies. They collaborate to streamline and align their work and to find ways of improving forest management and conservation, and the production and trade of forest products.

Members: Center for International Forestry Research (CIFOR), Convention on Biological Diversity (CBD), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Food and Agriculture Organization of the United Nations (FAO), Global Environment Facility (GEF), International Tropical Timber Organization (ITTO), International Union for Conservation of Nature (IUCN), International Union of Forest Research Organizations (IUFRO), United Nations Convention to Combat Desertification (UNCCD), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), United Nations Forum on Forests (UNFF), United Nations Framework Convention on Climate Change (UNFCCC), World Agroforestry Centre (ICRAF) and the World Bank.

WEBSITE: [www.cpfweb.org](http://www.cpfweb.org)

- 
- <sup>1</sup> FAO. 2020. Report - Committee on Forestry - Twenty-Fifth Session. Rome. 29 pp. (also available at <http://www.fao.org/3/ne205en/ne205en.pdf>).
- <sup>2</sup> FAO. 2020. Report - Committee on Forestry - Twenty-Fifth Session. Rome. 29pp. (also available at <http://www.fao.org/3/ne205en/ne205en.pdf>).
- <sup>3</sup> Gibson, L., Lee, T. M., Koh, L. P., Brook, B.W., Gardner, T.A. Barlow, J., Peres, C.A. *et al.* 2011. Primary forests are irreplaceable for sustaining tropical biodiversity. *Nature* 478, 378–381. <https://doi.org/10.1038/nature10425>
- <sup>4</sup> Barlow, J., Gardner, T.A., Araujo, I.S., Ávila-Pires, T.C., Bonaldo, A.B., Costa, J.E., Esposito, M.C. *et al.* 2007. Quantifying the biodiversity value of tropical primary, secondary, and plantation forests. *Proceedings of the National Academy of Sciences*, 104(47): 18555. <https://doi.org/10.1073/pnas.0703333104>
- <sup>5</sup> Kormos, C., Mackey, B., Dellasala, D., Kumpe, N., Jaeger, T., Mittermeier, R. & Filardi, C. 2017. Primary Forests: Definition, Status and Future Prospects for Global Conservation. Reference Module in *Earth Systems and Environmental Sciences*, pp. 1–11.
- <sup>6</sup> FAO. 2020. *Global Forest Resources Assessment 2020*. FAO. 186 pp. (also available at <http://www.fao.org/documents/card/en/c/ca9825en>) and FRA© 2020 data base <https://fra-data.fao.org/>
- <sup>7</sup> Intergovernmental Panel on Climate Change (IPCC). 2014. *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment report of the Intergovernmental Panel on Climate Change* (Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- <sup>8</sup> Shukla, P.R., Skea, J., Slade, R., van Diemen, R., Haughey, E., Malley, J., Pathak, M. & Portugal Pereira, J., eds. 2019. Technical Summary. In R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, *et al.* eds. *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*. Intergovernmental Panel on Climate Change (IPCC). (also available at [https://www.ipcc.ch/site/assets/uploads/sites/4/2020/07/03\\_Technical-Summary-TS\\_V2.pdf](https://www.ipcc.ch/site/assets/uploads/sites/4/2020/07/03_Technical-Summary-TS_V2.pdf)).
- <sup>9</sup> Lovejoy, T.E. & Nobre, C. 2018. Amazon Tipping Point. *Science Advances*, 4(2): eaat2340. <https://doi.org/10.1126/sciadv.aat2340>
- <sup>10</sup> Dasgupta, P., Great Britain & Treasury. 2021. *The Economics of Biodiversity: The Dasgupta Review. Abridged Version*. London (also available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/957292/Dasgupta\\_Review\\_-\\_Abridged\\_Version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957292/Dasgupta_Review_-_Abridged_Version.pdf)).
- <sup>11</sup> Shukla, P.R., Skea, J., Slade, R., van Diemen, R., Haughey, E., Malley, J., Pathak, M. & Portugal Pereira, J., eds. 2019. Technical Summary. In R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. *et al.* eds. *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*. Intergovernmental Panel on

- Climate Change (IPCC). (also available at [https://www.ipcc.ch/site/assets/uploads/sites/4/2020/07/03\\_Technical-Summary-TS\\_V2.pdf](https://www.ipcc.ch/site/assets/uploads/sites/4/2020/07/03_Technical-Summary-TS_V2.pdf)).
- <sup>12</sup> Goldstein, A., Turner, W.R., Spawn, S.A., Anderson-Teixeira, K.J., Cook-Patton, S., Fargione, J., Gibbs, H.K. *et al.* 2020. Protecting irrecoverable carbon in Earth's ecosystems. *Nature Climate Change*, 10(4): 287–295. <https://doi.org/10.1038/s41558-020-0738-8>
- <sup>13</sup> Pauw, P., Cassanmagnano, D., Mbeva, K., Hein, J., Guarín, A., Brandi, C., Dzebo, A. *et al.* 2017. In: NDC Explorer [online]. [https://doi.org/10.23661/NDC\\_EXPLORER\\_2017\\_2.0](https://doi.org/10.23661/NDC_EXPLORER_2017_2.0)
- <sup>14</sup> Vié, J.-C., Hilton-Taylor, C. & Stuart, S.N., eds. 2008. *Wildlife in a changing world. An analysis of the 2008 IUCN Red List of Threatened Species*. IUCN, Gland, Switzerland. 184 page (also available at <https://portals.iucn.org/library/efiles/documents/RL-2009-001.pdf>).
- <sup>15</sup> Burley, J. 2002. Forest biological diversity: An overview. *Unasylva*, 209: 3–9.
- <sup>16</sup> FAO & UNEP. 2020. *The State of the World's Forests 2020: Forests, biodiversity and people*. The State of the World's Forests (SOFO) No. 2020. Rome, Italy, FAO and UNEP. 214 pp. (also available at <http://www.fao.org/documents/card/en/c/ca8642en>).
- <sup>17</sup> Klein, A.-M., Vaissière, B.E., Cane, J.H., Steffan-Dewenter, I., Cunningham, S.A., Kremen, C. & Tscharntke, T. 2007. Importance of pollinators in changing landscapes for world crops. *Proceedings of the Royal Society B: Biological Sciences*, 274(1608): 303–313. <https://doi.org/10.1098/rspb.2006.3721>
- <sup>18</sup> FAO & UNEP. 2020. *The State of the World's Forests 2020: Forests, biodiversity and people*. The State of the World's Forests (SOFO) No. 2020. FAO and UNEP. Rome 214 pp. (also available at <http://www.fao.org/documents/card/en/c/ca8642en>).
- <sup>19</sup> Green, E., McRae, L., Harfoot, M., Simonson, W. & Baldwin-Cantello, W. 2019. Below the Canopy. Plotting global trends in forest wildlife populations. WWF. Gland, Switzerland. 23 pp. (also available at <https://www.wwf.org.uk/sites/default/files/2019-08/BelowTheCanopyReport.pdf>).
- <sup>20</sup> Grantham, H.S., Duncan, A., Evans, T.D. *et al.* 2020. Anthropogenic modification of forests means only 40% of remaining forests have high ecosystem integrity. *Nature Communications*, 11, 5978. <https://doi.org/10.1038/s41467-020-19493-3>
- <sup>21</sup> Grantham, H.S., Duncan, A., Evans, T.D. *et al.* 2020. Anthropogenic modification of forests means only 40% of remaining forests have high ecosystem integrity. *Nature Communications*, 11, 5978. <https://doi.org/10.1038/s41467-020-19493-3>
- <sup>22</sup> FAO and UNEP. 2020. *The State of the World's Forests 2020: Forests, biodiversity and people*. The State of the World's Forests (SOFO) No. 2020. FAO and UNEP. Rome 214 pp. (also available at <http://www.fao.org/documents/card/en/c/ca8642en>).
- <sup>23</sup> Burlingame, B. 2000. Wild Nutrition. *Journal of Food Composition and Analysis*, 13(2): 99–100. <https://doi.org/10.1006/jfca.2000.0897>
- <sup>24</sup> FAO. 2014. *State of the World's Forests 2014 - Enhancing the socioeconomic benefits from forests*. Rome 126 pp. (also available at <http://www.fao.org/3/a-i5588e.pdf>).

- <sup>25</sup> **FAO & UNEP.** 2020. *The State of the World's Forests 2020: Forests, biodiversity and people*. The State of the World's Forests (SOFO) No. 2020. FAO and UNEP. Rome 214 pp. (also available at <http://www.fao.org/documents/card/en/c/ca8642en>).
- <sup>26</sup> **FAO.** 2018. *The State of the World's Forests 2018: Forest pathways to sustainable development*. The State of the World's Forests (SOFO) No. 2018. Rome 139 pp. (also available at <http://www.fao.org/documents/card/en/c/l9535EN>).
- <sup>27</sup> **Chao, S.** 2012. Forest peoples: Numbers across the world. Forest Peoples Programme. 27 pp (also available at [https://www.forestpeoples.org/sites/default/files/publication/2012/05/forest-peoples-numbers-across-world-final\\_0.pdf](https://www.forestpeoples.org/sites/default/files/publication/2012/05/forest-peoples-numbers-across-world-final_0.pdf)).
- <sup>28</sup> **Vörösmarty, C.J., Lévêque, C., Revenga, C., Bos, R., Caudill, C., Chilton, J., Douglas, E.M., Meybeck, M. & Prager, D.** 2005. Chapter 7. Fresh Water. *Ecosystems and human well-being: current state and trends. Findings of the Condition and Trends Working Group.*, pp. 165–207. Millennium Ecosystem Assessment (also available at <https://www.millenniumassessment.org/en/Condition.html>).
- <sup>29</sup> **Mitsugi, H. & Ikram Yaakob, M.S.** 2018. Co-chairs summary report. Paper presented at CPF International Conference *Working across sectors to halt deforestation and increase forest area. From aspiration to action*. 14 March 2018, Rome, Collaborative Partnership on Forests.
- <sup>30</sup> **FAO.** 2018. *The State of the World's Forests 2018: Forest pathways to sustainable development*. The State of the World's Forests (SOFO) No. 2018. Rome 139 pp. (also available at <http://www.fao.org/documents/card/en/c/l9535EN>).
- <sup>31</sup> **FAO.** 2014. *State of the World's Forests 2014 - Enhancing the socioeconomic benefits from forests*. Rome 126 pp. (also available at <http://www.fao.org/3/a-i5588e.pdf>).
- <sup>32</sup> **FAO.** Undated. Climate Smart Agriculture Sourcebook - B3 - 1 Forests and climate change. In: *Food and Agriculture Organization of the United Nations* [online]. [Cited 6 January 2021]. <http://www.fao.org/climate-smart-agriculture-sourcebook/production-resources/module-b3-forestry/chapter-b3-1/en/>
- <sup>33</sup> **Tollefson, J.** 2020. Why deforestation and extinctions make pandemics more likely. *Nature*, 584(7820): pp 175–176. <https://doi.org/10.1038/d41586-020-02341-1>
- <sup>34</sup> **UNEP & International Livestock Institute.** 2020. *Preventing the next pandemic: Zoonotic diseases and how to break the chain of transmission*. Nairobi, Kenya, UNEP. 82 pp. (also available at <https://www.unenvironment.org/resources/report/preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and>).
- <sup>35</sup> **Jones, K.E., Patel, N.G., Levy, M.A., Storeygard, A., Balk, D., Gittleman, J.L. & Daszak, P.** 2008. Global trends in emerging infectious diseases. *Nature*, 451(7181): pp 990–993. <https://doi.org/10.1038/nature06536>
- <sup>36</sup> **FAO, CIRAD, CIFOR & WCS.** 2020. White paper: Build back better in a post-COVID-19 world – Reducing future wildlife-borne spillover of disease to humans. Sustainable Wildlife Management (SWM) Programme. Rome 48 pp. <https://doi.org/10.4060/cb1503en>
- <sup>37</sup> **Bloomfield, L.S.P., McIntosh, T.L. & Lambin, E.F.** 2020. Habitat fragmentation, livelihood behaviors, and contact between people and nonhuman primates in Africa. *Landscape Ecology*, 35(4):

pp. 985–1000. <https://doi.org/10.1007/s10980-020-00995-w>

- <sup>38</sup> Rulli, M.C., Santini, M., Hayman, D.T.S. & D’Odorico, P. 2017. The nexus between forest fragmentation in Africa and Ebola virus disease outbreaks. *Scientific Reports*, 7(1): 41613. <https://doi.org/10.1038/srep41613>
- <sup>39</sup> Gibb, R., Redding, D.W., Chin, K.Q., Donnelly, C.A., Blackburn, T.M., Newbold, T. & Jones, K.E. 2020. Zoonotic host diversity increases in human-dominated ecosystems. *Nature*, 584(7821): pp. 398–402. <https://doi.org/10.1038/s41586-020-2562-8>
- <sup>40</sup> Epstein, J.H., Gurley, E.S., Patz, J.A., Islam, M.S., Luby, S.P., Daszak, P. & Hahn, M.B. 2014. The Role of Landscape Composition and Configuration on Pteropus giganteus Roosting Ecology and Nipah Virus Spillover Risk in Bangladesh. *The American Journal of Tropical Medicine and Hygiene*, 90(2): pp. 247–255. <https://doi.org/10.4269/ajtmh.13-0256>
- <sup>41</sup> Wu, X., Nethery, R.C., Sabath, M.B., Braun, D. & Dominici, F. 2020. Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. *Science Advances*, 6(45): eabd4049. <https://doi.org/10.1126/sciadv.abd4049>
- <sup>42</sup> Moutinho, P., Alencar, A., Rattis, L., Arruda, V., Castro, I. & Artaxo, P. 2020. *The Amazon in Flames: Deforestation and fire in the Amazon during the COVID-19 Pandemic*. Technical Note [online]. IPAM Amazônia. [Cited 5 January 2021]. <http://ipam.org.br>, <https://ipam.org.br/bibliotecas/the-amazon-in-flames-deforestation-and-fire-in-the-amazon-during-the-covid-19-pandemic/>
- <sup>43</sup> Brancalion, P.H.S., Broadbent, E.N., de-Miguel, S., Cardil, A., Rosa, M.R., Almeida, C.T., Almeida, D.R.A. *et al.* 2020. Emerging threats linking tropical deforestation and the COVID-19 pandemic. *Perspectives in Ecology and Conservation*, 18(4): pp. 243–246. <https://doi.org/10.1016/j.pecon.2020.09.006>
- <sup>44</sup> United Nations. 2020a. A UN Framework for the Immediate Socio-economic Response to COVID-19. UN Executive Office of the Secretary-General (EOSG) Policy Briefs and Papers No. 6. United Nations. (also available at [https://www.un-ilibrary.org/public-health/a-un-framework-for-the-immediate-socio-economic-response-to-covid-19\\_420812ce-en](https://www.un-ilibrary.org/public-health/a-un-framework-for-the-immediate-socio-economic-response-to-covid-19_420812ce-en)).
- <sup>45</sup> Lakner, C., Yonzan, N., Gerszon Malher, D., Castaneda Aguilar, R.A., Wu, H. & Fleury, M. 2020. Updated estimates of the impact of COVID-19 on global poverty: The effect of new data. In: *World Bank Blogs* [online]. [Cited 5 January 2021]. <https://blogs.worldbank.org/opendata/updated-estimates-impact-covid-19-global-poverty-effect-new-data>
- <sup>46</sup> World Economic Forum. 2020. The right response to COVID-19 can avert the climate crisis. In: *World Economic Forum* [online]. [Cited 5 January 2021]. <https://www.weforum.org/agenda/2020/06/enlightened-response-covid-19-avert-climate-emergency/>
- <sup>47</sup> FAO. 2020. Chairperson’s summary report. COVID-19 Forestry Webinar Week, 22–25 June 2020 Building back better: COVID-19 pandemic recovery contributions from the forest sector. In: *Food and Agriculture Organization of the United Nations* [online]. [Cited 5 January 2021]. <http://www.fao.org/about/meetings/cofo/covid-19-forestry-webinar-week/chairperson-summary-report/en/>

- <sup>48</sup> **Collaborative Partnership on Forests**. 2020. Towards sustainability: forest solutions in response to the COVID-19 pandemic. Joint statement by the Collaborative Partnership on Forests. United Nations. <http://www.cpfweb.org/49939-01432517605fa82d4a063efc442c48fe9.pdf>
- <sup>49</sup> **International Union for Conservation of Nature (IUCN)**. Undated. The Bonn Challenge. In: *Restore our Future - Bonn Challenge* [online]. [Cited 6 January 2021]. <https://www.bonnchallenge.org>
- <sup>50</sup> **"4 per 1000" Executive Secretary**. Undated. Welcome to the "4 per 1000" Initiative [online]. [Cited 6 January 2021]. <https://www.4p1000.org>
- <sup>51</sup> **FAO & UNEP**. 2020. The United Nations Decade on Ecosystem Restoration -Strategy. United Nations. 51 pp. <https://wedocs.unep.org/bitstream/handle/20.500.11822/31813/ERDStrat.pdf?sequence=1&isAllowed=y>
- <sup>52</sup> **Hosonuma, N., Herold, M., De Sy, V., De Fries, R.S., Brockhaus, M., Verchot, L., Angelsen, A. & Romijn, E.** 2012. An assessment of deforestation and forest degradation drivers in developing countries. *Environmental Research Letters*, 7(4): 044009. <https://doi.org/10.1088/1748-9326/7/4/044009>
- <sup>53</sup> **FAO**. 2016. *State of the World's Forests 2016: Forests and agriculture: land use challenges and opportunities*. The State of the World's Forests (SOFO). Rome 125 pp. (also available at <http://www.fao.org/documents/card/en/c/ffed061b-82e0-4c74-af43-1a999a443fbf/>).
- <sup>54</sup> **Searchinger, T., Waite, R. & Ranganathan, J.** 2019. *Creating a sustainable food future. A menu of solutions to feed nearly 10 billion people by 2050*. E. Matthews, ed. World Resources Institute. 564 pp. (also available at [https://research.wri.org/sites/default/files/2019-07/WRR\\_Food\\_Full\\_Report\\_0.pdf](https://research.wri.org/sites/default/files/2019-07/WRR_Food_Full_Report_0.pdf)).
- <sup>55</sup> Average on the 2000–2017 period, calculated from data of the FAO Global Forest Resource Assessment platform, ©FRA 2020: <https://fra-data.fao.org/WO/fra2020/disturbances/> and <https://fra-data.fao.org/WO/fra2020/areaAffectedByFire/>
- <sup>56</sup> **Robinne, F.-N., Burns, J., Kant, P., Flannigan, M.D., Kleine, M., de Groot, B. & Wotton, D.M., eds.** 2018. Global fire challenges in a warming world. Summary Note of a Global Expert Workshop on Fire and Climate Change. *IUFRO Occasional Paper*. Paper presented at Global Expert Workshop on Fire and Climate Change, December 2018, Vienna. (also available at [https://www.researchgate.net/publication/330565929\\_Global\\_Fire\\_Challenges\\_in\\_a\\_Warming\\_World](https://www.researchgate.net/publication/330565929_Global_Fire_Challenges_in_a_Warming_World)).
- <sup>57</sup> **Robinne, F.-N., Burns, J., Kant, P., Flannigan, M.D., Kleine, M., de Groot, B. & Wotton, D.M., eds.** 2018. Global fire challenges in a warming world. Summary Note of a Global Expert Workshop on Fire and Climate Change. *IUFRO Occasional Paper*. Paper presented at Global Expert Workshop on Fire and Climate Change, December 2018, Vienna. (also available at [https://www.researchgate.net/publication/330565929\\_Global\\_Fire\\_Challenges\\_in\\_a\\_Warming\\_World](https://www.researchgate.net/publication/330565929_Global_Fire_Challenges_in_a_Warming_World)).
- <sup>58</sup> **World Bank**. 2020. Managing Wildfires in a Changing Climate. World Bank Policy Note. World Bank Group, PROFOR. 34 pp. (also available at [https://www.profor.info/sites/profor.info/files/PROFOR\\_ManagingWildfires\\_2020\\_final.pdf](https://www.profor.info/sites/profor.info/files/PROFOR_ManagingWildfires_2020_final.pdf)).
- <sup>59</sup> **INTERPOL**. 2016. *Uncovering the Risks of Corruption in the Forestry Sector*. 20 pp. (also available at [https://globaltimbertrackingnetwork.org/wp-content/uploads/2017/12/INTERPOL\\_2016\\_Uncovering-the-Risks-of-Corruption-in-the-Forestry-Sector.pdf](https://globaltimbertrackingnetwork.org/wp-content/uploads/2017/12/INTERPOL_2016_Uncovering-the-Risks-of-Corruption-in-the-Forestry-Sector.pdf)).

- <sup>60</sup> Mitsugi, H. & Ikram Yaakob, M.S. 2018. Co-chairs summary report. Paper presented at CPF International Conference *Working across sectors to halt deforestation and increase forest area. From aspiration to action*. 14 March 2018, Rome, Collaborative Partnership on Forests.
- <sup>61</sup> Mitsugi, H. & Ikram Yaakob, M.S. 2018. Co-chairs summary report. Paper presented at CPF International Conference *Working across sectors to halt deforestation and increase forest area. From aspiration to action*. 14 March 2018, Rome, Collaborative Partnership on Forests.
- <sup>62</sup> FAO. 2018. *Zero-deforestation commitments: A new avenue towards enhanced forest governance?* Forestry Working Paper No. 3. Rome 44 pp. (also available at <http://www.fao.org/documents/card/en/c/19927EN/>).
- <sup>63</sup> NYDF Assessment Partners. 2019. *Protecting and Restoring Forests. A story of large commitments yet limited progress*. New York Declaration on Forests Five-Year Assessment Report. 96 pp. (also available at <https://forestdeclaration.org/images/uploads/resource/2019NYDFReport.pdf>).
- <sup>64</sup> Taylor, R. & Streck, C. 2018. Ending Tropical Deforestation: The Elusive Impact of the Deforestation-Free Supply Chain Movement. In: *World Resources Institute (WRI)* [online]. [Cited 5 January 2021]. <https://www.wri.org/publication/ending-tropical-deforestation-elusive-impact-deforestation-free-supply-chain-movement>
- <sup>65</sup> FAO. 2018. *Zero-deforestation commitments: A new avenue towards enhanced forest governance?* Forestry Working Paper No. 3. Rome 44 pp. (also available at <http://www.fao.org/documents/card/en/c/19927EN/>).
- <sup>66</sup> Fagan, M.E., Reid, J.L., Holland, M.B., Drew, J.G. & Zahawi, R.A. 2020. How feasible are global forest restoration commitments? *Conservation Letters*, 13(3). <https://doi.org/10.1111/conl.12700>
- <sup>67</sup> Seymour, F. & Harris, N.L. 2019. Reducing tropical deforestation. *Science*, 365(6455): pp. 756–757. <https://doi.org/10.1126/science.aax8546>
- <sup>68</sup> Organisation for Economic Co-operation and Development (OECD). 2020. *Towards Sustainable Land Use: Aligning Biodiversity, Climate and Food Policies*. Paris, OECD. (also available at [https://www.oecd-ilibrary.org/environment/towards-sustainable-land-use\\_3809b6a1-en](https://www.oecd-ilibrary.org/environment/towards-sustainable-land-use_3809b6a1-en)).
- <sup>69</sup> Organisation for Economic Co-operation and Development (OECD). 2020. *Towards Sustainable Land Use: Aligning Biodiversity, Climate and Food Policies*. Paris, OECD. (also available at [https://www.oecd-ilibrary.org/environment/towards-sustainable-land-use\\_3809b6a1-en](https://www.oecd-ilibrary.org/environment/towards-sustainable-land-use_3809b6a1-en)).
- <sup>70</sup> FAO. 2016. *State of the World's Forests 2016: Forests and agriculture: land use challenges and opportunities*. The State of the World's Forests (SOFO). Rome 125 pp. (also available at <http://www.fao.org/documents/card/en/c/ffed061b-82e0-4c74-af43-1a999a443fbf/>).
- <sup>71</sup> Hein, L., Bagstad, K.J., Obst, C., Edens, B., Schenau, S., Castillo, G., Soulard, F. *et al.* 2020. Progress in natural capital accounting for ecosystems. *Science*, 367(6477): 514. <https://doi.org/10.1126/science.aaz8901>
- <sup>72</sup> Lange, G.-M., Wodon, Q. & Carey, K. 2018. *The Changing Wealth of Nations 2018 : Building a Sustainable Future*. Washington, DC: World Bank. (also available at <https://openknowledge.worldbank.org/handle/10986/29001>).

- <sup>73</sup> **TEEB for National and International Policymakers.** 2009. *The Economics of Ecosystems and Biodiversity*. 429 pp. (also available at <http://doc.teebweb.org/wp-content/uploads/2014/04/TEEB-in-national-and-international-Policy-Making2011.pdf>).
- <sup>74</sup> **The Economics of Ecosystems and Biodiversity (TEEB).** 2018. *Measuring what matters in agriculture and food systems: a synthesis of the results and recommendations of TEEB for Agriculture and Food's Scientific and Economic Foundations report*. Geneva, Switzerland, United Nations Programme for Environment. (also available at <http://teebweb.org/our-work/agrifood/reports/measuring-what-matters-synthesis/>).
- <sup>75</sup> **Organisation for Economic Co-operation and Development (OECD).** 2020. *Government policies providing more than USD 500 billion to farmers every year distort markets, stifle innovation and harm the environment* [online]. [Cited 5 January 2021]. <http://www.oecd.org/agriculture/news/government-policies-providing-more-than-usd-500-billion-to-farmers-every-year-distort-markets-stifle-innovation-and-harm-the-environment.htm>.
- <sup>76</sup> **Persson, M., Henders S., & Kastner T.** 2014. *Trading Forests: Quantifying the Contribution of Global Commodity Markets to Emissions from Tropical Deforestation*. Working Paper 384, CGD Climate and Forest Paper Series 8, Center for Global Development, Washington, DC.
- <sup>77</sup> **Gautam, M., Hayde, E. and Zhand, Y.** 2021. *Agriculture, Subsidies and Forests Designing fiscal instruments for sustainable forests*. World Bank, Washington DC 33 pp. (also available at [https://www.climateinvestmentfunds.org/sites/cif\\_enc/files/knowledge-documents/designing\\_fiscal\\_instruments.pdf](https://www.climateinvestmentfunds.org/sites/cif_enc/files/knowledge-documents/designing_fiscal_instruments.pdf)).
- <sup>78</sup> **Dasgupta, P., Great Britain & Treasury.** 2021. *The Economics of Biodiversity: The Dasgupta Review*. Abridged Version. 103 pp. (also available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/957292/Dasgupta\\_Review\\_-\\_Abridged\\_Version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957292/Dasgupta_Review_-_Abridged_Version.pdf)).
- <sup>79</sup> **Climate Policy Initiative (CPI).** 2019. *Global Landscape of Climate Finance 2019*. London, Climate Policy Initiative. 38 pp. (also available at <https://www.climatepolicyinitiative.org/wp-content/uploads/2019/11/2019-Global-Landscape-of-Climate-Finance.pdf>).
- <sup>80</sup> **FAO.** 2016. *State of the World's Forests 2016: Forests and agriculture: land use challenges and opportunities*. The State of the World's Forests (SOFO). Rome 125 pp. (also available at <http://www.fao.org/documents/card/en/c/ffed061b-82e0-4c74-af43-1a999a443fbf/>).
- <sup>81</sup> **Mitsugi, H. & Ikram Yaakob, M.S.** 2018. Co-chairs summary report. Paper presented at CPF International Conference *Working across sectors to halt deforestation and increase forest area. From aspiration to action*. 14 March 2018, Rome, Collaborative Partnership on Forests.
- <sup>82</sup> **Garnett, S.T., Burgess, N.D., Fa, J.E., Fernández-Llamazares, Á., Molnár, Z., Robinson, C.J., Watson, J.E.M. et al.** 2018. A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability*, 1(7): pp. 369–374. <https://doi.org/10.1038/s41893-018-0100-6>
- <sup>83</sup> **Levis, C., Costa, F.R.C., Bongers, F., Peña-Claros, M., Clement, C.R., Junqueira, A.B., Neves, E.G. et al.** 2017. Persistent effects of pre-Columbian plant domestication on Amazonian forest composition. *Science*, 355(6328): 925. <https://doi.org/10.1126/science.aal0157>

---

<sup>84</sup> **FAO, UNEP & UNDP.** 2019. *Collective tenure rights: Realizing the potential for REDD+ and sustainable development.* Information brief 12 pp. (also available at <http://www.fao.org/3/CA6013EN/CA6013EN.pdf>).

<sup>85</sup> **FAO.** 2018. *The State of the World's Forests 2018: Forest pathways to sustainable development.* The State of the World's Forests (SOFO) No. 2018. Rome 139 pp. (also available at <http://www.fao.org/documents/card/en/c/19535EN/>).

<sup>86</sup> **FAO.** 2021. *Institutionalisation of forest data: Establishing legal frameworks for sustainable forest monitoring in REDD+ countries.* Rome. 48 pp. <https://doi.org/10.4060/cb3525en>

