



POLICY BRIEF **FOREST AND FOOD SOLUTIONS FOR THE CLIMATE CRISIS**



Task Force 2
CLIMATE CHANGE AND ENVIRONMENT

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موجز السياسة الغابات والغذاء كحلول للأزمة المناخية

فريق العمل الثاني
تغير المناخ والبيئة



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ABSTRACT

Forests hold powerful benefits for humans' physical and mental health. They provide medicines, inhibit the transfer of infectious diseases such as COVID-19 from animal to human habitats; supply clean water, air, and soil; support multiple industries and communities, especially Indigenous peoples; and provide jobs. Forests must be protected against the massive incursion of factory farming and animal agriculture. Cultivating trees and plants is a readily available stimulus to create jobs and ensure a healthy planet in a safe, sustainable, and low-cost way. Group of Twenty summit leaders should thus agree to meet the global goal of planting at least one trillion trees by 2030.

تعزّز الغابات الصحة البدنية والعقلية للإنسان. حيث تقدم الغابات الأدوية وتقلل انتقال الأمراض المعدية مثل كوفيد-19 من الحيوانات إلى مواطني حياة البشر. كما توفر المياه والهواء والتربة النقية، وتدعم مجالات الاستجمام والسياحة ومنتجات الغابات، والمجتمعات الريفية ومجتمعات السكان الأصليين. وتوفر الوظائف، خصوصاً للشباب والفقراء. ويجب التوسع في الغابات وحمايتها ضد التوغل الهائل للزراعة الكثيفة وتربية الحيوانات التي ينتج عن ممارساتها ومنتجاتها المزيد من انبعاثات الكربون والأمراض من خلال مقاومة الميكروبات لأدوية الأمراض المعدية والأمراض غير المعدية، بما في ذلك السمّنة والسكري. وتُعَد زراعة الأشجار والنباتات المحفز الكثر جاهزية لإيجاد وظائف وأشخاص أصحاء وكوكب يتمتع بالصحة بطريقة آمنة ومستدامة وفورية ومثبتة منذ القدم ومنخفضة التكلفة. ومن ثم يجب أن يتفق قادة مؤتمر قمة مجموعة العشرين على أن يؤدي كل منهم دوره بشكلٍ كاملٍ وعادل لتحقيق الهدف العالمي المتمثل في زراعة تريليون شجرة على الأقل بحلول عام ٢٠٣٠، وذلك من خلال تعيين عاملين للقيام بهذا العمل بشكلٍ فوري ومنع إزالة الغابات وفقدان أشجار المنغروف والأراضي الساحلية الرطبة، ومساعدة الآخرين في مثل هذه الجهود، وتعزيز زراعة النباتات المتنوعة، والتعاون في ما يتعلق بمبادرة تريليون شجرة، والتعاون مع الاتحاد الدولي لحفظ الطبيعة، وتحدي بون، ومنظمة الأغذية والزراعة، واتفاقية الأمم المتحدة للتنوع البيولوجي، وبرنامج الأمم المتحدة للبيئة، واتفاقية الأمم المتحدة الإطارية بشأن التغير المناخي تحقيقاً لهذه الأغراض.



CHALLENGE

Rationale

There is a narrow window of opportunity to prevent the global average temperature from rising to two degrees Celsius above pre-industrial levels, with the threshold of 1.5 degrees Celsius likely to be surpassed as business continues as usual. Preventing the worst-case scenario outcome of a 2-degree temperature rise requires a solution that can simultaneously support mitigation and resiliency, and immediate, large-scale implementation of low-cost techniques that have proven their effectiveness for millennia. The solution lies in nature-based solutions (NBS) that reinforce greenhouse gas sinks while reducing the sources of greenhouse gas emissions, and that provide many other ecosystem services and socioeconomic benefits (Albert et al. 2019). The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES 2019) states that “nature-based solutions with safeguards are estimated to provide 37 per cent of climate change mitigation until 2030 needed to meet the goal of keeping climate warming below 2C, with likely co-benefits for biodiversity.”

Two key components of NBSs are to grow and protect trees and plants. In a list of top solutions for the current climate crisis, Project Drawdown (2014) ranked “reduced food waste,” “plant-rich diet,” “tropical forests,” and “silvopasture” in the top ten, and seven other food and forest solutions in the top 20.

These NBSs provide many co-benefits that are urgently required now to counter the converging global crises and include:

COVID-19

Trees can help cure COVID-19 by providing raw ingredients for an effective vaccine. The booster for one potential vaccine depends on the bark of a tree found only in Peru, Bolivia, and Colombia. The implementation of UNDRIP, including respecting Indigenous intellectual property and land rights, is important to this process. More broadly, functioning forests prevent movement between animal and human habitats, and thus, inhibit the transfer of infectious diseases such as COVID-19, Ebola, SARS, and MERS.

Health

Forests provide powerful benefits to humans’ physical, mental, emotional, and spiritual health, as well as medicines that can prevent deaths from other vector-borne diseases, such as malaria.

Ecology

Forests clean the water, air, and soil, and prevent pollution that causes disease and death.

Employment

Forests support recreational, tourist, and forest products industries, as well as rural communities and indigenous peoples. They provide jobs, especially for the young and the poor. Growing trees and plants is the ultimate “shovel” ready stimulus needed now.

Food

Over 25% of the global population, especially the poorest, relies on forests for food, including many fruits and nuts produced by trees. Protecting forests will require addressing the largest contributor to deforestation—the global agriculture business. An often overlooked but critical part of forest protection is the conversion of intensive animal and monocrop agriculture to diversified, organic, plant-based crops, along with efforts to increase demand for such food by raising awareness of its superior health benefits. Agriculture accounts for 24% of global greenhouse gas emissions, with its practices and products causing disease through antimicrobial resistance and non-communicable diseases, such as obesity, diabetes, and cancer (Agrawal 2014). Intensive animal agriculture also generates excessive waste that runs off into oceans and contaminates the water and environment of nearby communities (often marginalized communities of colour) creating an additional public health hazard.

Relevance to Group of Twenty Governance

Growing forests and plants is a core topic to be addressed at the Group of Twenty (G20) summit. G20 summits have long addressed climate change, food, and forests, and have recently included NBSs on the agenda. Summit leaders’ public communiqués have continuously included the topic of climate change and food since the first summit in November 2008, and leaders have made 91 commitments on climate change and 75 on health. Member nations have shown 69% compliance with priority commitments in each category, and 79% compliance with the 123 commitments on food-agriculture. The broader natural environment has 69 commitments, with 60% compliance. Given these statistics, there is significant room for improvement.

The 2019 Osaka G20 Summit committed to “look[ing] into nature based solutions” to climate change. It also recognized the need to respond to animal and plant health for sustainable agriculture and food security. Ten months after the summit, member compliance with their priority commitments on climate change, food, and health averaged 78%, 83%, and 93%, respectively.

CHALLENGE

The 2020 Riyadh Summit plan announced on December 1, 2019, prioritizes the nature-related goals of “safeguarding the planet” and “managing emissions for sustainable development” through the implementation of afforestation, which can be a key NBS if implemented properly and with local societal benefits ensured. The Riyadh Summit priorities of “combating land degradation and habitat loss,” and “promoting food security,” including “dietary changes and sustainable agriculture,” offer highly supportive synergies. Growing forests and plants also promotes the Summit’s priority of advancing global health and well-being.

More recently, G20 governors have shown that forests, food, and their related health benefits remain at the forefront. During the opening remarks of the Think20 conference on June 15, the Saudi co-chair of the G20 Environment Working Group emphasized that one-fifth of the world’s population depends on forests for employment and food, and that trees reduce air pollution from particulates that damage health and increase the vulnerability of COVID-19 patients. In addition, deforestation, overgrazing, and agriculture cause 93% of land degradation, which produces 50% of biodiversity loss and destroys \$6–11 trillion in ecosystem services. This is a huge loss, as ecosystem services are estimated to provide \$125 trillion in annual economic benefits (Seddon et al. 2020).

It is likely that G20 leaders at Riyadh will commit to this proposal and comply with its components, as many leaders have already accepted and initiated progress. The U.S. supports the one-trillion trees initiative, and all other G7 members have pledged to contribute to afforestation, including through the expansion of natural protected areas to meet their UN CBD goals due this year. G7 countries alone contain over 20% of the 0.9 billion hectares available globally for potential tree restoration, led by the U.S. and Canada with a collective 78.4 million hectares. China has long had a major planting program, as have almost all other members of the G20. Together, these countries enable year-round tree planting for rapid scale-up, diversity, and resilience.

Current and projected unemployment rates of G20 member nations suggest that millions of recently unemployed workers (including new graduates and students seeking summer jobs) would be available to accomplish these goals. The cost of their salaries, training, and worksite support could be largely or fully offset by savings from unemployment benefits or welfare. The estimated cost for G7 members is \$0.30 per tree. The G7 share is 20% of the \$300bn total cost for planting one trillion trees, or \$60bn over ten years.



PROPOSAL

G20 summit leaders should agree to do their share to meet the global goal of planting at least one trillion trees by 2030 by immediately hiring workers for implementation, preventing deforestation and loss of mangroves and coastal wetlands, assisting others in such efforts, and promoting diversified, plant-based agriculture. They can achieve these goals by collaborating with the Trillion Tree Initiative, the International Union for the Conservation of Nature (IUCN), the Bonn Challenge, the Food and Agriculture Organization (FAO), the UN Convention on Biodiversity (UNCBD), the UN Environment Programme (UNEP), and the UN Framework Convention on Climate Change (UNFCCC).

To support this goal, G20 leaders should:

Adopt the concept and principles of nature-based solutions, pioneered by the International Union for the Conservation of Nature

The IUCN (2016) defines NBS as “actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively, simultaneously providing human well-being and biodiversity benefits.” The EU (2015) adds to this definition actions that are “inspired by nature,” and strongly emphasizes concepts such as green infrastructure in urban areas. While NBS is a term that encompasses several existing ecosystem-based approaches, not all conservation efforts are considered NBSs. NBSs should provide benefits to society that include but are not limited to conservation goals. This speaks to the comparative advantage of NBSs, including multiple environmental and socio-economic co-benefits, over technical-based solutions that tend to focus on a single technical problem (Nesshöver et al. 2017). The benefits include those captured in the UN 2030 Agenda’s Sustainable Development Goals (SDGs), including climate action (SDG 13), hunger (SDG 2), health and well-being (SDG 3), and life on land, which includes forests (SDG 15). In order to avoid greenwashing of the term, it is important to develop global principles and standards to ensure that trade-offs can be avoided and benefits fairly distributed. The IUCN has begun this process. The G20 should support the IUCN’s efforts by endorsing its eight preliminary principles on NBSs (see Appendix B) and by supporting the IUCN’s efforts to develop these principles into global standards.

Adopt ambitious commitments to stop deforestation and habitat destruction

Current policies of individual countries have the world on track to surpass the climate “tipping point” of 2 degrees Celsius, which climate scientists have predicted will cause unprecedented environmental disasters and irreversible ecological changes (IPCC 2019). Meeting the 1.5C target is unlikely, as the world is already set to reach 1.3C above pre-industrial levels within five years, and climate modelling scenarios often underestimate rather than overestimate their predictions (Reuters 2019).

Moving from incrementalism and making vague commitments, all G20 leaders must strengthen their determination by making more precise, substantive, and evidence-based commitments to forests and nature. This also means faster action and tighter timelines. Preliminary research findings have shown lower compliance with G7 and G20 commitments that have a multiyear timetable (Bracht and Nguyen 2017). Other research has suggested that shorter-term benchmarks are important for improving compliance with global goals (Young 2017). Biodiverse forests have great advantages that can be used to mitigate up to 5.8Gt of CO₂ per year, provide \$125 trillion in ecosystem services, and reduce vulnerability and increase adaptive capacity (Seddon et al. 2019). To promote these advantages, the G20 should create short-term benchmarks to complement the long-term global goals to which they are already committed, and create a permanent self-accountability mechanism, such as regular pre-summit ministerial meetings concerning the environment and climate (see below for evidence on ministerial meetings).

Promote a whole food, plant-based diet

The amount of land required to produce animal-based foods is greater than that required for plant-based foods (Ranganathan et al. 2016). The least land-intensive livestock requires more land than the most land-intensive crop. Globally, animal-based agriculture encompasses over three-quarters of the earth's surface, and as such, causes three-quarters of global deforestation. The G20 Environment Working Group indicates a higher figure, stating that deforestation, overgrazing, and agriculture cause 93% of land degradation, which produces 50% of biodiversity loss, and destroys \$6–\$11 trillion in ecosystem services. Diversified plant-based crops (i.e., not monocrops) require much less land, while diversified organic crops greatly reduce the need for intensive application of chemicals and fertilizers that harm the environment and human health. As the majority of existing monocrops are grown not for human consumption but to feed the billions of animals bred for food, replacing intensive animal agriculture with less intensive plant-based agriculture reduces the demand for land and contributes to food security.

These animal foods contribute only 37% of the total protein consumed globally. Animal protein has negative health consequences and is a primary contributor to the high prevalence of non-communicable diseases worldwide, such as cancer, heart disease, and diabetes (Clark, Hill, and Tilman 2018). The World Health Organization (WHO) and UN Food and Agriculture Organization (FAO) promote the adoption of a predominantly plant-based diet for health and environmental benefits, stating that “the evidence ... on dietary patterns and health suggests a need to focus on plant foods and degree of food processing...,” while recognizing the role of culture in promoting

sustainable and healthy diets (WHO and FAO 2019, 19). The UN's SDG Partnership Platform promotes a predominantly plant-based diet to stop the “rapid deterioration of ecological and human well-being,” based on recommendations from the World Cancer Research Fund, the Oxford European Perspective Investigation into Cancer and Nutrition, and the Harvard School of Public Health (UN 2020).

Endorse the UN Declaration on the Rights of Indigenous People, as they are the critical custodians of the forests

Indigenous peoples are a key global force in forest management. This point is recognized in the third IUCN NBS principle, which states that NBS interventions need to be determined by site-specific, natural, and cultural contexts, including traditional knowledge (see Appendix B). Land managed by indigenous peoples is healthier and enjoys more biodiversity (Schuster 2019). Indigenous peoples bring a holistic worldview to land management (Bull 2010), that may be more suitable to nurturing biodiversity and other socioeconomic outcomes for those communities than the Western hierarchical and linear worldview. Moreover, climate change is a global issue that is felt locally, and requires local knowledge to deal with the challenges. Climate solutions, like forest restoration and preservation, benefit from local knowledge, as a key challenge of such endeavors is ensuring that local species are monitored over time. While local communities are often the best source of this knowledge, a major barrier to these biodiversity and socioeconomic benefits is a lack of implementation of indigenous land rights. The G20 acknowledged indigenous peoples for the first time at its most recent summit in Osaka in 2019 (Kirton and Warren 2020). At Osaka, the G20 linked NBS with indigenous peoples, stating that it would “look into ... nature based solutions and traditional and indigenous knowledge” concerning climate change. The G20 should take the next step and endorse the UNDRIP.

Institutionalize joint meetings of G20 ministers responsible for the environment and agriculture, with the equal involvement of the FAO, the UNCBD, the UNEP, the UNFCCC, and the IUCN

When the G20 holds a same-subject, pre-summit ministerial meeting, its compliance is higher with commitments made on that subject. This result has been shown by the impact of the G20 meetings of finance ministers and central bank governors on G20 climate change compliance (Kirton, Kokotsis, and Hudson 2017). The G20 has never held a ministerial meeting on climate change, but it should be implemented as a regular part of the agenda. Further, it would benefit from holding joint meetings with agriculture ministers and key international organizations to help break down siloed governance and encourage collaboration across sectors. The closest to achieving this goal was an innovative joint energy and environment ministerial meeting

held by Japanese leadership in Osaka in 2019. The ministers jointly agreed to 79 commitments, one of which concerned NBSs. This particular commitment was given priority placement in the communiqué and stated, “We [will] promote solutions, including nature based solutions that have multiple benefits.” It was preceded by the recognition that climate change, biodiversity loss, sustainable production and consumption, and land and water pollution are global challenges, and that nature has “multiple benefits.” The G20 leaders at Osaka subsequently made a commitment to “look into...nature based solutions.” Saudi Arabia has announced that it will keep NBS on the G20 agenda in 2020, but the issue has been diverted by the urgent COVID-19 pandemic. This disease should motivate Riyadh to focus on protecting forests, as all recent infectious diseases, including SARS, MERS, and COVID-19, have been caused by human encroachment on animal habitats. While preventing future pandemics and meeting global climate goals will ultimately require rooting out the systemic problems that encourage poverty and inequality across various indicators, the NBS’ focus on equitable achievement of social goals can support this overarching objective. This will require the G20 to put forth an effort akin to the 2008 global financial crisis response, which involved frequent ministerial meetings along with substantial financial investments throughout the year. The G20 can increase its legitimacy by improving its compliance with the commitments. In particular, this can be accomplished by establishing a permanent ministerial meeting on environment and climate change that meets regularly and collaborates with other sectors, starting with the agriculture sector.

Key Recommendations

To support this goal, G20 leaders should:

1. Adopt the concept and principles of NBSs, pioneered by the International Union for the Conservation of Nature (IUCN).
2. Adopt ambitious commitments to stop deforestation and habitat destruction.
3. Promote a whole food, plant-based diet.
4. Endorse the UN Declaration on the Rights of Indigenous People (UNDRIP), as they are the critical custodians of the forests.
5. Institutionalize joint meetings of G20 ministers responsible for the environment, climate change, and agriculture, with equal involvement of the UN FAO, the UN CBD, the UNEP, the UNFCCC, and the IUCN.

Disclaimer

This policy brief was developed and written by the authors and has undergone a peer review process. The views and opinions expressed in this policy brief are those of the authors and do not necessarily reflect the official policy or position of the authors' organizations or the T20 Secretariat.



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APPENDIX A

Appendix A: G20 Performance on Climate Change

Summit	DPM		DEL		DIR						DEC		DVY		DGG			
	CC#	CC%	Words		FS	GBA	PP	DEM	HR	CMT	Score	% ASSD	COM		In		Out	
			#	%									MIN	OFF	NR	NB		
2008 Washington	0	0%	64	1.7	0	0	0	0	1	0	-	-	0	0	0	0		
2009 London	0	0%	64	1.0	0	0	1	0	0	3	-0.10 (45%)	33% (1)	0	0	1	1		
2009 Pittsburgh	1	5%	911	9.7	0	0	4	0	0	3	+0.86 (93%)	33% (1)	4	0	10	5		
2010 Toronto	1	5%	838	7.4	0	0	0	1	0	3	+0.42 (71%)	100% (3)	0	0	3	3		
2010 Seoul	2	10%	2,018	12.7	0	0	2	1	0	8	+0.05 (53%)	50% (4)	5	3	20	11		
2011 Cannes	2	10%	1167	8.2	0	0	0	1	0	8	+0.38 (69%)	37% (3)	2	0	11	7		
2012 Los Cabos	0	0%	1,160	9.1	0	0	0	1	0	6	+0.59 (80%)	50% (3)	1	5	6	5		
2013 St. Petersburg	1	5%	1,697	5.9	0	0	1	0	0	11	-0.17 (42%)	27% (3)	0	3	10	7		
2014 Brisbane	0	0%	323	3.5	0	0	0	0	0	7	+0.51 (76%)	71% (5)	0	0	4	2		
2015 Antalya	0	0	1,129	8	0	0	0	0	0	3	+0.70 (85%)	85% (1)	1	1	5	3		
2016 Hangzhou	0	0	1,754	11	0	1	0	1	0	2	+0.58 (79%)	100% (2)	1	3	5	4		
2017 Hamburg	0	0	5,255	15	0	0	1	1	1	22	+0.62 (81%)	14% (3)	0	11	26	9		
2018 Buenos Aires	0	0	532	6	0	0	0	0	0	3	+0.57 (79%)	79% (2)	0	0	3	3		
2019 Osaka	0	0	2034	31	1	1	0	0	0	13	NA	NA	1	1	10	9		
Total	7	n/a	18,946	n/a	1	2	9	5	2	92	n/a	31	15	27	114	69		
Average	0.78	4%	1,353	9.3	0.1	0.1	0.88	0.4	0.1	6.6	+0.38	69%	1.1	1.9	8.1	4.9		

Notes:

DPM=Domestic Political Management includes all explicit name references to the full members of the Summit that specifically express the institution's gratitude (within the context of climate change) to that member. The % of members complimented indicates how many of the 20 full members received compliments within the official documents, depending on how many full members attended that year.

DEL=Deliberation to number of times climate change is referenced in the G20 leaders' documents for the year in question. The unit is the paragraph. % refers to the percentage of the overall words related to climate change in each document.

DIR=Direction Setting, as Priority Placement (PP) refers to the number of references to climate change in the chapeau or chair's summary for the year in question. The unit of analysis is the sentence. The number in parentheses refers to environment references.

DEM=Democracy refers to the number of references to democracy in relation to climate change.

HR=Human rights refers to the number of references to human rights in relation to climate change. The unit of analysis is the paragraph.

DEC=Decision-making refers to the number of climate change commitments.

DVY=Delivery refers the overall compliance score for climate change commitments measured for that year.

% ASSD represents percentage of commitments measured. The numbers in parentheses refer to energy commitments.

DGG=Development of Global Governance.

IN refers to the references made to institutions inside the G20 in relation to climate change. MIN refers to ministerial groups. OFF refers to official level groups. OUT refers to the number of external multilateral organizations related to climate change. NR is the number of references. NB is the number of bodies. The unit of analysis is the sentence.

*2016 Hangzhou Communiqué reference to climate change-GGA: "We are determined to foster an innovative, invigorated, interconnected and inclusive world economy to usher in a new era of global growth and sustainable development, taking into account the 2030 Agenda for Sustainable Development, the Addis Ababa Action Agenda and the Paris Agreement."



APPENDIX B

IUCN NBS Principles

1. Embrace nature conservation norms (and principles);
2. Can be implemented alone or integrated with other solutions to societal challenges, including technology and engineering solutions;
3. Are determined by site-specific natural and cultural contexts that include traditional, local, and scientific knowledge;
4. Produce societal benefits in a fair and equitable way that promotes transparency and broad participation;
5. Maintain biological and cultural diversity and the ability of ecosystems to evolve over time;
6. Applied at a landscape scale;
7. Recognize and address the trade-offs between the production of a few immediate economic benefits for development, and future options for the production of the full range of ecosystem services; and
8. That NBSs are an integral part of the overall design of policies, and measures or actions, to address a specific challenge.



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