same way. With the Chinese we're in debate. Are we going to have collective global leadership on this, yes or no? We need to work on that because if we do it together, the impact will be much bigger.

»If this is not a social Green Deal, the Green Deal will not happen.«

But at the end of the day, it is very important that this Parliament takes this into hand, and makes sure that Parliament has a leading role, together with the Commission, to convince our Member States in Council to do the right thing. And if we begin, by enshrining in law, that by 2050 Europe will be climate-neutral, then we can take steps back until today and just chart the map that we need to get there. And then we will discuss the measures we will need to take – whether it's on ETS, whether it's on emissions, whether it's on taxation, whether it's on all sorts of other measures to make our industries circular, to make sure that there are jobs in this new economy.

But finally, I want to add one thing which is very, very important. You know, the biggest risk here I see, is that those who are most vulnerable in climate change, see themselves also as most vulnerable in the answer to climate change, so that they start resisting the Green Deal, because they feel that they are vulnerable. And at the end of the day, if they resist the Green Deal and they stop it, they will be the first victims of the consequences of not doing the right thing.

So that's why – and this is a fundamental point – if this is not a social Green Deal, the Green Deal will not happen. If this is not a Green Deal where the most vulnerable regions in Europe – coal-mining regions and others – do not see solidarity from other parts of Europe, it will not happen. So we need a level of solidarity with vulnerable individuals and vulnerable regions, to make sure the Green Deal can be delivered for all our citizens. And at the end, because "Man on the Moon" was quoted, so I obviously thought of the famous moon speech by John F. Kennedy, and let me just amend it slightly and end with that: "We choose to go for climate neutrality in 2050, and do the other things. Not because they are easy, but because they are hard. Because that goal will serve to organise and measure the best of our energies and skills. Because that challenge is one that we are willing to accept. One we are unwilling to postpone. And one which we intend to win." Thank you.

This text is from Executive Vice-President Timmermans' closing speech delivered at the European Parliament Plenary Session on the European Green Deal, in Brussels on December 11, 2019.

G20 governance of climate change through nature-based solutions

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The G20 Research Group is a global network of scholars, students and professionals in the academic, research, business, non-governmental and other communities who follow the work of the G20 leaders, finance ministers and central bank governors, and other G20 institutions. It is directed from Trinity College and the Munk School of Global Affairs and Public Policy at the University of Toronto.

INTRODUCTION

Nature-based solutions (NBS) is a relatively new concept in global governance. The International Union for the Conservation of Nature (IUCN) (n.d) 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."[1] Much of the work on NBS is on urban environments, as the majority of the global population will be living in cities in the coming decades.[2] There are eight NBS principles, developed by the IUCN. They bring together existing ecological concepts while offering novelty in their focus on integration, on landscape scale and on coordinated actions that address complexity, including interactions between ecological, social, legal, institutional and political systems.[3] NBS is therefore relevant to the UN 2030 Agenda's Sustainable Development Goals (SDGs), with SDG 13 on climate change at the center. NBS is estimated to provide 37% of climate mitigation until 2030.[4] It is also important for adaptation

and resilience, including in regard to food security, public health and biodiversity.

The land use change, agriculture and forestry sector is particularly salient, as it accounts for 24% of global greenhouse gas (GHG) emissions, which rises to 37% if the global food system is included.[5] Moreover, the agriculture sector's use of monocrops has led to the development of technical inputs to replace natural processes, which has led to an overuse of health-harming chemicals and fertilizers.[6] It has also led to the use of assembly line-style factory farming and genetic modification of animals bred for human consumption, with its well-documented ecological, social and animal abuses. This homogenous and technocratic design is a leading cause of biodiversity loss, from soil microorganisms, to plants and trees, to wildlife on land and in the oceans (SDG 14 and 15). Agriculture accounts for three-quarters of global deforestation.[7] Advancing NBS in this sector is therefore critical for planetary health.

THE ARGUMENT

The G20 accounts for 80% of global greenhouse gas (GHG) emissions, 80% of global trade in agricultural goods and 60% of the world's agricultural land.[8] It includes the industrialized and emerging economies with the highest historic and projected emissions contribution – all of which are off track to meet the 1.5° C Paris Agreement target. Through an analysis of six dimensions of performance, developed at the G20 Research Group,[9] this article shows that the G20 has performed minimally on climate change governance through nature-based solutions. This article does not seek to overstate the G20's potential, but shows that there is an emerging trend at the G20 and an opportunity to advance NBS under the 2020 Saudi Arabian Presidency. It argues that it should do so in the context of rising inequality and with the aim of meeting the G20's second foundational mission "to make globalization work for all."

THE G20'S PERFORMANCE
DOMESTIC POLITICAL MANAGEMENT

Civil society involvement

The G20's first official nonstate actor engagement group, Business 20, was created at its 2009 London Summit.[10] Others followed, including Civil 20, Think 20, Youth 20, Labour 20, Women 20, G(irls) 20 and the Urban 20.

Of these, the B20 is the most powerful and influential. The G20 leaders' have chosen to attend the B20's meetings over the other engagement groups.[11] The B20 and the private sector are given significantly more attention in the G20's public communiqués than any other engagement group, receiving 57 mentions between 2008 and 2018. This is compared to 29 for the C20/civil society, 12 for the T20/academia/think tanks, 11 for the L20, six for the Y20 and five for the W20. This suggests that the G20's message of inclusiveness is imbalanced and continues to privilege already powerful actors over others. An example of this was on display at the 2012 Los Cabos Summit, which was noted for its greater inclusion of civil society organizations (CSOs) than previous summits. Yet CSOs were marginalized at the event, including at the media center, and their participation was limited in the summit process compared to groups like the B20, and even the T20, L20, Y20 and G(irls)20.[12] Moreover, despite the growing influence of nonstate actors on the G20's agenda, members from non-economic engagement groups have expressed skepticism over their influence.[13] This supports the observation that the rise of nonstate actors in global governance and their growing influence should not be interpreted to mean that nonstate actors are replacing the state, but rather that there is a "reconfiguration" of authority.[14, 15]

»The G20's message of inclusiveness is imbalanced.«

Indeed, for comparison, the T20, a global network of think tanks, has had some influence but it has been limited. At the 2018 Buenos Aires Summit, the T20 presented 135 recommendations across several subjects to the G20 leaders. An analysis conducted by the G20 Research Group found that 33 of these recommendations were reflected at least partially or completely in the 128 commitments the G20 leaders made at Buenos Aires.[16] Of these T20 recommendations, those reflected in the G20 communiqué were already aligned with the G20's existing agenda and approach to global governance. They were primarily economic, including on macroeconomic growth, global trade, job creation, the digital economy and global food security.

Conversely, none of the T20's recommendations on climate change, sustainable development, migration or governance were reflected in the Buenos Aires leaders' communiqué. Notably, these recommendations went beyond the G20's core framing of key issues, including on the food-climate link. Indeed, on food systems and agricultural production the T20 called for the G20 to coordinate with subnational actors, especially cities, for the promotion of multistakeholder participation and for more research on the promotion of synergies. This included their two NBS-related recommendations to 1. Promote within the Intergovernmental Panel on Climate Change [IPCC] the need to improve guidelines and methods on estimating carbon sequestration by grasslands and other agriculture-related biomes with regionally relevant parameters for those estimations; and 2. Have the UN Food and Agriculture Organization's (UN FAO) Consultative Group for International Agricultural Research serve as a secretariat to coordinate these activities.

Continuing with the subject of agriculture and climate change, although a systematic analysis has not been conducted for the B20, a general observation is that the B20's recommendations to the G20 fall within the existing agricultural model, and are largely reflected in their public communiqués and commitments. This includes an emphasis on using technologies, such as biotechnology and digital technologies to increase yields while "maximiz[ing] resource efficiency [and] minimiz[ing] environmental impact."[17] It also includes developing public-private partnerships, investing in infrastructure and educating consumers to build responsible consumption habits. The former two offer benefits to private actors, while the latter puts the

onus on individual behavioral change rather than systemic change.

Thus, while the G20 can be characterized as an innovative state-led informal summit club of world leaders with its network of nonstate actors, there is evidence that these powerful leaders are reinforcing oligarchic tendencies by entrenching the status quo, including in the agricultural and global food system.[18] Given the proven climate, ecological, social and even economic harms (i.e. food price volatility, insecure land tenure of smallholders), the global food system is causing, the upholding of the status quo by the world's rich and famous is likely undermining progress on the SDGs and the Paris Agreement. For the wealthy G20 elite to maintain legitimacy in the face of rising inequality and growing social unrest due to climate inaction, including their continued support for the industries polluting the planet, it should promote a greater level of engagement with nonstate actors beyond the private sector.

Media attention to climate change

Many studies have been done on climate change communication in the media. According to one study, in four major emitting G20 countries, representing developed and emerging economies, the most frequent framing of climate change included responsibility, economic consequences, conflict and national positions. The least used was the human interest frame.[19] In the United States, major newspapers used anti-climate change regulations, scientific uncertainty and benefits from climate change to promote climate denialism. Climate "believers" used framings such as scientific certainty and human development.

Similar patterns are observed on social media. There are different framings of climate change according to geography among G20 member states, with the largest references of climate change as a "hoax" in the US. This is consistent with the US withdrawal from the Paris Agreement.[20, 21] Much of the language of incivility and attacks on Twitter are used by climate change deniers.[22] This misinformation is a source of public confusion. However, young people and Indigenous Peoples are also using social media to counter this narrative and to launch worldwide social movements in support of the scientific consensus on climate change.

Overall, there is uneven and fragmented coverage of climate change events and science globally.[23] This includes inconsistent reporting of extreme weather events[24] and a high degree of conflictual storytelling.[25]

Public opinion polls

This is consistent with public opinion polls, which show that Americans viewed climate change as less of a threat than other G20 countries in 2019, with 59% of the population viewing climate change as a major threat.[26] Tied with the US was South Africa. This was followed by Indonesia at 56% and Russia last at 43%. At the top were South Korea, with 86%, France with 83%, Mexico with 80%, Japan with 75%, Argentina with 73%, Brazil with 72%, Germany and Italy with 71%, Canada and the UK with 66%, and Australia with 60%.

DELIBERATION

In its public communiqués, between 2008 and 2019 the G20 dedicated 225 paragraphs to climate change and 66 to energy (including renewable energy, non-renewable energy and fossil fuel subsidies). On the environment, the G20 has dedicated 35 paragraphs to oceans and eight paragraphs to biodiversity. Also relevant is agriculture, with 155 paragraphs, and economic inequality with 111 paragraphs. To put this in perspective, all of these combined – 592 paragraphs – is much lower than the number of paragraphs dedicated to macroeconomic policy alone at 894 paragraphs.

Within the G20's climate change deliberations, there is one reference to nature-based solutions to climate change, as well as one reference to ecosystem and community-based approaches, and to traditional and Indigenous knowledge (which are elements of the eight NBS principles). Each of these was made at the G20's 2019 Osaka Summit. At Osaka, also relevant to NBS were increased references to climate adaptation, including disaster risk reduction for vulnerable communities and resilient infrastructure.

However, the first time the G20 referenced biodiversity and ecosystems was two years prior at its 2017 Hamburg Summit. There were five paragraphs on biodiversity on three subjects: the illegal trade in wildlife, sustainable agricultural production and food systems, and oceans.

Other NBS-related references included addressing forests in global climate negotiations (2010 Seoul Summit); agroforestry, a farming practice that combines forests with pastureland (2012 Los Cabos Summit); wastewater management for healthy oceans (2017 Hamburg Summit); and four references to the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (starting at the 2012 Los Cabos Summit).

»There is evidence that powerful leaders are reinforcing oligarchic tendencies by entrenching the status quo.«

The current G20 host, Saudi Arabia, has laid out nine ecological priorities for its 2020 presidency.[27, 28] These are: 1. Managing emissions for sustainable development; 2. Combatting land degradation and habitat loss; 3. Preserving the oceans; 4. Fostering sustainable and resilient water systems globally; 5. Promoting food security; 6. Cleaner energy systems for a new era; 7. Scaling up efforts for sustainable development; 8. Tourism as a force for human-centred economic growth (includes eco-tourism); 9. Promoting space cooperation (includes climate and ocean observation). Under the first priority, there is an explicit reference to "nature-based solutions such as reforestation and protecting

and restoring marine resources."[29] It is not clear, however, how they define or understand "nature-based solutions." This matters, as NBS goes beyond simply planting or preserving trees. It also requires a high degree of transparency and participation, including around who owns and controls the design and implementation of NBS, while also ensuring implementation is equitable and includes local, traditional and Indigenous knowledge.

Additionally, under priority two, the Saudi hosts acknowledged the GHG contribution of the land use and land use change sector of 24% (excluding pre- and post-food production systems, which raises the contribution to up to 37%).[30] This is a positive recognition with implications for the other priorities on oceans, and the water-food-energy (WEF) nexus. However, it only states that the G20 will promote "responsible agricultural investments," with no explanation of what this means or how such investments will contribute to mitigating emissions, building resilience or avoiding entrenching inequality.

DIRECTION-SETTING

Preambular priority placement

Over the 14 G20 summits, just four showed priority placement of climate change or the environment in its communiqués' preambles. There were five summits that gave priority placement to economic inequality, or the G20's second foundational mission to ensure globalization works for all. Yet no link was made between them.

On climate change, the first reference was at the 2009 Pittsburgh Summit. However, it did not appear until the 21st paragraph in a 31-paragraph preamble. Moreover, it called on the World Bank to take a leading role in responding to climate change, thus deferring to an international development institution beyond the G20 to take climate action. Three other references to climate change came at Pittsburgh, at the end of the long preamble. One was in relation to phasing out "inefficient" fossil fuel subsidies, one was on green growth, and one was a second deferral (or, conversely, support for) the UN Framework Convention on Climate Change (UNFCCC) negotiations and the then upcoming Copenhagen Summit.

»There has been no priority placement for nature.«

The second was at the 2010 Seoul Summit, in paragraph three, with recognition that a vulnerable global economy has a negative impact on people and the environment. This was the first reference to economic inequality in relation to environmental goals.

The third was at the 2013 St. Petersburg Summit, in paragraph six, with a commitment to work together to address climate change and protect the environment. The second reference to inequality appeared here.

The fourth and final was at the 2017 Hamburg Summit, with a resolve, expressed in the first paragraph of the communiqué, to "tackle" climate change, along with a reference to raise global living standards.

The remaining two references to inequality came at the 2014 Brisbane Summit, "to deliver better living standards" and at the 2016 Hangzhou Summit, "to contribut[e] to shared prosperity."

There has therefore been no link between climate change and wealth inequality, as measured by preambular priority placement. There has also been no priority placement for nature. This, combined with the minimal priority placement of climate change alone and the G20's deferral of responsibility for climate change action to a multilateral development bank indicates weak performance on climate change.

Separate statement

On climate change, energy, the environment and sustainability, the following separate statements have been released since the G20's start: the 2014 Brisbane Energy Efficiency Action Plan; the 2015 Antalya Action Plan on Food Security and Sustainable Food Systems; the 2017 Hamburg Update on Taking Forward the G20 Action Plan on the 2030 Agenda, the 2017 Hamburg Climate and Energy Action Plan for Growth, and the 2017 Hamburg Marine Litter Action Plan; and the 2018 Buenos Aires Update on Moving Forward the G20 Action Plan on the 2030 Agenda for Sustainable Development. Thus the first stand-alone statement related to climate change did not come until several years after the G20 leaders began meeting. Since then, apart from two summits, there has been a stand-alone document related either to sustainability, the energy transition and climate change, or the environment, but none yet on nature.

Issue linkages and causation

On nature, the G20 has made a link and causal connection between wildlife trafficking and marine litter to biodiversity loss. It also acknowledged the importance of risk management in the agriculture sector to protect biodiversity, but this link was not as strong as the recognition of the impact of wildlife trafficking and marine litter on biodiversity loss.

Facts affirmed

On climate change and nature, the G20 recognized the science of the IPCC and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) at the 2019 Osaka Summit. This matters, as the first key message of the 2019 IPBES report 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 2°C, with likely co-benefits for biodiversity."[31] It further states that NBS can be a cost-effective way to meet the SDGs.

Distinctive mission affirmed

The G20 did not make any link to biodiversity or nature with its first distinctive mission, to ensure global financial stability, or to its second mission, to ensure globalization works for all.

The closest connection the G20 has made regarding inequality and climate change is its commitments on climate financing and phasing out inefficient fossil fuel subsidies "while providing targeted support to the poorest."

References in the communiqué at the 2019 Osaka Summit to "look into" nature-

based solutions, community-based approaches and traditional and Indigenous knowledge as alternative approaches to respond to the climate crisis holds some promise for a more multilevel approach to climate change governance. However, without stronger language and more specific and ambitious commitments caution is needed.

»A potential trend within the G20 reflects the broader global rise in attention to nature's role in the climate crisis.«

DECISION-MAKING

On nature and biodiversity, the G20 has made only five collective, future-oriented, politically binding commitments. On climate change it has made 90 commitments. This is followed by 82 on clean/renewable energy (including phasing out fossil fuel subsidies), 70 on other energy commitments (i.e. fossil fuels), and 69 on the environment (most on the marine environment). Another 25 commitments, categorized under other core subjects, such as development, macroeconomic policy, health and trade, among others, referenced some aspect of environmental sustainability. Combined, the G20 has made 347 commitments on climate change, energy and the environment.

Just one of these commitments references "nature-based solutions." It was made at the 2019 Osaka Summit. The language of the commitment is weak, stating that the G20 "will look into…nature-based solutions" rather than committing to implement NBS. Similarly, it made one commitment to "look into…ecosystem and community based approaches," which fall under the NBS umbrella. Although this language is weak, combined with the Saudi priority on forests as a nature-based solution, this shows a potential emerging trend within the G20 club reflecting the broader global rise in attention to nature's role in the climate crisis.

DELIVERY

The G20 leaders' compliance with commitments from the 2019 Osaka Summit have not yet been assessed by the G20 Research Group. On the 2017 commitment that referenced marine biodiversity and ecosystems, the G20 scored -0.20 or just 40% compliance. On the one that referenced agroforestry, compliance was 68%. On the one that referenced forests, compliance was 65%. The average of these three nature-related commitments was 58%. This is lower than the G20's average compliance with the 31 climate change commitments assessed for compliance, at 69%; the nine food and agriculture commitments assessed, at 73%; and the 21 energy commitments (both renewable and non-renewable), also at 73%. It is lower than the G20's overall compliance average across all issues of 71%.

DEVELOPMENT OF GLOBAL GOVERNANCE

In the G20's commitments on climate change the G20 mostly refers to the UNFCCC. In its clean/renewable energy commitments no international institution was referenced. In its non-renewable energy commitments it has referred to the Organization for Petroleum Exporting Countries, the International Organization of Securities Commissions, the International Energy Agency, the Organisation for Economic Co-operation and Development, the World Bank and the International Economic Forum. The B20 was also referenced here. On oceans, the regional institutions of the Asia-Pacific Economic Forum and the Association of Southeast Asian Nations were each referenced once, as forums for information sharing. There was one reference to the World Trade Organization, on trade of environmental goods. And there was one reference to the International Labour Organization, in the context of the environment and global supply chains.

PROPOSALS

Based on this analysis of the G20's performance on climate change and nature, the 2020 Saudi Arabia Summit should:

- Endorse the IUCN's eight NBS principles;
- Improve its transparency and involvement with the non-economic G20 engagement groups, including the T20 and the U20;
- Directly challenge and commit to dismantle climate misinformation campaigns;
- Increase its deliberations and decisions on NBS. This should include increasing specificity and ambition, making strong issue linkages, recognizing co-benefits for SDG implementation, and centering inequality
- Evoke surrounding summit support from international institutions;
- Strengthen internal support by establishing and institutionalizing a G20 climate change ministers' meeting;[32, 33]
- Acknowledge new models of hybrid governance, including multilevel/polycentric governance approaches that can better account for the complexity of the interactions between human and climate systems.[34, 35]

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