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TASK FORCE 2: CLIMATE CHANGE AND ENVIRONMENT

TOWARD A COMPREHENSIVE APPROACH TO YOUTH EMPOWERMENT FOR CLIMATE ACTION

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Abstract

This brief focuses on empowering the youth to act on climate change and environmental protection by strengthening formal and informal environmental and sustainability education. Environmental education is the foundation for problem recognition and solving. The G20 is in a powerful position to exercise environmental and climate leadership by mandating sustainability and environmental education domestically, regularly tracking environmental and climate literacy internationally, investing in infrastructure and educator training for environmental education, promoting games drawing on real-world problems, developing partnerships for environmental education in local communities, and organizing an annual Youth Summit for Climate, Environment, and Sustainable Development Solutions.

Challenge

This policy brief addresses the challenge of assuring quality education to empower today's youth to address problems associated with climate change and ecological degradation. Although environmental education, from pre-school to tertiary educational institutions, is critical to securing a more sustainable future, it has not been able to achieve sustained and transformative impacts thus far (Jickling and Sterling 2017). Few countries treat climate and environmental education as mandatory subjects, and many teachers themselves are poorly informed on the causes and consequences of environmental degradation. The costs of such neglect are high. The dramatic economic and human consequences of the COVID-19 pandemic underscore that steps must be taken immediately to strengthen social resilience. Education is fundamental to this process.

Students acquire most of their information on the environment at school, but only a few students globally learn about environmental issues in standalone environmental science classes (OECD 2012). Environmental education has often been administered through other channels (e.g., extra-curricular activities and awareness/outreach programs) that can help reduce the gaps in environmental education, but cannot replace it altogether. There are substantial differences between OECD and non-OECD countries in terms of student awareness and levels of understanding of environmental issues. Even in the best performing countries, there are major gaps in knowledge and access to information among students.

There are many barriers that restrict the youth from access to educational resources required for them to take empowering action regarding climate and environmental issues. There is unequal access to quality content, educational resources, technology (computers and lab equipment), and the Internet (UNESCO 2016). This problem is amplified by the fact that much of the material available is geared toward English speakers and privileged groups. Globally, over half a billion children and youth have not achieved minimum proficiency levels in reading and mathematics (UNESCO Institute for Statistics 2017a). There are scattered statistics indicating that many have not achieved a minimum proficiency level in environmental literacy. However, the OECD (2012) has suggested that the problem is especially significant in many developing countries.

The lack of awareness about the causes and consequences of pollution in many parts of the world contributes to wasteful and environmentally damaging behaviors, aggravates human health problems, and reduces the quality of life. The failure to invest in environmental and climate education in schools has far-reaching development, economic, and social consequences (UNESCO 2016).

The voices of vulnerable populations and local communities must be considered. Those who are at the highest risk often have the best ideas for adaptation. A structure that enables the systematic inclusion and education of vulnerable stakeholders is necessary. Too often, local and regional voices go unheard or unaddressed although they are most impacted and are the first responders to environmental disasters. Collaborative and inclusive approaches to decision making and implementation related to climatic and environmental risks can serve as opportunities for economic growth and can trigger innovations for sustainability (Renn 2014; Hill et al. 2019).

Proposal

Since the 1980s, there have been calls to incorporate environmental education as an essential part of learning in schools. The Brundtland Commission's report, *Our Common Future*, emphasized that "Environmental education should be included in and should run throughout the other disciplines of the formal education curriculum at all levels—to foster a sense of responsibility for the state of the environment and to teach students how to monitor, protect, and improve it" (World Commission on Environment and Development 1987: Article 68 p. 81). Agenda 21 urged nations to coordinate and integrate sustainable development education in both formal and non-formal sectors, and to integrate environmental education in the curriculum of

primary and secondary schools. Article 6 of the UNFCCC and Article 12 of the Paris Agreement ask countries to make education (formal, informal, and non-formal), public awareness and participation, and capacity building a priority, in order to enable long-term and sustainable change. Education is recognized as a key factor in reducing poverty, improving health, establishing sustainable agriculture, achieving gender equality, and transforming our cities. Education has been integrated into strategies developed to achieve each of the 17 Sustainable Development Goals (UNESCO 2016). With the start of the UNESCO Education for Sustainable Development: Towards Achieving the SDGs (ESD for 2030), as a ten-year follow up to the Global Action Program on Education for Sustainable Development (2015–2019), the demands for the national implementation of sustainability education and calls for standardized indices have intensified (UNESCO Institute for Statistics 2017b). Here, we propose several actions that the G20 can undertake while recognizing that each proposal would need to be tailored to national needs and regulatory circumstances.

Proposal I

Mandate sustainability and environmental education domestically and regularly track environmental and climate literacy internationally

Although the Paris Agreement in 2015 urges signatory countries to implement climate education, it was only after the COP25 that movements began to make climate education mandatory. Italy has pledged to center the environment in its education model (Mezzefiore 2019; UN 2019). It is now compulsory in Italy for all public schools from grade one to high school to teach topics such as climate change and renewable resources for at least one hour every week. Mexico has also mandated environmental education (UN 2019). New Zealand has launched a program to provide every school with materials on the climate crisis, produced by the country's leading science agencies, along with tools for students to take action themselves (McLay 2020). In the US, more than 20 states have adopted the Next Generation Science Standards, which have global climate change as the core topic for middle and high schools (Earth Day 2013). Detailed curricula for middle and high schools in the San Francisco Bay Area were developed by Stanford University. Their curriculum "integrates concepts from the earth, life, and physical sciences as well as the most current data on climate systems to help students understand the phenomena of climate change, the justification for these phenomena, and why these phenomena are both scientifically and socially important" (Stanford Earth n.d.).

Following these examples, the G20 should promote education as a tool to combat climate change and raise awareness on environmental problems. One of the main difficulties encountered in providing high-quality environmental education in schools in the long run is the lack of political support from the government (Kodama 2017). Encouraging, and wherever possible, legislating, that climate change and environmental sustainability should be incorporated into school curricula at all levels is necessary so that the current and future generations have the tools they need to understand and address climate change and other pressing environmental problems and to build resilience (Kerret, Orkibi, and Ronen 2014).

Change is also needed in higher educational institutions. New topics such as environmental engineering, natural resource management, and environmental

governance, are now entering higher education curricula, and campus sustainability networks are being established; however, the pace of change is still too slow (Rootability n.d.). Significantly, many changes that have been made are in response to the demands and initiatives of students as well as those of businesses, as they have begun to recognize the positive impacts of sustainability education in institutions of higher learning on development (Findler et al. 2019).

For countries that have poor quality education, the UNESCO recommends reaching all youth, rich, and poor, through integrated action involving additional programs at the behest of the government, NGOs, and the private sector, rather than teaching only in classrooms (UNESCO 2016).

Tracking the progress of implementation and achievement is equally important. Across educational levels and disciplines, international assessments of environmental literacy are necessary (Paden 2012). While environmental literacy has been integrated into the Programme for International Student Assessment (PISA) and other forms of testing to some extent, broader international comparisons of sustainability and climate education remain limited and gaps in data are large (Marcinkowski et al. 2013; Kaya and Elster 2019). The development of indicators and other methodological techniques to track progress can be initiated by research institutes within G20.

Proposal II

Invest in environmental educational infrastructure and educator training

To create a more sustainable future, it is important to focus on issues such as sustainable agriculture and transport, green urbanization, circular economies, green consumerism, and low carbon energy structures. This will require the G20 to prioritize environmental and climate educational capacity building, teacher training and mentoring, and the development of effective leadership. Investments in environmental and climate educational infrastructure, as well as research and development, must be increased to levels that are commensurate with the scale of the problems that the planet is facing. In some parts of the world, reliable Internet access and electricity supply are still lacking, which makes training extremely difficult (UNESCO 2016). In regions without Internet access, innovative solar technologies, which are a source of green power, can be introduced to help children with learning. If the youth are trained in digital technologies, artificial intelligence, and sustainability issues, they will develop new applications and technologies themselves to contribute toward environmental problem solving. As the UNESCO (2016: p. 33) noted, "Formal education has a particularly strong role in mitigating climate change and responding to its impact. In fact, education expansion is more effective in combating climate change than conventional investment in infrastructure such as sea walls and irrigation systems."

Another critical component of elevating sustainability education is empowering educators (ALLEA 2020). Many educators know very little about climate change and related sustainability problems. One of the most effective ways of making a difference in the education of young people is to train educators and provide them with new skills, tools, and insights. The UN Climate Change Learning Partnership (UN CC: Learn) is an excellent initiative that supports the integration of climate

change in education by providing teaching material for primary and secondary school educators. G20 states and industries should expand financial support for sustainability education and teacher training and make it a national and international priority. As the International Commission on Financing Global Education Opportunity (2016: 36) stated: “The right education fosters increased tolerance and resistance; more environmentally sustainable choices in planning, production and consumption; improved hygiene and health; and greater civic participation.”

Proposal III

Promote games drawing on real-world problems and develop partnerships for environmental education in local communities

Forging partnerships with local communities and businesses can accelerate the adoption of environmental education as a bottom-up initiative that enables speed and scale in the transition of knowledge systems, especially in disadvantaged societies with less access to public knowledge and environmental awareness raising initiatives. The development of content for environmental education must be contextualized to suit the needs of the local community while also raising public awareness of the global climate emergency.

A good example is “The Green School” project, an initiative supported by Tata Steel, which uses informal education modes like green curricula, distinct pedagogy, teacher training, and information education and communication resources to create awareness and enhance the understanding of environmental issues related to climate change in select school campuses (Jharkhand and Odisha, India). Since its inception in 2017, students have been empowered with knowledge that has enhanced their skills, attitudes, and values toward developing an environmentally conscious society.

The Chinese Government created Gunter’s Fables, in which sustainability and climate change are central themes, and made it available to 35,000 teachers, who shared the fables with 300,000 students (Pauli 2017). The Government of India initiated SWAYAM, a program designed to achieve the three cardinal principles of education policy, namely access, equity, and quality, by distributing the best teaching and learning resources to all students, including the most disadvantaged among them, from Class 9 through post-graduation. SWAYAM aims to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.¹

Beyond formal schooling, other avenues such as online resources, certificate courses, adult-to-youth mentorships, and theme-based summer camps can be promoted to help train the youth to become agents of change. Platforms for mutual learning between established and novel climate action movements are necessary (C20 Japan 2019). Making board and digital environmental and climate games available to children can stimulate their curiosity. For example, the Green Schools Project² helps children find economic and environmental co-benefits in a fun and competitive

¹ <https://swayam.gov.in>

² <https://www.teriin.org/project/green-school-tata-steel-teri-initiative>

atmosphere. The Lost City of Mer³ is a game that uses virtual reality to engage people's imaginations, to build empathy with mythical game creatures that are affected by human action, and to provide additional motivation to change real-world behaviors through a linked rewards app. This game can be used to improve climate change education and motivation for mitigation and adaptation.

The work done by the Arab Youth Climate Movement⁴ in local communities and the "Measuring Household Carbon Footprint" in Qatar, implemented through Youth Engagement by the Arab Youth Climate Movement-Qatar and the UNESCO Office for the Gulf States and Yemen⁵ are also examples of best practices. The initiative is in line with the principles of Education for Sustainable Development (ESD) and Climate Change Education. The aim is to educate young people in the households about their consumption patterns so that they become more aware of the impact of their lifestyles on global warming by calculating greenhouse gas emissions. While measuring their carbon footprint, students can learn, analyze, and explore more sustainable options for consumption (including energy, transportation, food, waste) and can learn about ways to protect the environment and sustainably utilize natural resources.

ESD can be used to address issues pertaining to the environment and sustainable development and to create educated leaders for a vibrant tomorrow through various non-formal modes of intervention in schools and communities. Parent education programs can serve as a useful means to ensure consistency in implementation both within and outside of schools. The G20 is in a powerful position to encourage and invest in such innovative models of environmental education.

Proposal IV

Organize an annual Youth Summit for Climate, Environment, and Sustainable Development Solutions

The youth are critical, motivated, and involved stakeholders who should be heard in international negotiations and meetings. According to the UN Climate Change Executive Secretary Patricia Espinosa, "The role of the youth constituency is growing, and this is good for the international negotiating process and for the planet (UN Climate Change News, 2018)."

An annual Youth Summit for Climate, Environment, and Sustainable Development Solutions supported by and hosted during the G20 would give young people the opportunity to meet, engage in focused discussions on key environmental and climate/energy topics, and develop solutions to address these serious problems. Young people are highly creative, eager to cooperate, impatient for change, and often technologically sophisticated. Drawing on and simultaneously going beyond the model of the UN Youth Climate Summit, the goal of the G20 summit should be to encourage the development of cooperative solutions to sustainability problems. In the months leading up to the G20 meetings, the youth selected at the national level can be given three critical environmental problems to work on together. At the

³ <https://www.lostcityofmer.org>

⁴ <https://www.aycm.org>

⁵ <https://www.aycmqatar.org>

G20 meeting, these youth can be given a larger stage to present and highlight their achievements and findings.

The youth may jointly develop educational videos or apps to measure and share data on pollution, create information platforms for efficient environmental and climate ideas, or draw up major proposals for how companies can reduce waste in product development. The summit will be a learning opportunity for young people and will create potentially long-lasting networks among next-generation leaders. It can lead to the development of innovative environmental and climate solutions that speak to the minds of young people. A platform highlighting their ideas can be established to share their innovations and creativity more widely.

Key Recommendations

- G20 governments should mandate sustainability and environmental education domestically and regularly track environmental and climate literacy internationally.
- They should invest in environmental educational infrastructure and educator training.
- G20 governments should promote games drawing on real world problems and develop partnerships for environmental education in local communities.
- G20 governments should organize a G20 annual Youth Summit for Climate, Environment, and Sustainable Development Solutions.

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Disclaimer

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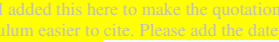
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