September 2020

POSITION STATEMENT FROM THE GLOBAL YOUNG ACADEMY 2020 VIRTUAL INTERNATIONAL CONFERENCE OF YOUNG SCIENTISTS

Heal the Earth: Sustainable Development Goals in a Changing World

PREAMBLE

Just as the Decade of Action to achieve the United Nations Sustainable Development Goals (SDGs) begins, COVID-19 has disrupted the world. Climate change, biodiversity loss, fragile health systems, poverty, and social disintegration could be exacerbated or mitigated by the response to the pandemic. In line with the 2019 UN Global Sustainable Development Report (GSDR)[1], the GYA calls upon academics, businesses, foundations, governments, multilateral agencies, non-governmental organizations, and other stakeholders to take meaningful and transformative steps to meet the SDGs. Young scientists and researchers are equipped and committed to contribute to solutions within their countries and regions, and at an international level.

The GYA's 2020 virtual International Conference of Young Scientists, on the theme "Heal the Earth: Sustainable Development Goals in a Changing World" addressed cross-cutting topics like the COVID-19 pandemic, diminishing natural resources, science engagement, and higher education in times of crisis, by bringing together people across countries, disciplines and sectors. Like the UN SDGs, these themes are often interconnected, and the challenges they pose require cross-disciplinary and cross-sector solutions. This statement reflects the interdisciplinary, transdisciplinary and global perspectives of early to mid-career researchers, focusing on actions which can be taken by researchers, science organizations, higher education institutions and policymakers, to address key challenges.

[1] https://sustainabledevelopment.un.org/globalsdreport/2019

Summary

The GYA 2020 International Conference was a platform to discuss the interlinkages between various disciplines of science and explore how these connections can be harnessed to work towards the UN SDGs.

The role and potential fields of action for early-career researchers was a central part of discussions. The importance of sharing resources – through open science, science diplomacy and global cooperation – was seen as crucial to all topics discussed. Establishing trust in science through quality science communication, science journalism and improved public science literacy was also viewed as key to harnessing public interest and engagement in global crises such as the COVID-19 pandemic and in the face of diminishing natural resources. Finally, investment in research (applied, fundamental, inter- and transdisciplinary, across disciplines) as well as openness to technologies and innovation were understood to be essential for building and maintaining preventative systems and sustainable societies.

With the detailed recommendations provided in this conference statement, the GYA reconfirms its commitment to excellent and innovative science and research, and to collaborative efforts to help solve challenges of present and future generations worldwide.

Detailed Recommendations

COVID-19 and other Global Health Challenges
Invest in research and open science
- *Foster global scientific collaboration at many levels: research partnerships, agreements for training, consultancy, infrastructure, and grant calls.* - *Reward interdisciplinary, transdisciplinary, and fundamental research, including with funding.* - *Build proactive, rather than reactive, research systems to be in place to handle (health) crises.* - *To share knowledge across borders and sectors, support open science systems with mechanisms in place to ensure high standards of quality of research.* - *Ensure that open science implementation truly follows open science principles, such that researchers can publish and access research without high fees.*
Strengthen global health diplomacy
- *Establish means of collaboration across borders on health issues, even between countries or regions with existing political tensions.* - *Build and strengthen global partnerships to benefit collective public health.* - *Facilitate efficient and reliable information flow, including risk assessments; communication between science-rich nations and other nations; exchange of best practices in national public health strategies to ensure a high level of preparedness and response.* - *Facilitate global and regional cooperation on development and distribution of therapeutics and vaccines.* - *Address data protection and good governance issues with relation to public health.*

Engage with the public on health topics
- *Disseminate quality information through science communication to reduce the negative impact of rumours and disinformation, and to build public trust in science and researchers. Communicate not only results, but also the scientific process: convey comfort with ambiguity and uncertainty.* - *Organise outreach events, e.g. webinars to educate journalists about science.* - *Engage public through open discussion forums and encourage citizen science initiatives in service of public health.* - *Strengthen efforts towards science literacy education of younger generations.*
Establish preventative public health systems
- *Treat public health as a cross-cutting issue; foster interdisciplinary approaches.* - *Human health is connected to planetary health. Increase efforts to re-establish ecosystems' balance and maintain biodiversity.* - *Build and maintain structures of science advice to have in place at different levels (local, regional, national), not only during global health crises.* - *Address mental health issues, which are often overlooked and affect even more of the population in times of crisis. For instance, raise awareness for mental health in parallel with health hygiene campaigns during COVID-19 response.*
Diminishing Natural Resources and Environmental Sustainability
Invest in basic research and sustainable technologies
- *Through education and policy advice, promote sustainable development policy.* - *Promote inter- and transdisciplinary efforts in sustainability research.* - *Invest in new, innovative and cost-effective green technologies and in the smart use of technology to achieve sustainable intensive agriculture, aquaculture, energy production, and sustainable urban life.*
Collaborate and engage to have an impact
- *Continue to inform the public and policymakers with evidence, and motivate policy action.* - *Encourage researchers to familiarize themselves and interact with their local science-policy interface. Collaborate with organizations like the International Science Council (ISC)[2], United Nations Major Groups, e.g. Children and Youth (UNMGCY), Scientific and Technological Community (STC MG) and* Women (WMG)*[3], to be involved in UN High-level Political Forum on Sustainable Development.* - *Continue to act in accordance with existing international agreements and engage with global scientific assessments which provide an evidence base for joint and coordinated action: e.g. the UN Global Sustainable Development Report[4], reports by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services[5] and the UN Intergovernmental Panel on Climate Change[6].*

[2] https://council.science/

[3] https://sustainabledevelopment.un.org/majorgroups/about

[4] https://sustainabledevelopment.un.org/globalsdreport/2019

[5] https://ipbes.net/

[6] https://www.ipcc.ch/

Nurture sustainable human-environment relationships

- *Foster a paradigm of co-viability between humans, the environment and economic development.*
- *Strengthen and enforce environmental regulations and develop sustainable, evidence-based policies for the protection and use of natural resources and biodiversity.*
- *Implement the WHO "One Health" [7] approach at local, national, regional and global levels.*
- *Address abundant inefficiency and waste in resource use at all levels.*
- *Recognise traditional practices and experience with resource use from rural communities in biodiversity-rich regions (primarily in the Global South).*
- *Abandon environmentally harmful subsidies.*

Communicate and educate on biodiversity loss and sustainability issues

- *Raise awareness of the WHO multi-sectoral approach of "One Health".*
- *Support informal science education (museums, art installations) on diminishing resources.*
- *Communicate science in local languages to raise awareness and engagement on environmental protection, e.g. waste management.*
- *Increase national awareness of global impact of individual countries' actions.*

Science Communication and Engagement with the Public

Use science communication to engage and inspire

- *Aim to realize and communicate that uncertainty, limitations and learning from failure are part of the scientific process.*
- *Consider whether a research project could be conducted as a citizen science initiative.*
- *Communicate science in local and culturally acceptable language.*
- *Science can be presented in inspiring, innovative, and unforgettable ways. Tell a story about your research that engages emotion as well as reason.*
- *Be able to communicate your research briefly and clearly to anyone. Every researcher help to inform decisions by communicating about their research.*
- *Establish communication with decision-makers, the public and peers alike.*
- *Develop a communication and outreach strategy in your networks and institutions to increase the availability of research findings for policymakers or for the public.*
- *Consider working with communications experts.*

Support public science education as a long-term solution

- *Increase public science literacy. Invest in the training of science journalists and create work opportunities for science journalists; They can help communicate science and keep scientists accountable.*

[7] https://www.who.int/westernpacific/news/q-a-detail/one-health

Higher Education Institutions in Times of Crisis
Use the COVID-19 pandemic as an opportunity for innovation and inclusion
- *Continue to be open to re-learn how to convey knowledge engagingly with virtual means.* - *Diversify learning tools.* - *Human connections, and face-to-face learning, can be crucial to educational and personal growth at university. Learn from new, improved, online connection possibilities, but also recognize what is valuable about in-person connections to ensure that these are not lost in post-COVID higher education.* - *Offer support mechanisms for research staff whose careers have been interrupted by the pandemic (e.g. by laboratory closures, school closures, etc).* - *Consider redirecting funds saved through staff and students staying at home to new virtual learning tools, staff training and infrastructure.* - *Promote collaborations between businesses, industry, society, and higher education institutions to explore financial and technical support, and address skills shortages.*
Foster equitable and open access to learning
- *Strengthen and expand online platforms with educational material and trustworthy information.* - *Continue to create accessible Open Learning Sources to complement the Open Science movement.* - *Promote the inclusiveness of virtual events.* - *Create and maintain access to stable internet and sufficient bandwidth.* - *Cooperate with telecommunication companies to increase free access (eg. zero-rated data) to online educational resources.*

ABOUT THE GYA

The vision of the GYA is science for all; science for the future, and its mission is to give a voice to young scientists and researchers around the world. The GYA, founded in 2010, is an independent science academy of 200 outstanding early- to mid-career researchers from six continents who are selected from across disciplines based on their academic excellence and commitment to engage with society. GYA members serve five-year terms, and the GYA presently counts members and alumni from 86 countries. The GYA administrative Office is publicly funded and hosted at the German National Academy of Sciences Leopoldina. The wide array of GYA activities are supported by a range of international public and private funders.