

The Opportunity for National and Global Science Communities to Stimulate Action on the Sustainable Development Goals

Dr. E. William Colglazier (bcoglaz@aaas.org)
Editor-in-Chief, *Science & Diplomacy* (www.sciencediplomacy.org)
Senior Scholar, Center for Science Diplomacy
American Association for the Advancement of Science (AAAS)
April 9, 2019 Incheon, Korea
IAP Triennial Conference

Opportunities Created by the SDGs

- Practical political consensus defining sustainable development/social, economic & environmental goals/aspirational/ all countries
- Longevity to 2030/detailed targets & indicators
- 17 goals to be achieved together/ synergies maximized & tradeoffs minimized
- Science, Technology, and Innovation (STI) essential to achieve progress
- No one should be left behind/multi-stakeholder engagement and partnerships required

Challenges to Making Progress

- Aspirational rhetoric is easy to say/effective policies, funding and sustained action are hard
- Targets do not cover all essential elements/many indicators are inadequate
- Voluntary National Reviews (VNRs) are useful, but not real action plans
- Stakeholder engagement is weak in most countries
- Not every country and science community is paying attention

Science, Technology, and Innovation (STI) Can Help Achieve the SDGs

- Advising on challenges
- Providing indicators for monitoring progress
- Advising on policies & actions with periodic feedback on what is working and not working
- Searching for new innovative solutions
- Building a robust STI community and science-policy interface in every country and globally

Building Robust National and Global Science Communities

- Advancing the worldwide scientific enterprise will remain the highest priority for national and global science communities and most scientists (that is certainly expected and necessary)
- Almost all countries and societies recognize the critical importance of their scientific enterprises to their prosperity and security
- Promoting the universal values that come from doing science (supports freedom of inquiry, rewards excellence and merit, bases decisions on evidence, supports academic freedom, relies on peer review and ethical behavior, requires openness and transparency via publication, etc.) are as important for the achieving the SDGs as for advancing science
- The worldwide scientific community has an opportunity and a responsibility to help the world achieve the 2030 Agenda

“STI for SDGs” Strategies for Science Communities (first two of four)

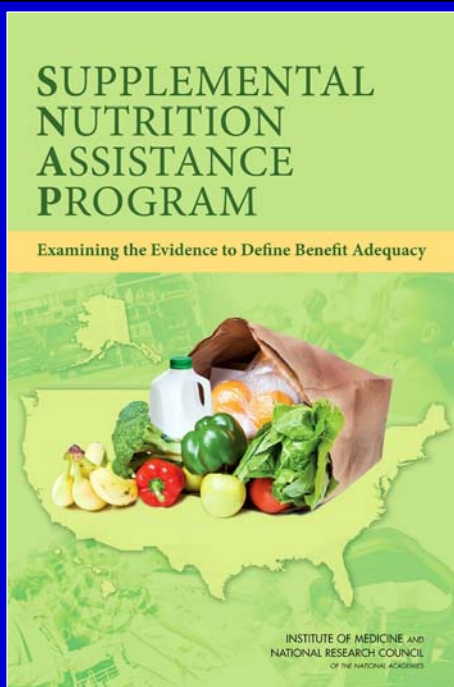
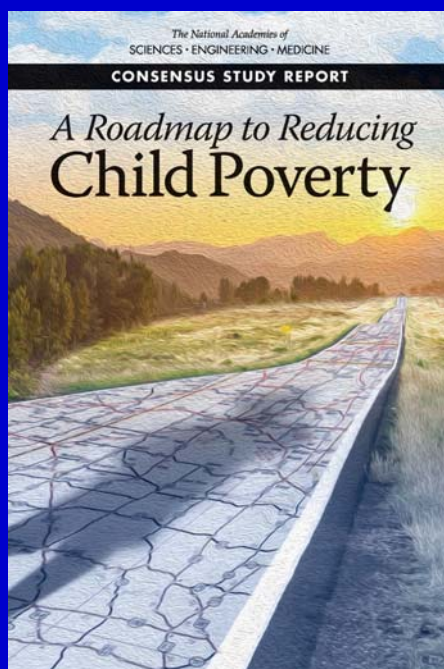
- Policy Studies (focusing on key issues, identifying challenges, advising on policies and actions, providing indicators for monitoring progress, evaluating what is working and not working, recommending improvements)
- Roadmaps (engaging with society - government and stakeholders – to produce detailed “STI for SDGs” action plans at the local, institutional, national, and global levels that are continually updated and revised)

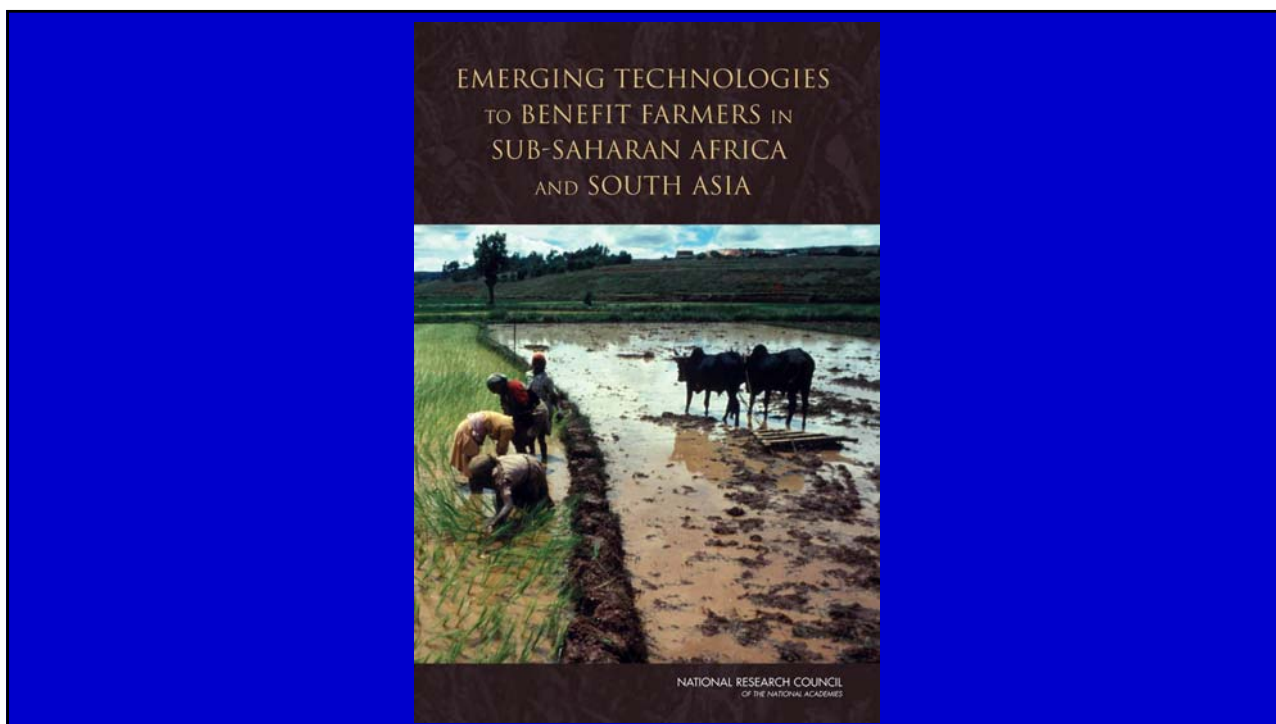
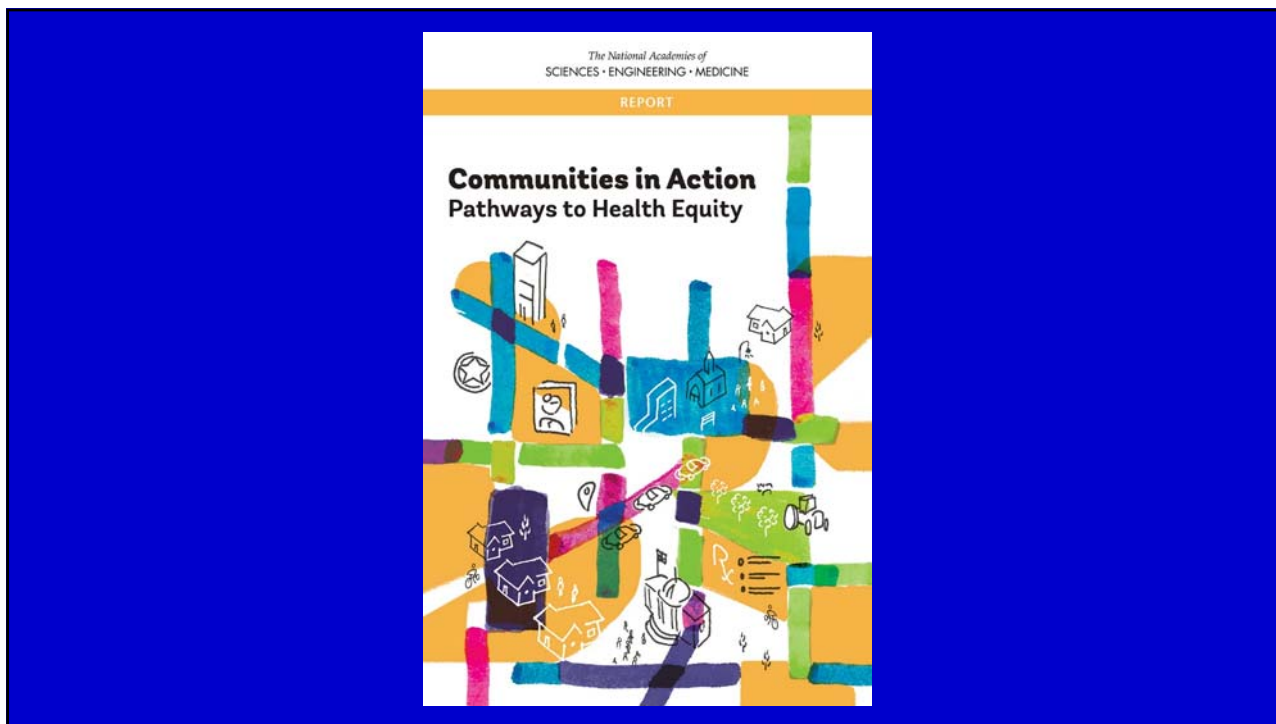
“STI for SDGs” Strategies for Science Communities (second two or four)

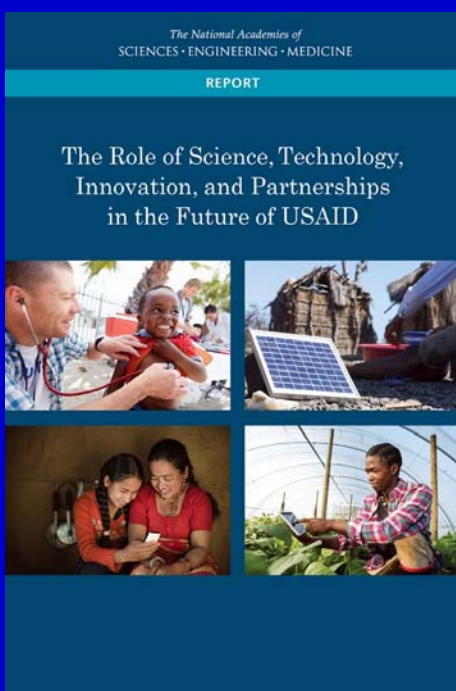
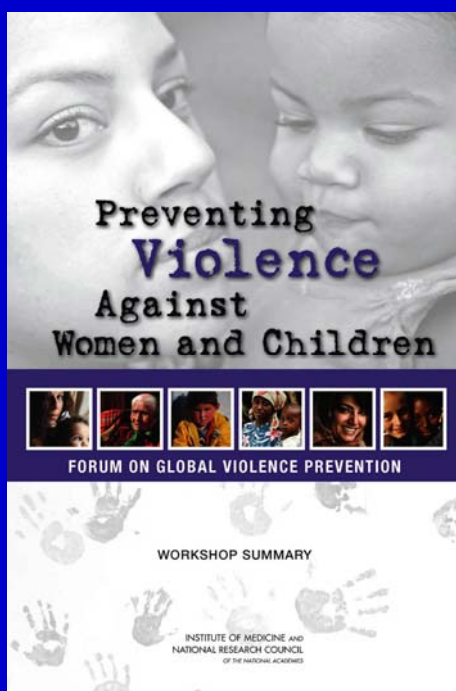
- Systems Analysis (providing scientific input on the global constraints to ensure a stable and resilient earth system -- atmosphere and climate, water and oceans, biodiversity and ecosystems -- to maximize synergies, minimize tradeoffs, and help all countries deliver their share of global responsibilities)
- Disruptive Innovation (advising on how to maximize the opportunities and minimize the threats of rapid technological innovation to enable societies to accelerate progress, negate misuse, and leap over political hurdles)

Example of Using Policy Studies to Provide Science Advice on Reducing Poverty and Inequality (SDGs 1 & 10) (2019 Brazil Academy Conference)

- SDG #1 Target 1.3: Social Protection Strategies and Systems for the Vulnerable and Poor (“safety net”)
- SDG #1 Target 1.8: Sound Development Strategies for Countries
- SDG#10 Target 10.1: Income Growth for the Bottom 40%







Example of a Guidebook on Development of National “STI for SDGs” Roadmaps

- Series of Expert Group Meetings (EGMs) in 2018/19 led by the World Bank, the Government of Japan, and the United Nations Inter-Agency Task Team (IATT) to develop a guidebook on national “STI for SDGs” roadmaps
- Near-final draft discussed at the final EGM in Nairobi in April and the final draft to be presented at the Multi-Stakeholder STI Forum at the UN in May
- Final Guidebook to be presented to the UN High Level Political Forum (HLPF) in July and to the UN General Assembly in September

Taking a Deep Dive on GOAL 14: Conserve and Sustainably Use the Oceans, Seas, and Marine Resources (e.g., roadmaps needed at many levels) (2019 Oman Conference)

14.1 Prevent and significantly reduce marine pollution

14.2 Sustainably manage and protect marine and coastal ecosystems

14.3 Minimize impacts of ocean acidification

14.4 Regulate harvesting and end overfishing

14.5 Conserve at least 10% of coastal and marine areas

14.7 Increase economic benefits from sustainable use of marine resources

14.a Increase scientific knowledge, develop research capacity, and transfer marine technology

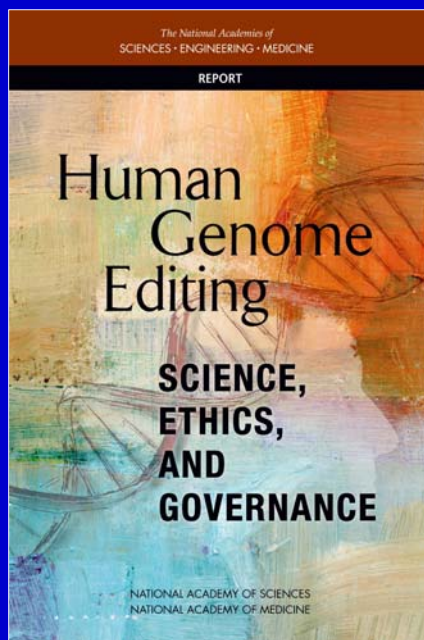
14.c Implement international law in UN Convention on Law of the Sea

Example of Systems Analysis: “The World in 2050” Report and its Six Big Transformations

- Human Capacity and Demography (implementing advances in human ability and well-being through improvements in education and health care)
- Consumption and Production (doing more that is worthwhile with less negative impact)
- De-carbonization and Energy (providing clean and affordable energy for all)
- Food, Biosphere, and Water (providing nutritional food and clean water while protecting the biosphere and oceans)
- Smart Cities (transforming our cities with smart infrastructure, high quality services, and light environmental footprint)
- Digital Revolution (ensuring that new technologies are a powerful driver of change to support sustainable development)
- (<http://www.iiasa.ac.at/web/home/research/twi/Report2018.html>)

Advising on Disruptive Technological Innovation

- Providing foresight on the implications of rapidly advancing scientific knowledge and technological innovations that can be disruptive and transformational for societies in order to harness new opportunities and solutions and to deal with emerging threats and challenges
- Assessing an enormous array of topics: artificial intelligence, 5G, robotics, gene editing, blockchain, social media manipulation, quantum computing, big data, internet of things, geoengineering, carbon sequestration, etc.
- Recognizing the downsides is an important as identifying the upsides



Recent Efforts by Academies on Disruptive Technologies

- 2019 Update to The World in 2050 with a new report on the Digital Revolution and how it can enable achieving the UN 2030 Agenda (to be presented to the STI Forum and the HLPF)
- 2018 Second International Summit on Human Genome Editing (Academy of Sciences of Hong Kong, Royal Society, National Academy of Sciences, National Academy of Medicine)
- Academy studies needed on “Robotics, AI, and Jobs” and “Responsible Government and Corporate Behavior to Counter Social Media Manipulation for Fake News, Inciting Violence, and Authoritarian Controls while Permitting Freedom of Speech, Societal Communication, Knowledge and Learning”

A Key Challenge for Science Communities

- How can we engage more effectively with all stakeholders in society at every level (government, civil society, business, not-for-profit organizations, professional societies, vulnerable groups, etc.)
- To Listen
- To Communicate
- To Advise and Influence
- To Build Joint Action Plans

A Responsibility the Science Community Cannot Ignore

- Ultimate success of the 2030 Agenda will be determined by the detailed decisions people make and the actions they take over the next decade, but the SDGs are a great gift in helping us to aim at a desired future for the world
- The scientific community can aid in that journey and is essential for making progress
- Science diplomacy (both science advancing diplomacy and diplomacy advancing science) is essential in helping the science community to fulfill its responsibility

