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0.1.1 Science, Technology, and Innovation Policy and the SDGs

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Abstract

As introduced in 0.1, the mobilization of science and technology innovation is expected to help solve social issues. This paper focuses on the “2030 Agenda for Sustainable Development” (Sustainable Development Goals: SDGs), a global movement initiated by the United Nations.

In September 2015, the UN General Assembly unanimously adopted the SDGs, the agenda comprising a total of 17 goals and 169 targets. Characterized by economic growth, social inclusion, and environmental protection, the SDGs are challenges—that is, goals to be achieved—that need to be addressed by developed and developing countries together. The UN thus established a new forum on science and technology innovation, and is strengthening its collaboration with STI (STI for SDGs) to an unprecedented degree, including achieving innovation and the SDGs through collaboration with partners like NGOs and the business sector. Various organizations involved with science and technology innovation, including the ICS and AAAS, are actively engaged in such activities. This paper discusses the SDGs and science and technology innovation policy, and relationship between the SDGs and innovation.

Keywords

SDGs, STI for SDGs, multi-stakeholder, common language, systems thinking, Sustainable Development Goals (SDGs) Promotion Headquarters, Science and Technology Advisor to the Minister of

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Foreign Affairs, STI Forum, ICS, SATREPS, capacity building, JST, JICA, Future Earth, Sendai Framework for Disaster Risk Reduction, UNDP, SHIP, ESG investment, CSV

1 Introduction

In September 2015, the UN General Assembly unanimously adopted the 2030 Agenda for Sustainable Development (SDGs) comprising 17 goals and 169 targets. Characterized by economic growth, social inclusion, and environmental protection, the SDGs are challenges—that is, goals to be achieved—that need to be addressed by developed and developing countries together. The United Nations has established a new forum on science and technology innovation, and is strengthening its collaboration with STI (STI for SDGs) to an unprecedented degree, including achieving innovation and the goals through collaboration with partners like NGOs and the business sector. Various organizations involved with science and technology innovation, including the ICS and AAAS, are actively engaged in such activities. This paper discusses the SDGs and science and technology innovation policy, and the relationship between the SDGs and innovation.

2 SDGs and science and technology innovation

2.1 What are the SDGs?

In September 2015, the United Nations General Assembly convened the Sustainable Development Summit, where “Transforming Our World: The 2030 Agenda for Sustainable Development” was unanimously adopted. The agenda set seventeen goals as important guidelines for the international community to eradicate poverty and achieve a sustainable society by 2030 through the harmonizing of three key elements—namely, economic growth, social inclusion, and environmental protection—based on the principle that “no one will be left behind.” These goals were formulated on the basis of the post-2015 discussions held as a successor to the Millennium Development Goals (MDGs) formulated in 2001, and are known as the Sustainable Development Goals (SDGs). The SDGs were established as universal goals applying to all countries, including the remaining topics of the MDGs and issues that had emerged over past fifteen years (e.g., urbanization, climate change, and inequality), which must be addressed within both developed and developing countries. In order to achieve these goals, it is vital to build a “global partnership” in which various actors (including governments, civil society, and the private sector) from both developed and developing countries work together (i.e., multi-stakeholder) and utilize a variety of resources (including ODA and private sector funds) and functions as a common language. The SDGs comprise 17 goals, 169 targets, and 244 (232 when excluding overlaps) indicators; the goals/targets are interconnected (NEXUS). Systems thinking is essential to understand individual goals/targets and the interaction between all of the goals/targets of the SDGs, as well as address them in a holistic and integrated manner. The methods used to promote the achievement of the SDGs are characterized by 1) presenting ambitious goals, 2) not specifying implementation mechanisms, and 3) boosting them through monitoring and evaluation. As a

mechanism to achieve these goals, the UN intends to establish a new High-Level Political Forum for sustainable development (HLPF) to conduct annual global follow-ups and evaluations, and hold a summit-level meeting every four years (with the next such meeting scheduled for 2023).

Following its adoption by the United Nations, the SDGs Promotion Headquarters, comprising all Ministers of State, was established in Japan in May 2016, and the SDGs Implementation Guiding Principles were formulated in December the same year. Science and technology policy is also actively discussed at the Council for the Promotion of Science and Technology Diplomacy, which has been presided over by the Science and Technology Advisor to the Minister for Foreign Affairs. This position was held by Professor Emeritus Kishi Teruo of the University of Tokyo from September 2015 to March 2020, Professor Kano Mitsunobu of Okayama University from April 2019 (Deputy Science and Technology Advisor), and President Matsumoto Yoichiro of the Tokyo University of Science from April 2020. In May 2017, a proposal for addressing the SDGs titled, “Recommendation for the Future: STI as a Bridging Force to Provide Solutions for Global Issues,” was compiled.



Figure 1: The Sustainable Development Goals (SDGs).

Source: United Nations Information Center

2.2 Expectations for science and technology innovation

Science and technology innovation policies and the promotion of research and development are required to create new value and services able to meet users' diverse demands and sympathies, rather than simply pursuing technology innovation as was the case in the past. The SDGs advance common values and visions

for the future of society, and can serve as targets for new values and services that are expected to be realized through science and technology innovation.

In promoting the SDGs, great expectations are placed on science and technology innovation. To this end, the UN has established the Multi-Stakeholder Forum on STI for the SDGs (the STI Forum). The scientific community is also making various efforts to address the SDGs. Prior to the adoption of the SDGs, the International Council for Science (ICSU) and the International Social Science Council (ISSC), which merged in 2018, jointly produced a report reviewing the seventeen proposed goals. The most recent report analyzes the relationships (i.e., trade-offs) between the SDGs.

Active discussions are also being hosted by science forums and supporting agencies, including the AAAS Annual Meeting, World Science Forum, and Science Agora.³ The SATREPS program, in which developed and developing countries work together to solve global-scale challenges, has been implemented as a pioneering initiative in Japan via the Japan Science and Technology Agency (JST) and Japan International Cooperation Agency (JICA). Since 2008, SATREPS has conducted over a hundred projects in more than forty countries in the fields of environment, energy, bioresources, disaster prevention, and infectious diseases—fields closely connected to the SDGs—and has contributed to achieving the SDGs through various research results, the implementation of that research in society, and capacity building.

Various efforts are being made in fields of research closely related to each of the seventeen goals. For example, the intergovernmental Group on Earth Observations (GEO) has positioned the SDGs as an important policy for their organization. In addition to actively collaborating with UN agencies, including through cooperation in monitoring, GEO carries out extensive outreach work. In the global environmental research field, “Future Earth” is an international collaborative research platform for realizing a sustainable global society. Originally proposed at Rio+20 in 2012, Future Earth is strengthening its collaboration to achieve the SDGs. Meanwhile, in the disaster reduction field, the Sendai Framework for Disaster Risk Reduction, formulated prior to the adoption of the SDGs, was included in Goal 11: Sustainable Cities and Communities.

3 SDGs and innovation

The key to achieving the SDGs is partnership with business. Various activities that view the SDGs as a new business opportunity are currently being conducted. For example, SHIP, an initiative run by the United Nations Development Programme (UNDP) and the Japan Innovation Network (JIN), is building “an open innovation platform that views achieving the SDGs as an opportunity for innovation, and which aims to solve problems around the world by drawing on companies’ technology and know-how.” In this respect,

³ Science Agora 2016 Symposium Talk Session, “What can innovation do to solve the SDGs and other issues facing the world today?” (November 2016, Miraikan). In his talk, the AAAS president, Holt, mentioned that there was little awareness of the SDGs in the United States and pointed out that scientists are partly responsible for this.
<http://www.jst.go.jp/csc/scienceagora/reports/2016/pickup/pickup1.html>

Creating Shared Value (CSV) is drawing attention from corporate strategy, while ESG investment⁴ is drawing attention from finance.

4 Conclusion

Since the Budapest Declaration in 1999, the scientific community has been engaged in a new “science for society” initiative. With the adoption of the SDGs in 2015, the relationship between science and society entered a new phase. In studying science and technology innovation policy, we hope to deepen our understanding of the SDGs as interfaces between science and technology innovation and society.

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⁴ The Government Pension Investment Fund (GPIF) website explains the relationship between ESG investment and the SDGs: <http://www.gpif.go.jp/operation/esg.html>. The Ministry of Economy, Trade, and Industry also hosts a study group discussing long-term investment for sustainable growth (ESG and intangible asset investment): http://www.meti.go.jp/committee/kenkyukai/sansei/jizokuteki_esg/001_haifu.html

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