

**G20 Development Working Group (DWG)  
Guiding Principles for the Development of  
Science, Technology, and Innovation for SDGs Roadmaps  
(Final)**

## **Introduction**

1. In September 2015, the United Nations General Assembly unanimously adopted “the 2030 Agenda for Sustainable Development” that comprises 17 Sustainable Development Goals (SDGs) with 169 targets.

2. The SDGs are a vision for countries and the international community to tackle poverty, gender inequality, environmental and other global challenges in a holistic manner through collaborative efforts towards achieving sustainable development by 2030, and helping to ensure that “no one is left behind”. Attaining a sustainable, inclusive, people-centered and resilient society is a common aspiration for the world.

3. According to the 2030 Agenda, harnessing science, technology and innovation (STI) is crucial for achieving the SDGs (“STI for SDGs”). The Science, Technology, Innovation and Capacity-Building section of the Addis Ababa Action Agenda (AAAA), furthermore, calls for Member States to “*resolve to adopt science, technology and innovation strategies as integral elements of [their] national sustainable development strategies to help to strengthen knowledge-sharing and collaboration*” (Paragraph 119) and have decided to establish a Technology Facilitation Mechanism (Paragraph 123).

4. The G20 acknowledges that effective engagement of various stakeholders, including government, academia, research institutions, civil society, private sector and international organizations, is essential in unleashing the potential for STI. Similarly, the G20 recognizes the importance of identifying, sharing and promoting best practices and methodologies for localized and customized application of STI, as well as the work of the G20 Digital Economy Task Force to mainstream digitalization in low income and developing countries.

5. An STI for SDGs roadmap (hereinafter referred to as “roadmap”) can be one of the many effective tools to facilitate such multi-stakeholder engagements and international partnerships. While the development and application of STI for SDGs roadmaps are voluntary, guiding principles on roadmaps are outlined as follows.

## **Guiding Principles for the Development of STI for SDGs Roadmaps**

### **1 Structure of Roadmaps**

6. STI for SDGs roadmaps function as policy action plans, aligned to national development strategies and take a holistic approach to the SDGs. In light of the interdependences and interlinkages of the SDGs, STI for SDG roadmaps may be used to pursue synergies among SDGs, while managing possible tradeoffs between them. They may also assist short- to long-term planning and priority-setting by serving as communication tools for co-ordination among stakeholders.

7. There are various layers on STI for SDGs roadmaps, which could involve cooperation at the international, regional, national and sub-national levels, and along different thematic areas. Each roadmap should specify tangible actions in order to ensure practical impact, allowing monitoring-of the progress at each stage of implementation. Governments that wish to develop roadmaps, should take account of this structure, keeping in mind the relevant discussions at various fora, such as the United Nations Multi-stakeholder Forum on Science, Technology and Innovation for the SDGs (UN STI Forum).

## **2 Role of the Government**

8. For governments seeking to develop a roadmap, their role is to set strategic direction to the roadmaps through dialogue and input from all relevant stakeholders, while aiming for policy implementation coherence. Where possible, roadmaps on all levels should be assembled for monitoring overall progress and identifying underlying issues with political, social, economic, and scientific ramifications. Progress should be measured, as much as possible, using various reporting measures, in line with national processes and priorities.

9. Promotion of “STIs for SDGs” should be aligned with the national development strategies and STI policies for achieving a sustainable and inclusive development.

10. Governments should consider necessary preconditions for encouraging the advancement of science, technology and innovation, including mechanisms that protect intellectual property rights. The G20 should promote development of the underlying infrastructure that will enable STI for SDGs (e.g. digital infrastructure, ICT networks, research and development infrastructure among others). Due consideration should be given to investment in STEM and promoting the active role of women and girls in STEM fields, as agreed in G20's #eSkills4Girls.

11 To this end, governments should, as appropriate, allocate resources and encourage private sector investment to facilitate and implement the roadmaps.

## **3 Sharing Experience and Good Practices**

12. STI for SDGs roadmaps should not be based on a one-size-fits-all approach and, if developed, should be undertaken in an inclusive manner with all stakeholders, taking into account local culture, historic background, and indigenous and local knowledge, while seeking to achieve sustainability in all dimensions.

13. Special considerations should be made to stages of development, socio-economic conditions and institutional settings of each country.

14. In this context, G20 and non-G20 countries alike should share experience broadly on various challenges associated with drafting and implementing roadmaps, to help countries or other entities that are seeking to commence the process, in order for them to avoid facing similar issues and challenges. Likewise, it may be useful and productive for countries and other entities to receive various information and experience on roadmap formation to widen their perspectives on policy options. The G20 recognizes that roadmap development may benefit greatly from sharing knowledge and good practices voluntarily across all levels.

## 4 International Cooperation

15. Capacity building in STI through international cooperation, enables each country to achieve sustainable development, and should be considered for inclusion in roadmaps. International cooperation, including through South-South, North-South and triangular cooperation, may be a means to facilitate capacity building, and education in STI, and encourage mobility of scientific and technical personnel. The G20 invites each country to consider STI elements in their modalities of international cooperation, including, but not limited to, official development assistance (ODA), taking into account of challenges of countries, in particular developing countries including least developed countries, landlocked developing countries, small island developing states, and countries in Africa in line with the AAAA<sup>1</sup>.

16. The G20 also encourages development partners and international organizations to: i) facilitate peer learning, ii) align their contributions to needs identified in the national STI roadmaps for research and technology collaboration and voluntary technology transfers on mutually agreed terms, and iii) nurture scientific research culture to promote technology innovation, especially at educational institutions.

17. Furthermore, the G20 notes existing initiatives, such as the UN Technology Facilitation Mechanism, UN Technology Bank, the UN STI Forum and Commission on Science and Technology for Development.

## 5 Other Points to Consider

18. Furthering innovation for the SDGs is important in enabling new or improved solutions for better results and greater impact, which benefit and empower the poorest and most vulnerable. Countries should consider facilitating the adoption of innovative solutions, which may include business models, policy practices/approaches, technologies, behavioral insights and ways of delivering products and services.

19. Countries, when applying STI-based solutions to development challenges, may also wish to consider the ethical, social and legal impacts of STI applications. The G20 recognizes the importance of undertaking impact assessment of STI applications on the well-being of developing countries.

20. Roadmaps should also consider STI policymaking that takes youth and women's perspectives into account, as technology has the potential to play an important role in youth development and entrepreneurship as well as advancing gender equality and empowering women and girls.

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<sup>1</sup> The AAAA recognizes “the creation, development and diffusion of new innovations and technologies and associated know-how, including the transfer of technology on mutually agreed terms are powerful drivers of economic growth and sustainable development” (Paragraph 114), and calls for enhanced “international support and establishment of multi-stakeholder partnerships for implementing effective and targeted capacity-building in developing countries, including least developed countries, landlocked developing countries, small island developing states, African countries, and countries in conflict and post-conflict situations, to support national plans to implement all the sustainable development goals” (Paragraph 115).