

# Science, Technology and Innovation (STI) for Sustainable Development Goals (SDGs) Roadmaps for India

## I. Concept and Framework

### 1.1 Introduction

In September 2015, member states of the United Nations adopted the 2030 Agenda for Sustainable Development covering 17 Sustainable Development Goals (SDGs). The agenda was meant to be realized through significant scaling up of global cooperation, simultaneously with localisation and convergence in the domestic policy making for last mile delivery. The positioning of Science, Technology, and Innovation (STI) as a means to achieve progress on SDGs has triggered significant efforts to roadmap STI pathways and to foster rapid adoption of technological solutions. Platforms such as the Technology Facilitation Mechanism (TFM), was established in 2015 alongside the Agenda 2030 to strengthen synergies and cooperation within the science and technology initiatives among UN agencies to achieve the SDGs.

Being one of the six participating countries in the Global Pilot programme, India's efforts are focused on STI for SDGs roadmaps on four specific SDGs, namely Goal-2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture); Goal-3 (Ensure healthy lives and promote well-being

for all at all ages); Goal-6 (Ensure availability and sustainable management of water and sanitation for all); and Goal-7 (Ensure access to affordable, reliable, sustainable, and modern energy for all). These four goals offer significant opportunities for achieving the SDGs in the country, given the deep inter-linkages along with all the other goals of the SDGs. STI applications are at the core of strategies towards the four goals with intrinsic criteria of access, equity, inclusion (AEI) and sustainability. The Pilot country experiences with regard to STI for SDGs roadmaps and role of international organisations is given in the Annexure.

India's STI pathways are being shaped by its development needs more than ever. India's trajectory towards achieving the SDGs has been facilitated through several development initiatives built on the multi-tier institutional structures that provide not only the basic necessities like food, health, education and sanitation but also bring a substantial change in the living standard of the people particularly those at the bottom of the pyramid. India's own national development agenda mirrors the

This summary document is based on the report on STI for SDGs Roadmaps for India prepared by a research team led by Professor Sachin Chaturvedi and comprising Dr Sabyasachi Saha, Dr K. Ravi Srinivas, Dr Amit Kumar, Dr Savitha K.L., and Mr Syed Arslan Ali of RIS. The support and guidance received from the Office of Principal Scientific Advisor to the Government of India is duly acknowledged.

SDGs comprehensively. Government of India launched many flagship initiatives which are aligned with the SDGs. Initiatives like Ayushman Bharat, One Nation One Ration Card (ONORC), POSHAN Abhiyaan , Ujjawala among others have been launched to address the issue of hunger, health and wellbeing. Within the energy domain, the government has started the National Solar Mission, PM-KUSUM, Grid Connected Solar Rooftop Programme and Technology Mission Programme on Clean Energy. Initiatives such as JAM Trinity/MUDRA have contributed immensely in increasing the financial inclusion among the marginalized and underprivileged sections of the society. In the area of clean water and sanitation Government has launched Swachh Bhart Mission, Jal Jeevan Mission and Namami Gange Programme. These schemes and mission mode projects have provided a giant leap forward in addressing the issues of clean drinking water, waste management, water conservation and recycling. Similarly the challenges of clean cooking fuel and affordable energy have been addressed through initiatives like free LPG distribution/ connection scheme – Pradhan Mantri Ujjwala Yojana (PMUY) – and subsidized LED bulb distribution under Ujala Yojana.

In the last two decades India has not only encouraged FDI and private sector R&D but has also experimented with several models of public-private partnership for joint R&D projects. India has also seen spontaneous supply of cost effective innovations suited to local needs driven by individual innovators often outside formal innovation support systems. India has been mindful of the developmental gaps facing its citizenry and the growing sustainability challenges of resource intensive economic growth. India's approach to addressing sustainability has been rooted in aspirations towards leveraging new knowledge and innovations, not only to match local needs but also to overcome resource constraints in many cases. This has traditionally been pursued under the broad policy paradigm of 'self-reliance'. In recent

years, India has emerged as powerhouse of digital technological solution for SDGs.

## 1.2 India's Emerging STI Ecosystem for accelerated outcome on SDGs

In recent years, India's technology deepening and diffusion has been accelerated through new partnerships with private sector including the thriving start-up ecosystem. In a few areas this has been self sustained with other sectors catching up. Respective government agencies and department including the ones looking at science

### Box 1: Innovation Frontiers for SDGs

DST has rolled out several initiatives in this regard like Synergistic Training program Utilizing the Scientific and Technological Infrastructure (STUTI), Science and Engineering Research Board –Department of Science and Technology (SERB-DST) among others. To address the particular challenges in the domain of SDG 2, 3, 6 and 7 DST has funded and supported projects. DST in collaboration with its autonomous institute Maharashtra Association for the Cultivation of Science (MACS)-Agharkar Research Institute (ARI), Pune developed and supplied 162.5 and 225 quintals breeder seeds of high yielding, disease resistant, early maturing wheat and soybean to the Seed multiplying agencies seed industries, farmers and producers organizations. Cuttings and saplings of grape variety ARI 516 have been supplied to farmers (DST, 2021). Similarly in the area of Goal 3, Sree ChitraTirunal Institute for Medical Sciences & Technology (SCTIMST), established under the DST technical research Centre has developed two biomedical implant devices namely Atrial Septal Defect (ASD) Occluder and Intracranial Flow Diverter Stents in collaboration with National Aerospace Laboratories, Bangalore (CSIR-NAL) using superelastic NiTiNOL alloys. DST has assisted in the development of a novel technology using UV-Photocatalysis for the treatment of municipal sewage and highly polluting industrial waste water, as well as the Advanced Oxidation Process (AOP) technology for zero discharge water management systems. The Department of Biotechnology is coordinating the national efforts in clean energy research, development and demonstration has established Clean Energy International Incubation Center which is a joint initiative of Tata Trusts and the Government of India supported by Department of Biotechnology, BIRAC, Tata Power and Tata Power – Delhi Distribution Limited.

Source: DST, MoST

and technology more closely have given special attention to this aspect. The Office of the Principal Scientific Adviser to the Government of India (OPSA) has been instrumental in launching a new mission programme titled AGNII (Accelerating Growth of New India's Innovations) to boost the innovation ecosystem in the country by connecting innovators across industries, individuals and at the grassroots to market and help commercialize innovative solutions. AGNII provides a platform for innovators to bring their technology ready products and solutions to industry and the market, thereby helping propel techno-entrepreneurship which can usher a new era of inclusive socioeconomic growth. The mission covers the services needed to support and advance indigenous innovations that are ready for the market, throughout the entire techno-commercialization cycle. As part of the initiative, government R&D facilities and academic institutions will be partnered with to help commercialise their innovations. In order to boost synergy of the Science and Technology organizations, the OPSA has also been actively involved in the creation of Science and Technology (S&T) Clusters as official umbrella structures for S&T organisations in cities that already have a critical mass of S&T-focused organisations. A shared ecosystem—a grouping of 15–20 institutions functioning as one large institution under these S&T Clusters—is being created. It also ensures Long-term autonomy, financial viability, and collaboration with participating and external agencies.

Through the Department of Biotechnology (DBT), Department of Science and Technology (DST), Council of Scientific and Industrial Research (CSIR), and Science and Engineering Research Board (SERB), the Ministry of Science and Technology have played a crucial facilitating role towards in creating international S&T alliances in critical fields like energy, water, health, and agriculture. India has significant collaborations in new fields of science and technology, supporting R&D aimed at solving problems in these

areas. In the areas of health/medical science and food security/agriculture science, Indian Council of Medical Research (ICMR) and Indian Council of Agricultural Research (ICAR) are the key national agencies respectively. There are specific Programme Divisions within each Department of the Ministry of Science and Technology that support Innovations, Research, Development, and Demonstration (R, D & D) Projects, as well as Capacity Building in the highlighted areas (Ministry of Science & Technology, 2021) (refer Box 1).

The role of line departments beyond the science ministries and scientific agencies has increasingly become key determinant of India's technology adoption. The Ministry of Jal Shakti in collaboration with National Remote Sensing Centre, Hyderabad has been deploying Geographic Information System (GIS), Hydro geomorphological mapping (HGM) and remote sensing technologies for groundwater use efficiency and availability. Likewise, Ministry of Health and Family Welfare along with Immunization Technical Support Unit (ITSU) and United Nation Development Programme (UNDP) has innovatively inculcated the use of ICT and IoT devices for vaccines transportation, storage and warehousing as a cost effective method. Several such initiatives have been rolled out by various ministries and their autonomous and associated bodies. Therefore, line ministries play a pivotal role towards broadening the innovation dimensions on one hand and providing necessary infrastructure for its deployment on the other to address the challenges towards SDGs.

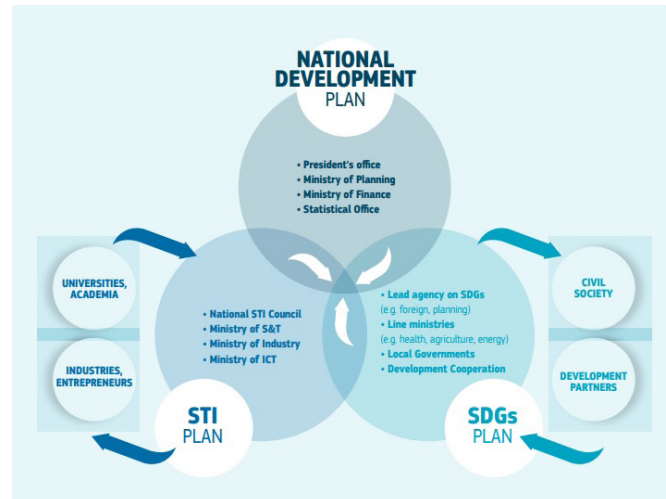
In the emerging technology scenarios, wherein, technology is at core of realizing the goals and targets set under the Agenda 2030, there is an imperative to go beyond the contemporary conceptual and analytical framework to comprehend the development of an STI ecosystem suitable for the purpose of achieving SDGs. In this scenario, there is a need to develop and pursue an integrated approach, where all the relevant stakeholders such as government, private

sector, academia, research, international agencies and civil society, are taken on board. Several international agencies have prepared their respective roadmap drawn from methodologies of UN DESA.

With regard to approach, connecting the national innovation system with other

forms of innovation system such as regional and sectoral, becomes more organic and spontaneous. During the pandemic, the integration of the national innovation system with the bio-medical sector in India, could lead to the development and delivery of healthcare products and services in a short span of time. Such a new approach needs

**Figure 1: An Integrated Approach**



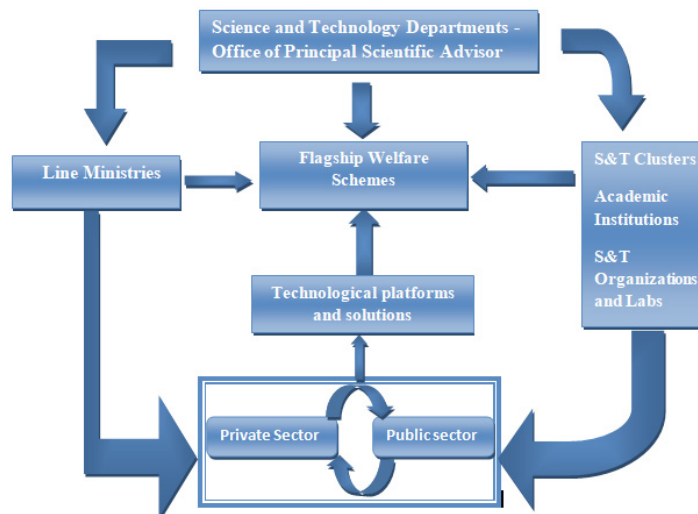
Source: UN Guidebook on STI for SDGs Roadmaps (2021)

to be pursued in multiple sectors towards achieving the SDGs. The UN Guidebook on STI for SDGs Roadmap has elaborated the rationale for STI for SDGs Roadmap and the need for strengthened international partnerships on STI for SDGs. The Guidebook

has also elaborated for an integrated approach which is depicted in Figure 1.

The emerging integrated approach in India is a reflection of the importance of some of the components of the UN Guidebook

**Figure 2: STI for SDGs Roadmaps for India**  
**Integrated Ecosystem for Large Scale Technology Adoption for SDGs**



Source: Developed by RIS

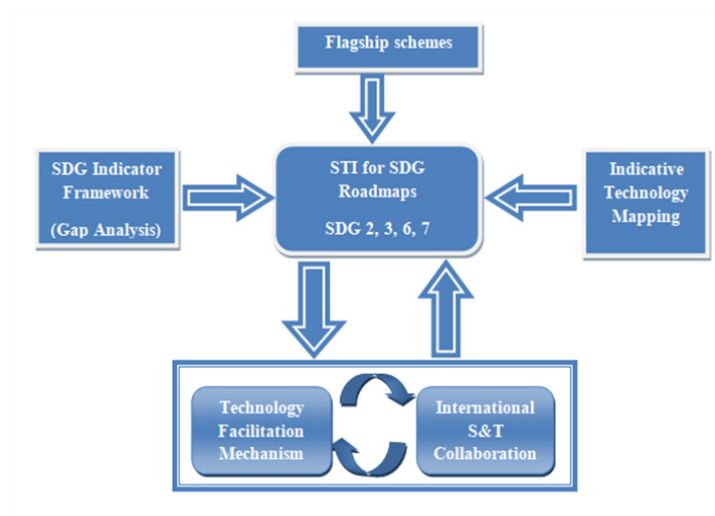
on STI for SDGs Roadmaps. It is essential to establish a STI ecosystem, composed of all relevant stakeholders, including government ministries/departments, state governments, academic and research institutions, the public and private sector, and civil society organizations. Such an ecosystem would facilitate close coordination among the relevant stakeholders and would help the line ministries in formulating their respective plans to integrate the application of STI for achieving the related SDG goals and targets. All important scientific ministries and departments are vital participants in the process and must play a significant role in directing India's STI activities towards achievement of the SDGs. As development partners in this effort, organisations from the public and private sectors, businesses, start-ups, and social enterprises are integral to the process. Based on the emerging experience, India's new integrated ecosystem for large scale technology adoption for SDGs that delivers on major welfare schemes for accelerated outcomes on SDGs can be depicted as in (Figure 2). Similarly, India's contribution to the TFM may be based on its own integrated ecosystem which can have external linkages as depicted in Figure 3.

### 1.3 Indicative Technology Mapping: An Input to India's STI for SDGs Roadmaps

As a part of road-mapping efforts, an attempt has been made towards building a comprehensive "Indicative Technology Mapping (ITM)" for the selected four SDGs (2, 3, 6 and 7), their underlying targets and interlinked indicators from a cross-domain perspective. The ITM is mainly focused on a set of existing as well as emerging technologies, whose adoption and diffusion are critical to achieving progress on all the selected SDGs. It also aims to indicate areas of technological capability dominance that are vital for achieving progress on select SDGs. Utilizing domestically accessible technologies, India can strengthen TFM and seek and provide technological exchanges under South-South Cooperation Partnerships (SDG17).

The ITM depicts the scale and diversity of technologies which are deployed or have the potential for deployment at scale for achieving the relevant targets under the SDGs. The indicator wise categorization and the cross sectoral linkages of the technologies with SDGs and its inter linkages with other SDG targets and indicators will

**Figure 3: India's contribution to TFM - Proposed Framework**



Source: Developed by RIS



provide a comprehensive view of how the deployment of such technologies can complement the achievement of not only the focused SDGs but other SDGs as well.

The mapping of technologies with their respective indicators and SDG targets open different areas of innovation, as laid out in the UN Guidebook for preparation of STI for SDGs Roadmap. Given that there exists an array of technological options that could cater to these challenges, it is imperative to first assess these alternatives. One way of doing this is by first classifying all these technologies into existing, emerging or new. Since newer technologies will take some time to fully penetrate their desired markets, the prioritization of alternative technologies will have to be such that utmost importance is given to existing technologies, then emerging and least to new technologies.<sup>1</sup> This way also allows us to identify gaps in the existing technology landscape. This information could be very useful in channeling research investments into new technologies that address these gaps.

Targets defined under each SDG are development objectives that need to be achieved universally, in totality and in spirit to fulfill the aspirations of a sustainable and equitable world. Targets are also instruments to connect more than one SDG so that achievement of a particular target would support fulfilling objectives under other SDGs as well.

While countries are free to define their indicator framework, a reference indicator framework has been identified by the UN after rigorous negotiation process among statistical agencies of various countries. While the range of indicators that have been identified captures the spirit of the related target, the aspiration of the target as well as that of the concerned SDG goal can only be achieved by addressing the slated issues going beyond the scope of specific indicators in some cases. This is partly due to the fact that indicators are developed

keeping in mind data availability as well as the status of the methodology that goes into computation of indicators. However, abilities of statistical agencies to report relevant data are widely disparate. While many countries depending on the development context as well as maturity of the statistical systems have expanded the list of indicators beyond the scope of the UN indicators, several countries especially those with weaker statistical systems are likely to depend on the UN indicators as well as on reporting done by third parties primarily specialised UN agencies like FAO, WHO, ILO, UNESCO etc. The national level monitoring of the SDGs in India is developed by Ministry of Statistics and Programme Implementation (MoSPI). MoSPI has created 306 national indicators (now revised to 295 indicators) in line with the 169 SDG targets and the Global Indicators Framework to monitor progress and the amount of achievement of the targets and Goals. In addition to the 295 indicators, 62 priority indicators have been identified for measuring India's most essential developmental goals.

After distilling the scope of the indicators and careful interpretation of the targets, further value addition needs to be undertaken in terms of selecting key indicators that can be directly linked with STI interventions. It has to be understood that achievement of a specific SDG and fulfillment of a related target may be dependent on several factors including conducive legislative, legal and policy action; good governance; deployment of institutional resources; better planning and administrative management; inculcation of scientific bent of mind, enhanced use of scientific monitoring methods focused on outcome and impact; ushering social behavioural change; and mainstreaming outreach and participatory approaches. While ICT tools are increasingly ubiquitous that may help all of the above, the same may not be accessible to all implementing agencies across countries. This is certainly an area that needs to be considered for robust STI for SDGs roadmaps.

As explained above, indicators are linked with both quantitative and qualitative measures covering a substantial part of what each target seeks to achieve. Initially we select those indicators that highlight development/sustainability parameters, which throw up significant scientific challenges emerging out of the nature of the development gap and the complexity of the problem based on considerations of access, equity and inclusion as well as sustainability dimensions. In other words, there should be reasons to argue that

with use/availability of existing or potential STI solutions the indicator should achieve desired values at a much accelerated pace. It could also be the case that diffusion of already available STI solutions should be a big factor in achievement of the indicator as well as the target. In certain cases, it is obvious that given the enormity or the complexity of the challenge, existing STI solutions may be grossly inadequate and all countries may not be in a position to develop, acquire or access STI solutions.

## II. STI for SDGs Roadmaps for India-The Way Forward

### Build STI ecosystem with role for line ministries and associated institutions in the public and private sectors

- Towards formulating India's national 'STI for SDGs Roadmaps', there is an imperative to create a STI ecosystem in the country, comprising all the relevant stakeholders including government ministries/ departments, state government, academic and research institutions, public and private sector and civil society organizations. Implementation of STI for SDGs roadmaps in partnership with select state government can be initiated as pilots.
- Such an ecosystem would facilitate close coordination among the relevant stakeholders and would help the line ministries in formulating their respective plans to integrate the application of STI for achieving the related SDG goals and targets.
- In this initiative relevant public and private sector bodies, firms, start-ups, and social enterprises also act as development partners.
- The indigenous technology development should not only address various market or systemic failures in the supply of socially relevant technologies but also ensure their faster diffusion. This will, in turn, help to meet the considerations of access, equity and

inclusion (AEI) as well as sustainability. Such efforts should also supplement the national R&D and innovation programmes and help to augment domestic industrial capacities as envisaged under SDG 9.

- India's approach to addressing sustainability has been rooted in aspirations towards leveraging new knowledge and innovations, not only to match local needs but also to overcome resource constraints in many cases. This has traditionally been pursued under the broad policy paradigm of 'self-reliance'.
- Financing such initiatives and the underlying innovation projects is critical for achievement of the SDGs. STI for SDGs Roadmaps must be widely adopted with the active participation of multiple stakeholders, including the government, international agencies, development finance institutions, and the private sector.

### Create Indicative Technology Mapping Tool for SDGs based on SDG indicators.

- The Indicative Technology Mapping (ITM) should be useful to assess the current situation of SDG-related technologies in India and to strengthen the overall STI capability through synergistic and cross-sectoral collaborations. Furthermore, it can be used as

an input for national STI for SDGs roadmaps and should be helpful to reach out to line ministries, departments, and relevant agencies.

- The ITM takes into account the changing priorities for STI for SDGs and allows imagining an SDG-led innovation future and to guide STI policy interventions. The ITM open-up the need to monitor technology readiness levels across technologies and to critically examine the impact of specific policy instruments to monitor progress as part of the overall SDG-led STI development strategy.
- Likewise, in various existing and emerging technologies, the perceived technological “deficit” underlines the need to foster technological catch-up by enhancing R&D intensity and policy coordination. The technology identification exercise thus opens up several pathways to initiate indigenisation.
- A sharp sectoral focus in India’s progress towards achieving the SDGs in terms of regional asymmetries and gaps at National and State level is important. The indicator gap mapping and ranking framework put forward by the NITI Aayog based on selected targets and indicators has highlighted India’s progress towards the SDGs.
- At the next level, sector specific ITM can evolve into a comprehensive data driven platform where all resource flows from the public and private sectors can be mapped and matched with STI for SDGs outcomes (and impacts) which would streamline decision making.

## Promote technology adoption for SDGs at very large scale – Evolve policy tool for technology choices under Flagship schemes

- All key scientific ministries and line departments through the Flagship schemes have to play a major role in providing direction to India’s STI efforts and are therefore preeminent stakeholders in the process. Sub-national governments particularly, the state governments also form vital pillars for supporting formulation of India’s national STI for SDGs Roadmaps.
- Line ministries are pivotal in the identification, procurement and deployment of technologies in the flagship schemes. Significant learning and experience is being generated on ways and means to leverage technology under flagship schemes. Therefore line ministries need to augment internal capacities to come up with coherent strategies for appropriate technology choices towards speedy and optimal outcomes in the delivery of development schemes.
- The push towards monitoring and evaluation of flagship schemes at micro level and household level through use of GIS, IoT, ICT, Geo-Tagging and other modern technologies needs to be strengthened and extended to monitor the quality rather than quantity of the outcomes through flagship schemes.
- Regional asymmetries in adoption and deployment of technologies in Flagship schemes need to be examined to avoid exclusions among the targeted population. State governments as the implementing authority must be supported to overcome the S&T capacity gaps in respective states. Under the proposed State level pilots, Line Ministries should be encouraged to work with the States under the ‘STI for SDGs Roadmaps’ approach to optimize resource utilization and customize state/ local level STI interventions.



## Strengthening Technology Facilitation Mechanism (TFM) and partnership with developing countries

- The Global Pilot Programme on STI for SDGs Roadmaps is the first clear operational strategy to document, improve, and encourage STI for SDGs actions. This should lead to wider global partnerships on STI for SDGs roadmaps for strengthened technology facilitation as the world comes to terms with emerging challenges.
- India has been a leader in the negotiations that led to the launch of the TFM under the 2030 Agenda for Sustainable Development. India has time and again articulated that finance and technology would be the most critical pillars for implementing the Agenda 2030 across the SDGs. India's views have centred on concerns that the developing countries are at serious disadvantage when it comes to the availability of environmentally sustainable technologies and the current institutional mechanisms are inadequate to meet the full scale requirements or ensure timely delivery.
- Apart from providing intellectual leadership India can initiate projects and activities in partner countries as part of its South-South and Triangular Cooperation efforts to demonstrate how technology acquisition, development and transfer can

be effective means to address sustainability challenges in many fields. Such technological efforts would consolidate India's leadership and adequately support the UN-TFM (refer Box 3).

- Finally, the pilot countries should make every effort to showcase their efforts under STI for SDGs Roadmaps and widen cooperation and partnerships. UN-IATT can facilitate such platforms by sharing their knowledge, resources, and repositories. This could help to avoid duplication of ideas and efforts, and it could also assist UN agencies in recognising cross-agency capabilities and how they can be used to boost current activities. This approach is captured in the UN guidebook for preparing STI for SDGs Roadmaps through three action areas: developing country STI capability, increasing international STI flows, and brokering STI coalitions.

- While the TFM is meant to be a global initiative, it is critical to comprehend the reasoning for focusing TFM efforts at the national level. Countries and their publicly funded research and development agencies, as well as international development finance institutions, should be aware that development-oriented and sustainable technologies may continue to be owned under private intellectual property unless alternative innovation models are encouraged.

### **Box 3: Technological Solutions that India can share by way of South South Cooperation**

SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- Public Distribution System using ICT Technologies (including One Nation One Ration Card)
- POSHAN Tracker app for monitoring of POSHAN Abhiyaan
- Soil Health Card using Soil testing technologies
- High-yield hybrid seeds variety and Bio-fortification
- Better Animal Vaccines and Nutritious Feed and Fodder; RFID and Micro-chips based Ear Tags for Livestock Tracking

SDG-3: Ensure healthy lives and promote well-being for all at all ages

- E-VIN( vaccine intelligence network)
- Covid Vaccines and CoWIN Platform for vaccine distribution
- Digilocker, Digital Health Registry under National Digital Health Mission
- Beneficiary Identification System (BIS) for PMJAY
- Medical devices like Ventilators for pumps oxygen-rich air into your lungs and Handheld Ultrasound Device for immediate ultrasonography during emergencies

SDG-6: Ensure access to water and sanitation for all

- Ozonation, Ultraviolet technology, Reverse Osmosis (RO), TERAFIL(Terracotta) water filter
- IoT-based real-time water quality monitoring systems in pipelines
- AI-enabled water-use monitoring system (to reduce pollutants in the water which in turn decreases water contamination and scarcity of clean water)
- Supervisory control and data acquisition (SCADA) monitoring system
- Extensive mapping exercises like aquifer mapping, GIS-mapping of surface water using remote sensing and HGM maps.

SDG 7: Ensure access to affordable, reliable, sustainable, and modern energy for all

- Improved biomass cooking stoves, biogas technologies
- Smart-grid systems
- Indigenous solar systems for industrial, household, and agriculture uses (solar pumps)
- Solar water heating systems
- Standalone Solar Powered Agriculture pumps and decentralized ground mounted grid connected renewable power plants

*Source:* Compiled by RIS.

## Annexure 1: Implementing STI for SDGs Roadmaps- Experiences of Pilot countries

India	Ghana	Kenya	Serbia	Ethiopia
<p>Shaping of STI pathways informed of India's developmental needs</p> <p>Leveraging digital technology solutions, digital public goods and potential low-cost tech applications across SDGs</p> <p>The SDGs should create the necessary external push for integrated and inclusive innovations to drive STI for SDGs efforts</p>	<p>Leveraging STI for addressing complex societal challenges</p> <p>Developing a framework for common guidance principles and possible methodologies</p>	<p>Implementation of STI policy and support for delivery of President's Big Four Agenda, which focuses on agriculture, manufacturing, health, and housing</p> <p>Promoting use of IPR and enhancing technology transfer</p>	<p>Foster socio-economic development and transformation based on 6 knowledge-intensive priority sectors</p> <p>Developing the start-up ecosystem for entrepreneurship and economic transformation</p>	<p>Prioritizing STI for agriculture development and technology transfer.</p> <p>Strengthening the infrastructure-science cities based on smart cities and human resource development.</p>
<p>Focus SDGs - 2,3,6 and 7</p> <p>Build STI Ecosystem beyond science departments</p> <p>Indicative Technology Mapping Tool based on SDG indicators and technology cohorts</p> <p>Foster new innovation ecosystem with the private sector for Flagship Schemes</p>	<p>Focus SDGs - 1, 2, 3, 4, 6, 8 and 9</p> <p>Develop new infrastructure and create capacities in new technologies</p> <p>Establishment of STI Indicators for impact and outcome measurement</p>	<p>Focus SDGs - 1,2 and 8</p> <p>STI Public Expenditure Review</p> <p>Promoting R&amp;D and technology adoption</p> <p>Scaling up access to Financial Services for farmers through Digital Technologies</p>	<p>Focus SDGs - 2, 7, 8 and 9</p> <p>Documentation of action plan related to the smart specialization strategy</p> <p>Catapult Accelerator for boosting Serbian startups with funding, mentoring, peer-learning and exposure to investors.</p>	<p>Focus SDGs - 1, 2, 3, 8 and 10</p> <p>Technology roadmaps at the national level- 12 priority areas- coffee processing, textile, leather, cement among others.</p>

Source: Compiled by RIS.

## Annexure 2 : Role of International Organization in TFM/Global Pilot Programme on STI for SDGs Roadmaps

UNDESA	World Bank	EC-JRC	OECD	Japan
<ul style="list-style-type: none"> <li>Operationalization of the online technology platform, 2020.</li> <li>Joint guidebook with UNITAR on STI for SDGs roadmaps 2021</li> <li>The rolling out of the Partnership in Action group and the launch of the Joint UN Fundraising Initiative for the STI Forum (2022)</li> <li>The HLPF and SDG summit will be held in 2023 along with Mid-term review by DESA on SDGs.</li> </ul>	<ul style="list-style-type: none"> <li>Provided Financial support to develop the UN Guidebook on STI for SDGs Roadmaps</li> <li>Strengthening technological adoption, appreciation and absorption for public service delivery.</li> <li>Developed regional ecosystems, within country and among countries</li> <li>Improved the impact of STI expenditures on economic development through world bank PERs.</li> </ul>	<ul style="list-style-type: none"> <li>Joint Research Centre coordinated with UN IATT for Technology Facilitation Mechanism</li> <li>JRC developed pilot cases and methodological background for Smart Specialization Strategies approach for pilot methodology linking STI for SDGs.</li> <li>Developed vision for sustainable socioeconomic development of territories and focussed on sub-Saharan Africa - Analytical assessment</li> <li>Capacity reinforcement followed by roadmaps for development of STI for SDGs.</li> </ul>	<ul style="list-style-type: none"> <li>International collaboration and innovative financing of STI through blended financing.</li> <li>Various financial instruments for the funding of various STI based Initiatives.</li> <li>Developed quantitative STI indicators plus in-depth analysis of specific sectors</li> </ul>	<ul style="list-style-type: none"> <li>Collaboration and cooperation in formulating STI for SDGs Roadmaps</li> <li>Three tracks of collaborative international initiatives- with WFP- innovation accelerator program, with UNDP accelerator labs to support UNDP projects in different countries and with WB (Global pilot programme on STI for SDGs roadmaps)</li> <li>Identification of issues from accelerator labs (eg: marine plastic waste, market access by small scale farmers, urban planning and post-harvest loss).</li> </ul>

Source: Compiled by RIS.

**About RIS:** Research and Information System for Developing Countries (RIS) is a New Delhi-based autonomous policy research institute that specialises in issues related to international economic development, trade, investment and technology. RIS is envisioned as a forum for fostering effective policy dialogue and capacity-building among developing countries on global and regional economic issues.

The focus of the work programme of RIS is to promote South-South Cooperation and collaborate with developing countries in multilateral negotiations in various forums. RIS is engaged across inter-governmental processes of several regional economic cooperation initiatives. Through its intensive network of think tanks, RIS seeks to strengthen policy coherence on international economic issues and the development partnership canvas.

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