On-line Training on Science, Technology and Innovation (STI) Policy and Policy Instruments for SDGs for the SADC Region

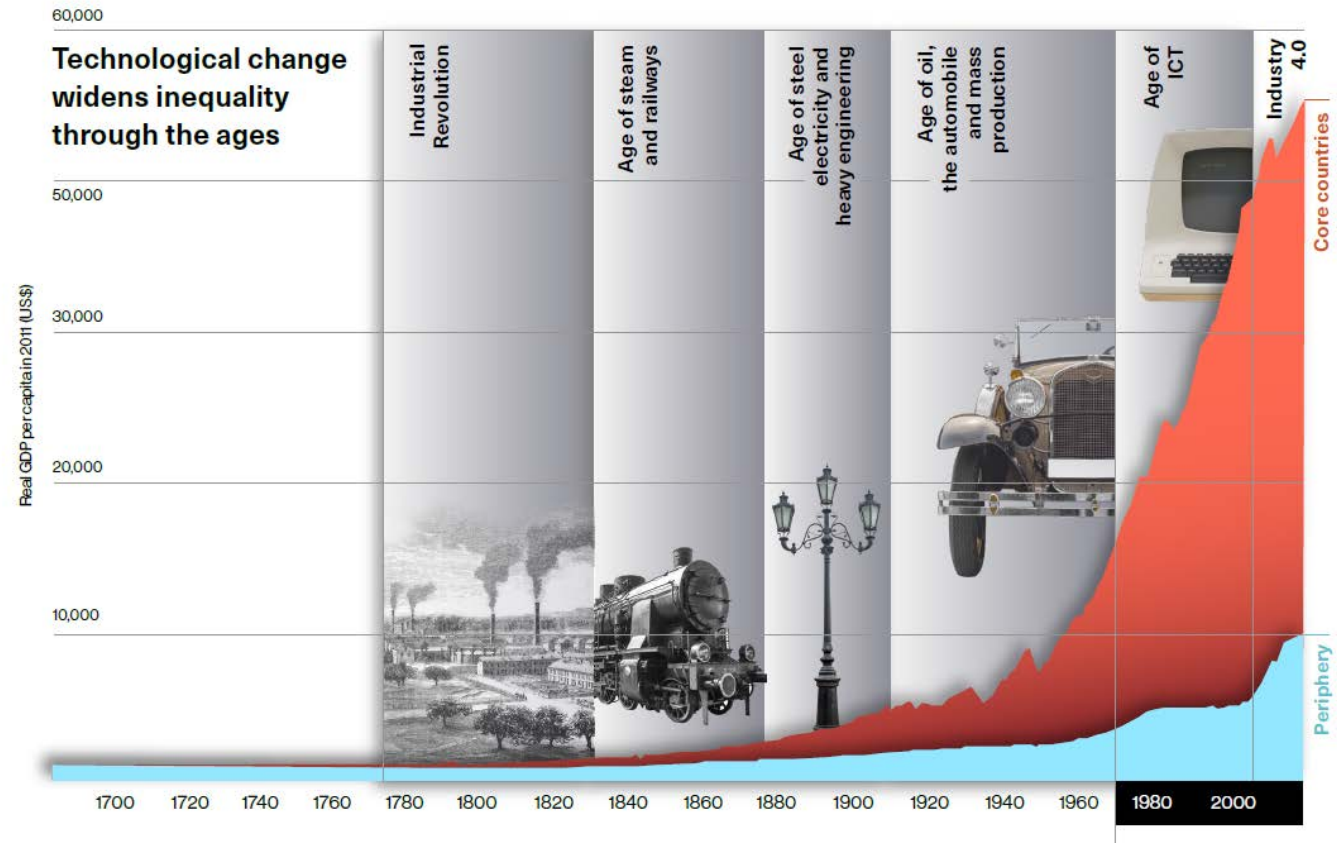**Session 1 Current approaches to STI policy making in the context of SDGs**
-Introduction of approaches to STI policy for SDGs

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6 December 2021

Techno-productives Paradigms

Technological change widens inequality through the ages

Industrial Revolution · Age of steam and railways · Age of steel electricity and heavy engineering · Age of oil, the automobile and mass production · Age of ICT · Industry 4.0

Real GDP per capita in 2011 (US$)

60,000 · 50,000 · 30,000 · 20,000 · 10,000

1700 · 1720 · 1740 · 1760 · 1780 · 1800 · 1820 · 1840 · 1860 · 1880 · 1900 · 1920 · 1940 · 1960 · 1980 · 2000

Core countries · Periphery

Fuente: Technology and Innovation Report, UNCTAD 2021

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Global Challenges

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The Sustainable Development Goals

PEOPLE

| 1 FIN DE LA POBREZA | 2 HAMBRE CERO | 3 SALUD Y BIENESTAR | 4 EDUCACIÓN DE CALIDAD | 5 IGUALDAD DE GÉNERO |

PLANET

| 6 AGUA LIMPIA Y SANEAMIENTO | 12 CONSUMO Y PRODUCCIÓN SOSTENIBLES | 13 LUCHA CONTRA EL CAMBIO CLIMÁTICO | 14 FLORA Y FAUNA ACUÁTICAS | 15 FLORA Y FAUNA TERRESTRES |

PROSPERITY

| 7 ENERGÍA ASEQUIBLE Y NO CONTAMINANTE | 8 EMPLEO DIGNO Y CRECIMIENTO ECONÓMICO | 9 INNOVACIÓN E INFRAESTRUCTURAS | 10 REDUCCIÓN DE LA DESIGUALDAD | 11 CIUDADES Y COMUNIDADES SOSTENIBLES |

PEACE

| 16 PAZ, JUSTICIA E INSTITUCIONES SÓLIDAS |

PARTNERSHIP

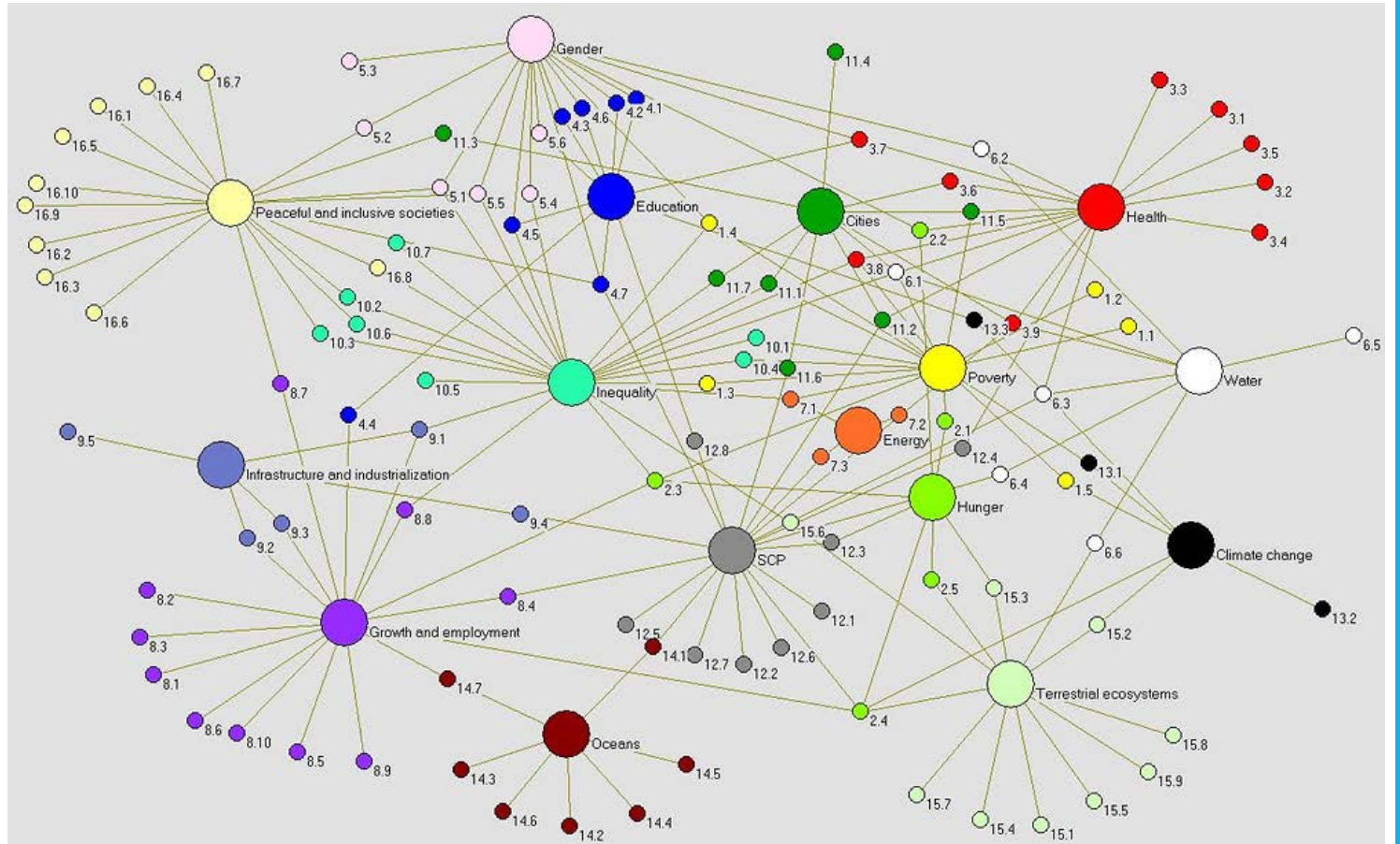| 17 ALIANZAS PARA LOGRAR LOS OBJETIVOS |

- 17 global goals to eradicate poverty, protect the planet and ensure prosperity for all by 2030

- Accepted by all countries and apply to all

- Everyone has to do their part: governments, the private sector, civil society

- Not legally binding, but governments expected to establish national frameworks for their achievement, monitor and review progress

Interrelationships between Sustainable Development Goals

Fuente: David LeBlanc (2015). Towards integration at last? The sustainable development goals as a network of targets. DESA Working Paper No. 141.
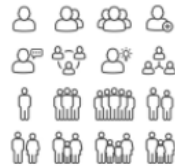
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STI is sysmetic

STI play a key role in achieving targets across all SDGs

Time dimension : Where does a country want to be in 5, 10 ..years?

Building a Robust STI System requires:

National (Regional) STI Systems

Variety of institutions and actors

Linkages and interactions

Legal Framework

Exchanges and flows

Varieties of Policies
- **STI**
- **Other policies**

Building STI Policy

Science   **Technology**   **Innovation**

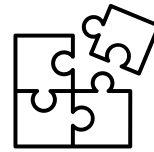| Target:	Scientific Community	Dissemination and adoption of a technology	Behavior of agents
Type of objectives:	Quantitative: number of PhDs, scientific publications, patents, etc.	Quantitative: number of households with internet; bandwidth, etc.	Qualitative: Favorable environment; agents' behaviors; etc.

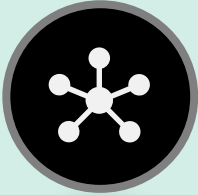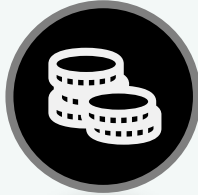Challenge: Coordinating the system and its objectives

Intervention theory

Innovation policy approaches
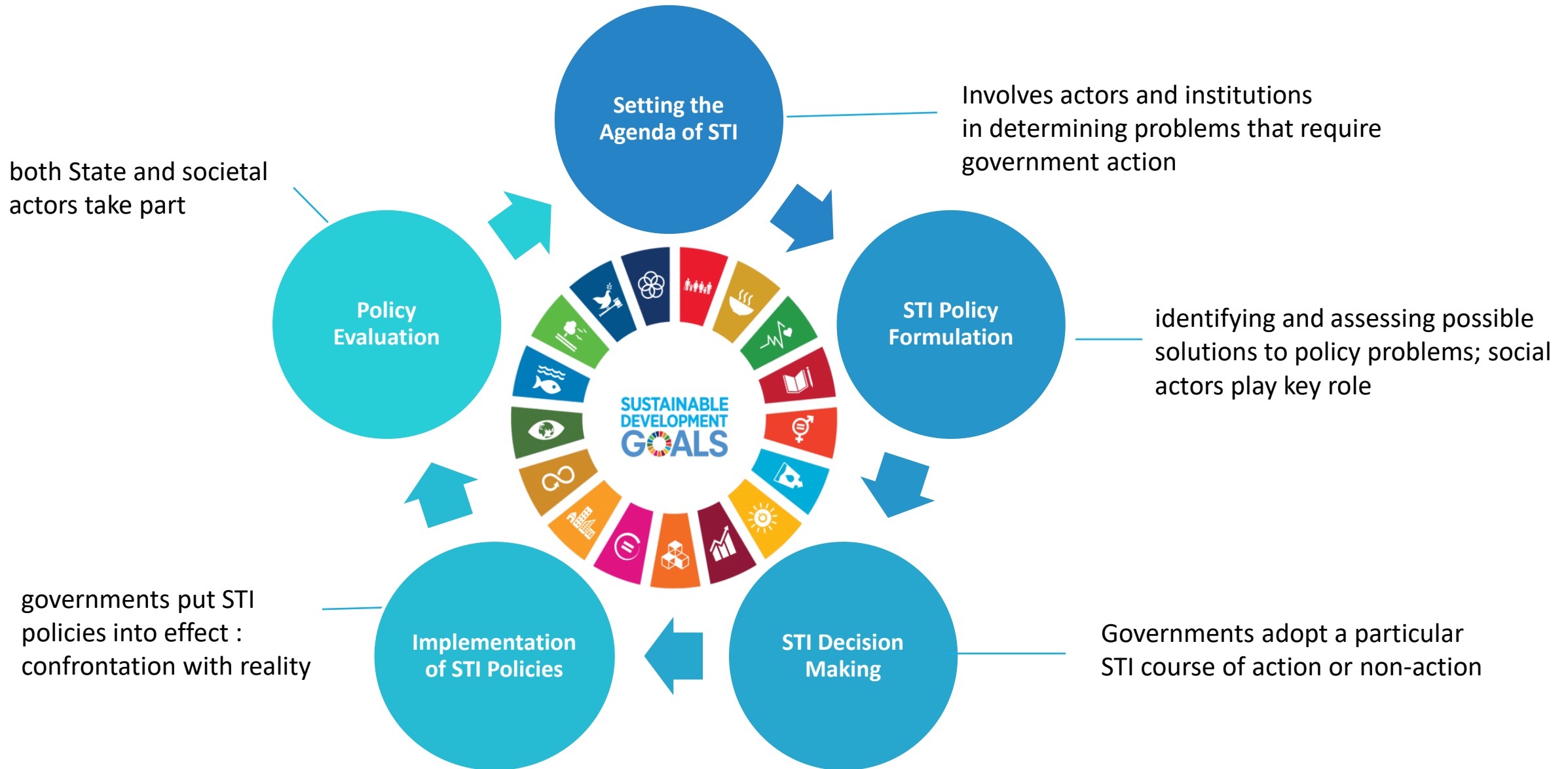- Traditional approach: failures and systems.

New policy approaches
- Mission-oriented STI policies (Mazzucato)
- Transformative STI policies (Schot)
- STI policies for inclusion (Sutz)
- Holistic policy (Edquist)

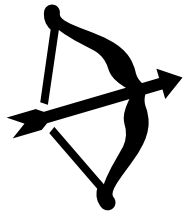|	**Missions**	**Transformation**	**Inclusion**	**Holistic**
ADVANTAGES	**Focus and portfolio**	**Deep learning, change**	**Bottom-up, democratization**	**Difference between Strategic Policy and Innov Policy**
LIMITATIONS	**What about the structure?**	**What about urgent problems?**	**What about the Frontier of Knowledge?**	**Systemic approach not very operative**

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STI Policy Cycle: participatory processes

Setting the Agenda of STI

Involves actors and institutions in determining problems that require government action

both State and societal actors take part

Policy Evaluation

STI Policy Formulation

identifying and assessing possible solutions to policy problems; social actors play key role

governments put STI policies into effect : confrontation with reality

Implementation of STI Policies

STI Decision Making

Governments adopt a particular STI course of action or non-action

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What a STI Policy might want to address？

Broad goals: Developing research, innovation, science education...

National development plans

Monitoring and Evaluation

Gender and youth

Key sectorial priorities

Legal framework

Governance framework

Capacity building

Organizational structure (Institutions, Private, Public, Universities, non-Profit)
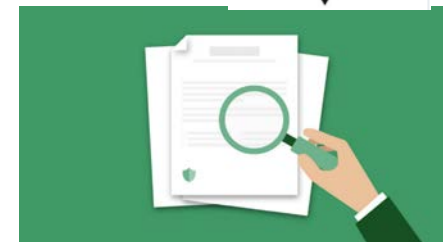
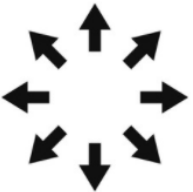**Policy instruments**

funding mechanisms

Regional and international co-operation

STI Policy

Other strategic STI policy issues in context of SDGs :

- ❖ **STI from a national to an international perspective, cooperation**
- ❖ **Fostering multi-stakeholder partnerships for investments in STI for SDGs**
- ❖ **Transition to Open Science: Open Access to Data and Knowledge, Open Infrastructures, Citizen Science.. more transparent and accountable to society**
- ❖ **Science Diplomacy**
- ❖ **Giving directionality in STI policies to focus of STI related targets of the SDGs**
- ❖ **Inclusive STI policies, gender, indigenous knowledge**
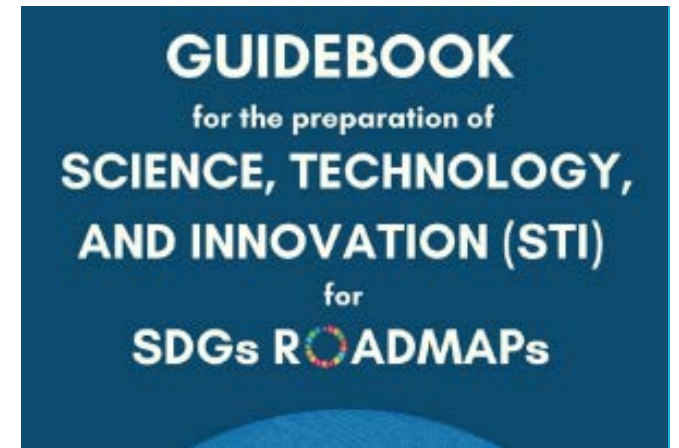- ❖ **Monitor and measure contribution of STI to SDGs implementation with improved STI indicators**

STI Policy

The UN-Inter-agency Task Team (IATT) Guidebook: Example of Framework

1. Define objectives and scope

2. Assess current situation

3. Develop vision, goals and targets

4. Assess alternative pathways

5. Develop detailed STI for SDG roadmap

6. Monitor, evaluate, and update plan

Key Inputs:
-Stakeholder consultations
-Expertise
-Data & evidence base

Framework for developing STI for SDGs roadmaps as a series of six sequential steps

GUIDEBOOK for the preparation of SCIENCE, TECHNOLOGY, AND INNOVATION (STI) for SDGs ROADMAPs

Questions for thoughts

How to meet goals of environmental sustainability and at the same time economic growth?

How to reframe STI policy from a unique economic rationale to SDGs perspective?

How to align STI governance structures to the global SDGs framework? (policy advice, steering and funding, co-ordination, and evaluation and monitoring…)

What priority areas for action to embed SDGs within STI policy frameworks?

How to define directionality and concrete mission goals responding to environmental and societal needs within STI policies?

What frameworks for STI are needed for inclusion in decision-making?

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