



STI4SDGs ROADMAP

Strengthening Science, Technology and Innovation Ecosystem for Sustainable Development in Ghana

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OUTLINE

01

Introduction of STI4SDGs

02

Situational Analysis

03

SWOT Analysis of STI Ecosystem

04

Mainstreaming STI and STI4SDGs Roadmap

05

Way forward on the STI4SDGs Roadmap

INTRODUCTION

KEY POINT 02

Member States committed to adopt ST&I as integral element of national Sustainable Development (2030 Agenda).

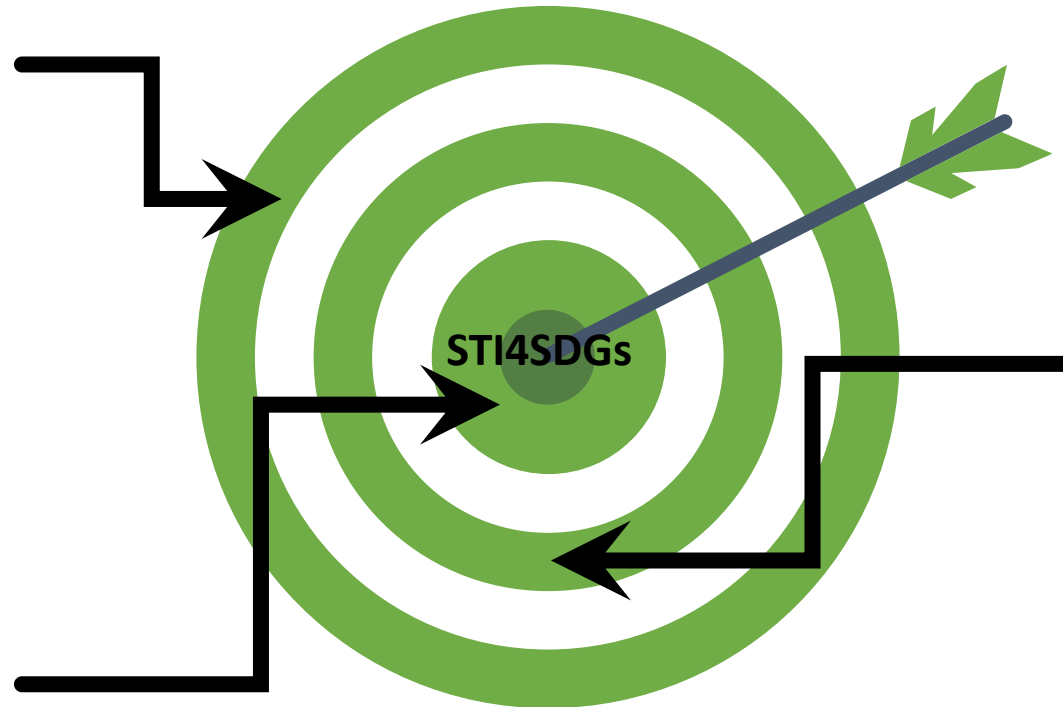
KEY POINT 03

Urgent need for mainstreaming ST&I in development planning

UNESCO has taken the leadership role with MESTI and CSIR-STEPRI

KEY POINT 01

Within the framework of the Technology Facilitation Mechanism (TFM), the UN-Interagency Task Team, launched the Global Pilot Programme on STI for SDGs roadmaps in July 2019 in Ghana, Ethiopia, India, Kenya and Serbia



STI4SDGS ROADMAP DEVELOPMENT PROCESS

MILESTONE 01

STI4SDGs Roadmap Preparation
Launched & Technical Task Team
Constituted (MESTI, **SDGs Unit at Office
of the President**, NDPC, MOF, AGI, MOE,
MOTI, MOFA, MOH, MSWR)

Technical Support From UNESCO
collaborating with MESTI and CSIR-
STEPRI

2019

START

MILESTONE 03

Strengthening STI Systems for
Sustainable Development in Africa
Project (SIDA)

Current vehicle for implementing
some aspects of the STI4SDGs
Roadmap

2021

2020

2022

MILESTONE 02

Resource Person Identified
Situational Analysis Report & Policy
Briefs
STI4SDGs Roadmap draft for Validation
by National Technical Task Team

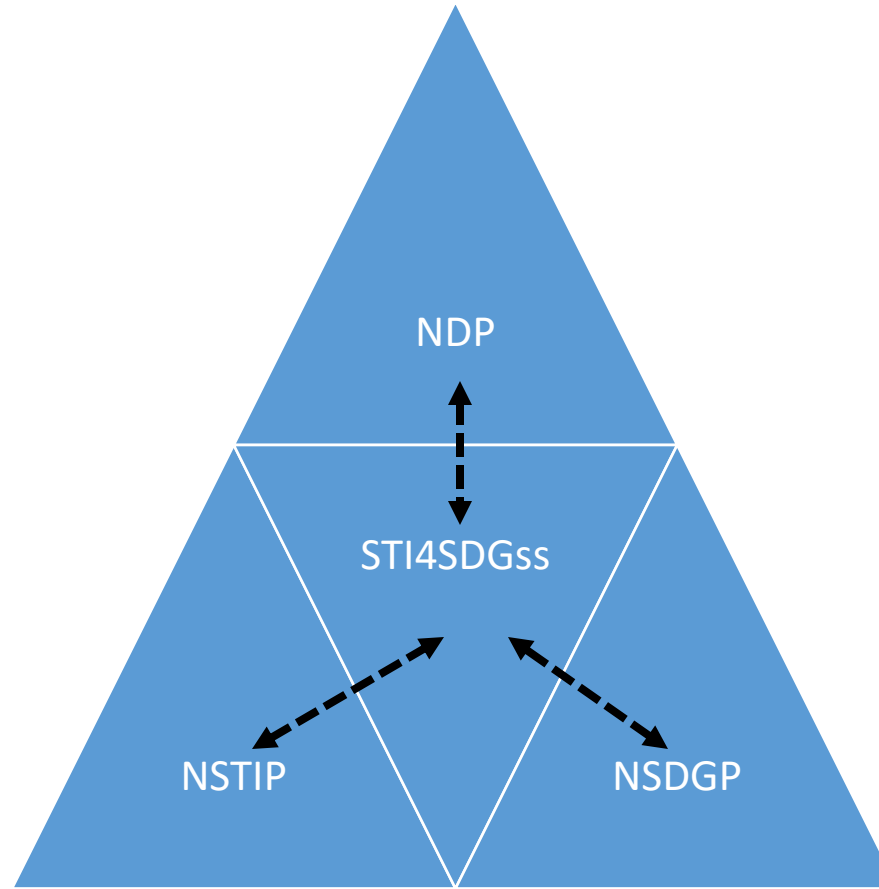
Finalization of STI4SDGs Roadmap

MILESTONE 04

Partnerships for Action
Implementation of STI4SDGs
Roadmap

ESSENTIAL DOCUMENTS

- National Development Plans
- National Science, Technology, and Innovation (STI) Policy
- National SDG Framework – National Voluntary Report



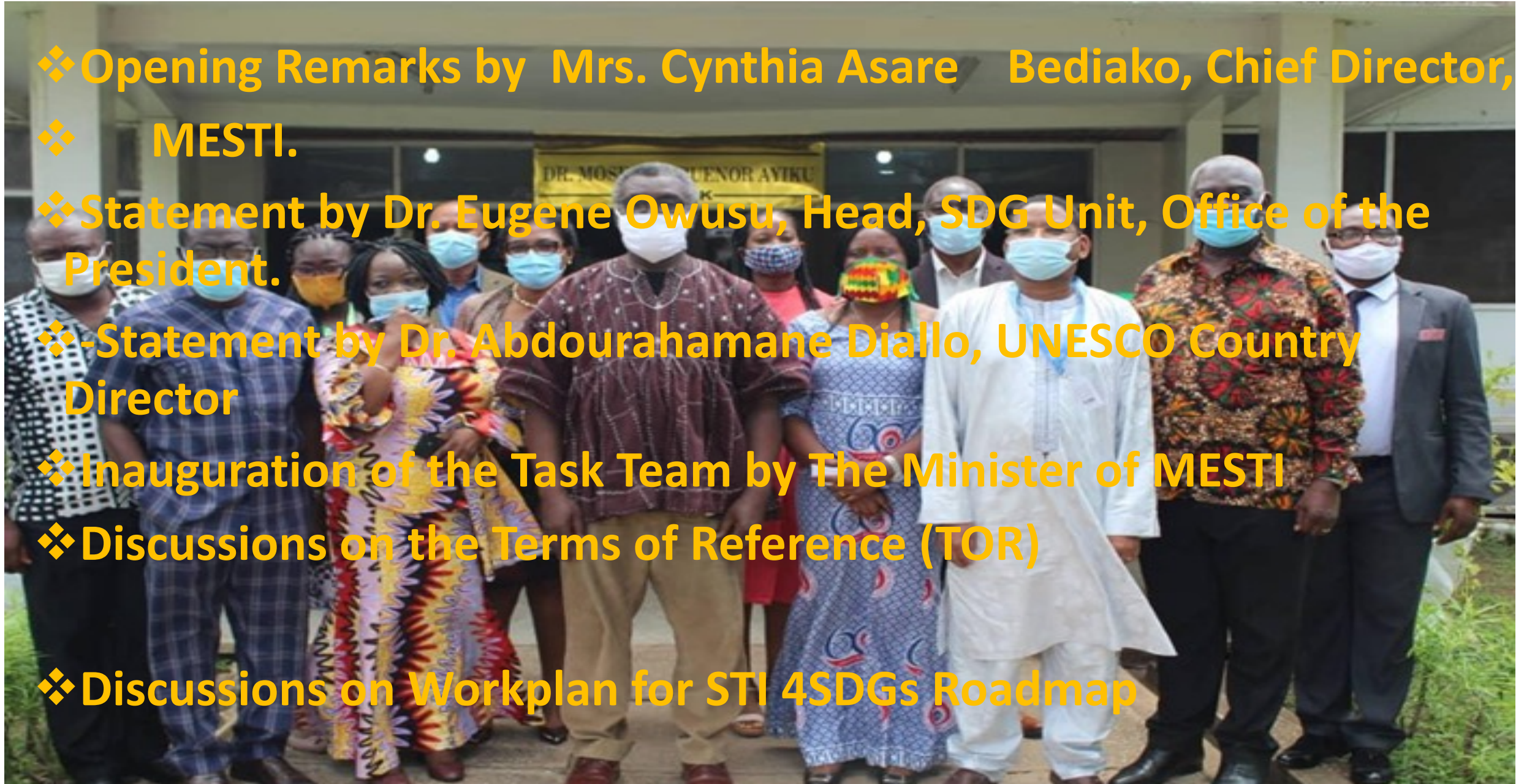
Alignment to Other Policies and Development Plans

- Science, Technology and Innovation Strategy for Africa (STISA2024),
- The 2030 Agenda for Sustainable Development (Agenda 2030),
- ECOWAS Policy on S&T,
- Ghana Shared Growth and Development Agenda (GSGDA II), 2014-2017
- Ghana's 7-year Coordinated Programme of Economic and Social Development Policies (2017-2024)
- Ghana Beyond Aid document
- Ghana COVID-19 Alleviation and Revitalization of Enterprises Support (CARES)
- Ghana @ 100







Inauguration of Technical Task Team and 1st Meeting

- ❖ Opening Remarks by Mrs. Cynthia Asare Bediako, Chief Director, MESTI.
- ❖ Statement by Dr. Eugene Owusu, Head, SDG Unit, Office of the President.
- ❖ Statement by Dr. Abdourahamane Diallo, UNESCO Country Director
- ❖ Inauguration of the Task Team by The Minister of MESTI
- ❖ Discussions on the Terms of Reference (TOR)
- ❖ Discussions on Workplan for STI 4SDGs Roadmap



STI4SDGs Roadmap – Ghana

SDGs	STI Activities	Expected Outputs
 <p>2 ZERO HUNGER</p>	<p>Promote: biotechnology for improved breeding Climate Smart Agriculture Quality Seed Production Value addition Technologies Internet of Things for e-marketing</p>	<p>Promote Smart & Sustainable food production systems Improved post-harvest management Reduced nutrition disorders Increased investment in STI for agriculture</p>
 <p>3 GOOD HEALTH AND WELL-BEING</p>	<p>Promote e-health services delivery Strengthen ICT infrastructure Application of AI, Robotics and Drones R&D in bio-medical engineering and instrumentation</p>	<p>Improved access to quality healthcare delivery Improved emergency preparedness and management of epidemics and pandemics Healthy dietary practices and lifestyles</p>
 <p>4 QUALITY EDUCATION</p>	<p>ICT Infrastructure to promote virtual learning Internet-based TVET teaching and learning Entrepreneurial and Internship prog. with Private Sector Pilot the use of locally produced games to stimulate children's curiosity and creativity</p>	<p>STEM Based Human Resources Increased Entrepreneurial mind-sets Education 4.0 integrating STI STI-based prog for pre-primary boys and girls</p>
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p>Strengthen Innovation hubs with focus on the youth ICT Infrastructure and bridging the gap between Research -Industry</p>	<p>ICT platforms which supports access to investment opportunities</p>

SWOT ANALYSIS

WEAKNESS



Weak linkages between various agencies and organizations in STI.

Weak linkage between industry and the R&D system

Low level of Advocacy on ST&I at all levels

THREAT



Inadequate budget and resource allocation to STI

Lack of data on technological opportunities

Influx of foreign technologies and lack of local content

Low science and technology culture among the populace

STRENGTH



Availability of STI Policy and National Entrepreneurial and Innovation Plan

Ghanaian scientists and technologists to link up with international research centres and world class research programmes

Available research findings that can be transformed into commercial products

OPPORTUNITY

The Continental Free Trade Agreement (CFTA), Digitization Agenda

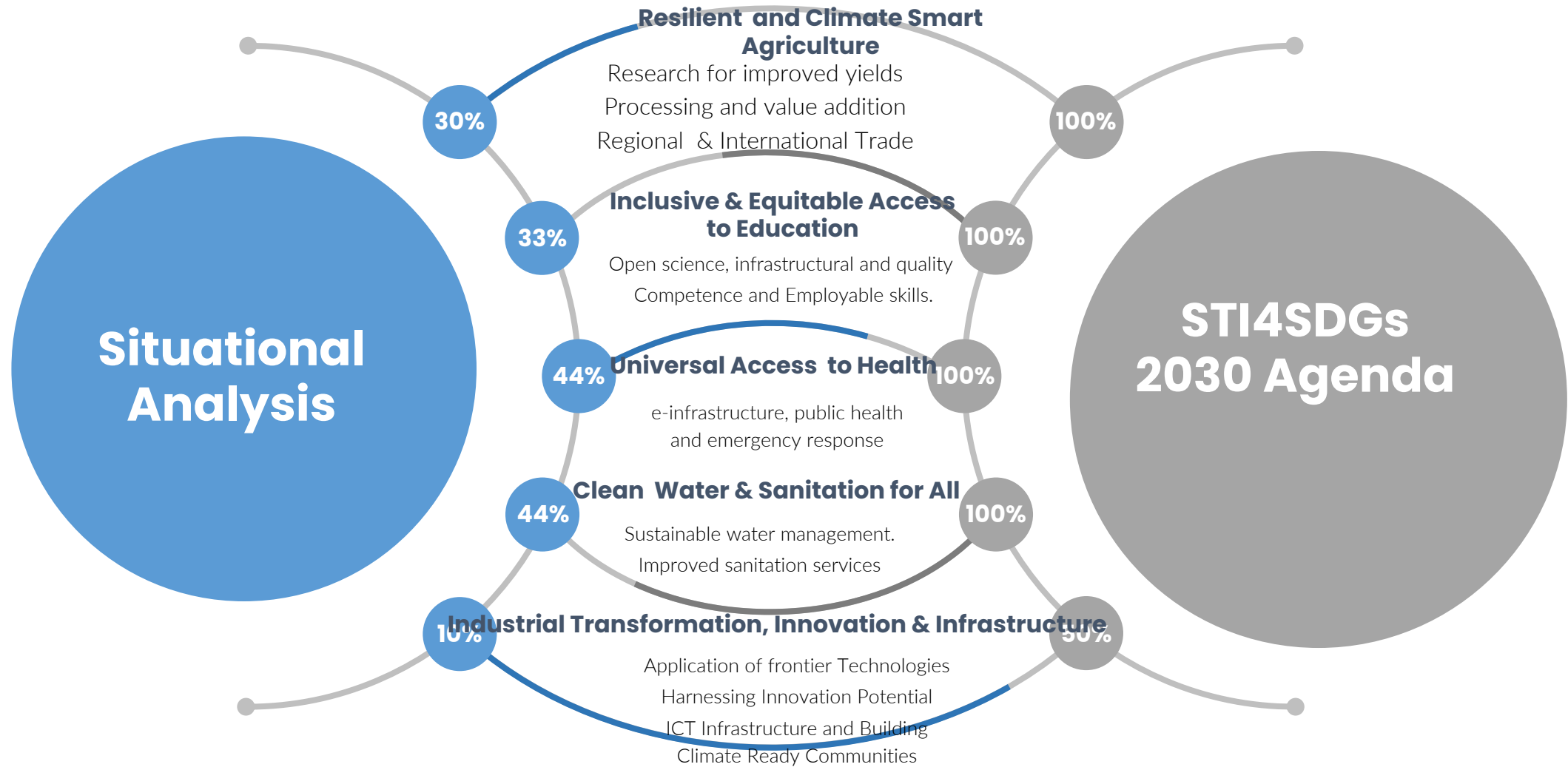
Industrialization Agenda

Private sector involvement in R&D

GIRC and Linkages with Technology Transfer Units in Research and Academia



PRORITIZED SDGs FOR STI4SDGs ROADMAP



STI capabilities to meet the SDGs and STI Gap Analysis

Indicators

- STI Framework and governance
- infrastructure for STI
- Human Capital
- Innovation processes and outputs,
- Knowledge exchanges & Transfer

Sectors

- Agriculture
- Industry
- Health
- Education
- Sanitation

Issues

- Developmental Challenges
- Public and Private sector interventions
- Enabling Environment
- Innovations and the role of the youth
- STI gaps

Agriculture

Developmental Issue	Situational Analysis/Factors	STI for Food systems
Low Productivity (Crops)	Low adoption of improved technologies Climate Change Impact Low extension - to- farmer Ratio High Cost of Inputs Inadequate irrigation and mechanization infrastructure	Productivity improvement technologies – green house production systems, promoting climate smart agricultural technologies, biotechnology for improved breeding systems E-Agriculture and Innovation Platform Improving Research and Extension System (RELC) Effective data management system for the Fertilizer and Seed Subsidy processes
High Post harvest losses Value addition Poor packaging	At least 30% of farm produce are lost due to poor transportation networks and storage facilities for agro produce (MoFA 2018) Low adoption of processing technologies Low processing and value addition Inadequate storage infrastructure	Cottage processing industries Packaging convenient foods for special delivery services and taking advantage of new consumer lifestyle Developing consumer taste for enriched traditional foods through value addition and improved packaging Improved technologies
Marketing challenges	Inadequate market infrastructure Inefficient price information systems	Food processing technologies to reduce post-harvest losses Increasing supply chain efficiency through the use of ICT Internet of Things (IOT) Blockchain for enhanced marketing information, product tracking, Online marketplaces linking consumers directly to farmers and Developing innovative delivery services

DEVELOPMENTAL CHALLENGES BY SECTOR

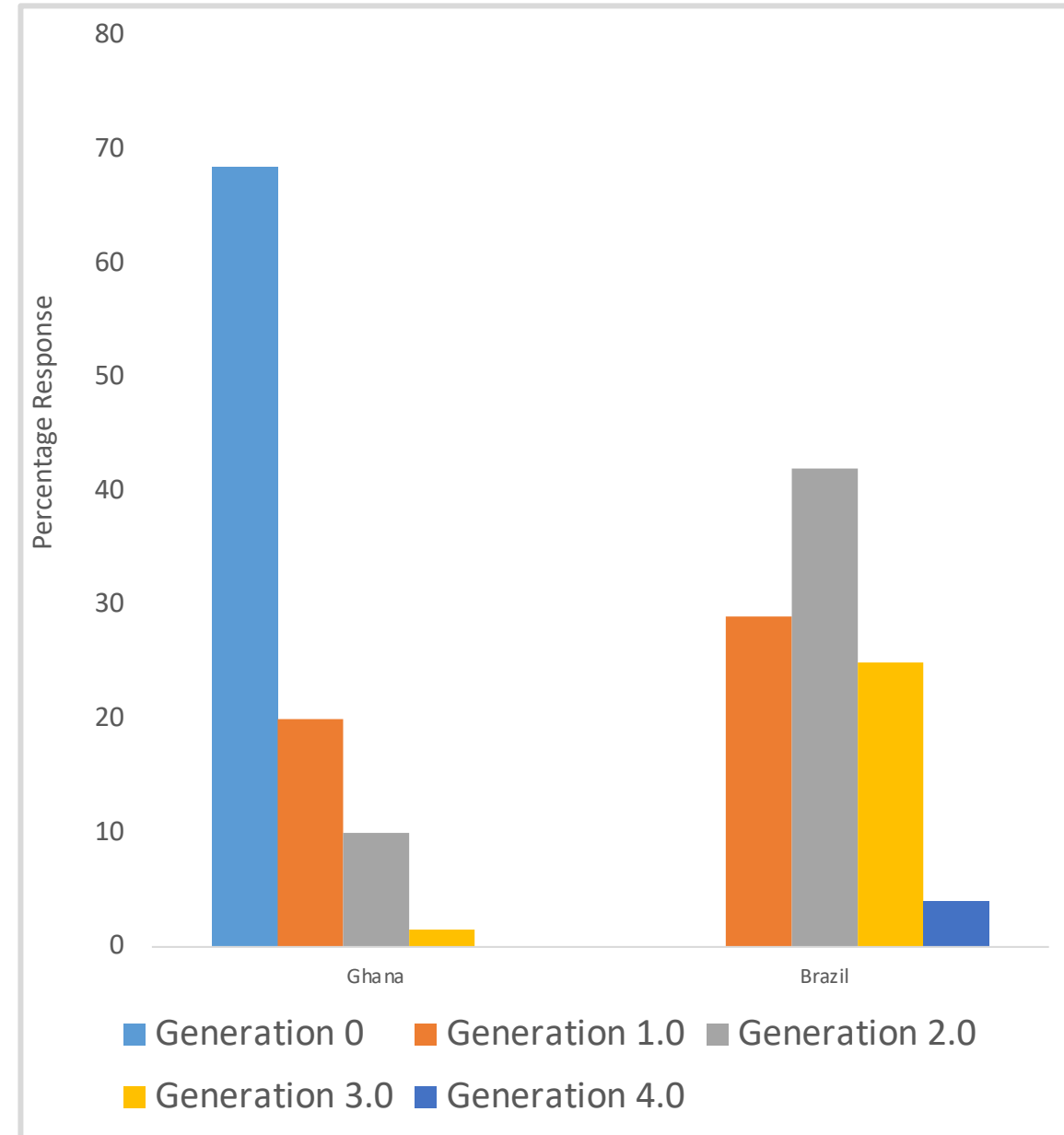
Sector	Challenges that STI can address
Health	<p>Inadequate health facilities in terms of infrastructural and equipment including ICT infrastructure and AI-powered healthcare services;</p> <p>Need for re-tooling of existing facilities;</p> <p>Need for construction and siting of additional purpose-built facilities, promote the availability and use of high-quality assistive devices and technologies;</p> <p>Inadequate human resource particularly medical personnel – Doctor patient ratio of one doctor to 8000 patients;</p> <p>Adoption of digital technologies for pandemic planning, surveillance, testing, contact tracing, quarantine, and health care; and</p> <p>Institutionalisation of Comprehensive Health Technology Assessments (HTA) to inform the selection and procurement of all medical technologies required</p>
Education	<p>Inadequate research capacity and inequitable assets;</p> <p>Weak relationship between academia/research and Policy makers;</p> <p>Inadequate resources to transform the economy into a knowledge-based one;</p> <p>High demand for tertiary education creating huge supply gap situation;</p> <p>Inadequate facilities and aging faculties;</p> <p>Imbalance between Sciences and Humanities;</p> <p>Unwillingness of the private sector to offer training in technical skills to fresh graduates;</p> <p>Differences in the meaning of Excellence for academics and the public; and</p> <p>Need for a cultural change with respect to the teaching model, re-training of trainers, effective communication and constant interaction with industry</p>
Water and Sanitation	<p>Water quality monitoring and management systems;</p> <p>Inadequate facilities for water quality testing;</p> <p>Inadequate ICT infrastructure for better targeting and inefficiencies in cost recovery approaches;</p> <p>Capacity gaps in management of water and sanitation service delivery;</p> <p>Awareness creation and behavioural initiatives on sanitation and good hygiene practices;</p> <p>Ineffective Planning of Cities and challenges with monitoring of environmental sanitation services; and</p> <p>Plastic menace and issues with sustainable plastics management</p>

Industry, Innovation and Employment Creation

Growth rate in the manufacturing subsector has been dwindling from 9.5 (2017) to 4.1 (2018)

Challenges are:

- High cost of capital
- Limited access to medium and long-term financing
- High cost of electricity
- Unreliable power supply
- Limited access to land for industrial activity
- Weak logistics
- Weak infrastructure support for industrial development
- Cyber security and internet fraud
- Influx of foreign competitive products and downward pressure on prices of locally produced goods and services
- Bureaucratic delays in certification by regulators

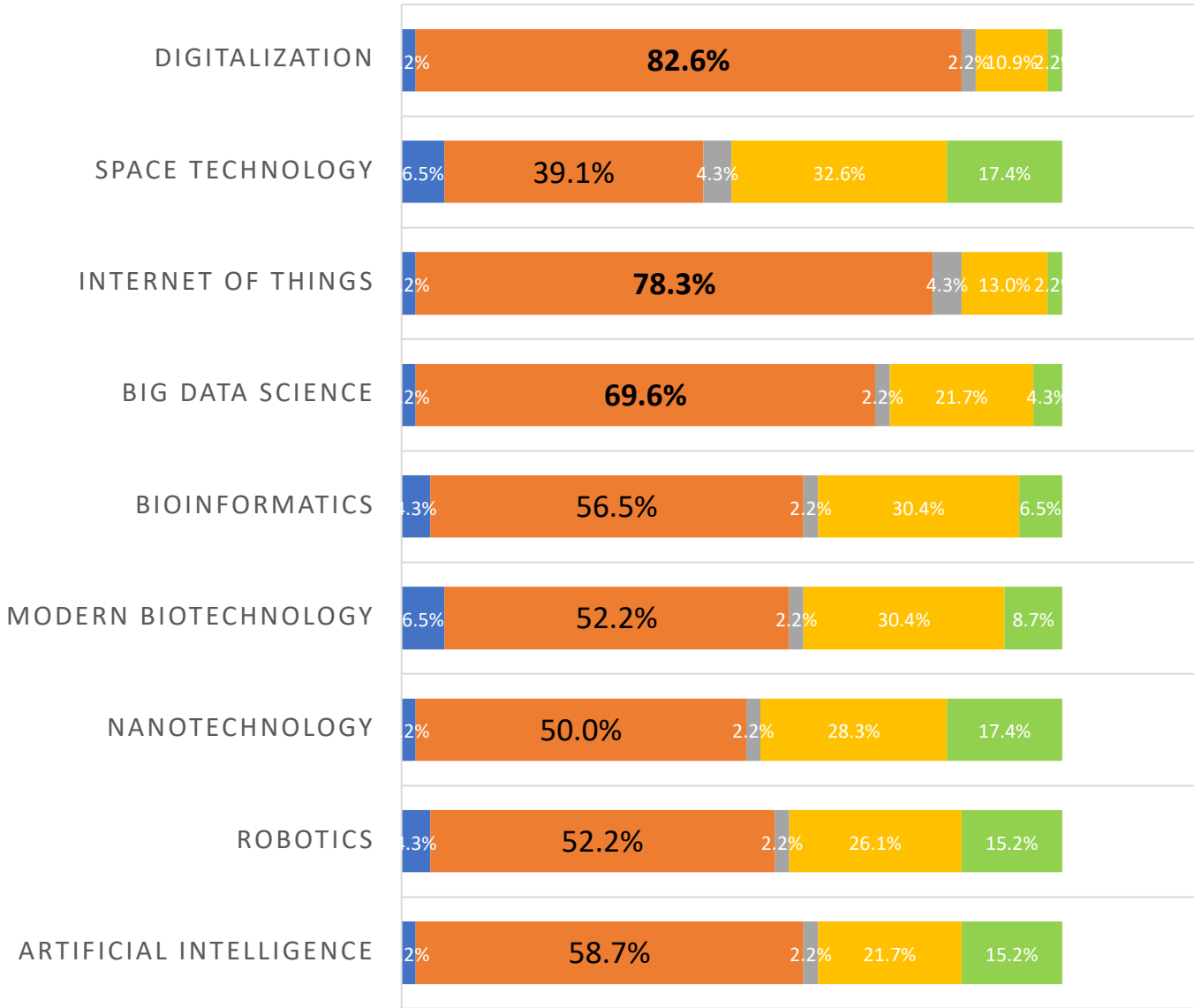


For Ghana to catch up with the 4th Industrial Revolution, Advance Digital Production (ADP) Technologies are needed:

- Renewable energy technologies to address energy challenges
- Software platforms, Internet of Things, Big Data Analytics
- Artificial Intelligence/Machine learning, Cloud Computing & Sensors,
- Smart Production/Smart factory and additive manufacturing or 3D Printing Advanced
- Manufacturing systems such as nanotechnology, biotechnology and new improved materials/Processes and Computer aided designs

Relevance of Technologies to the Trade and Industry Sector

■ Don't know ■ Extremely relevant ■ Irrelevant ■ Relevant ■ Somewhat relevant



OUTLINE OF STI4SDGs ROADMAP

01.

Chapter 01

Introduction/Background, Objectives

02.

Chapter 02

Situational Analysis

03.

Chapter 03

Vision, Goals and Targets of the Roadmap

04.

Chapter 04

Strategies/Programmes/Projects/Activities &
Targets

05.

Chapter 05

Budget, Funding and Coordination
Arrangement for the Implementation

06.

Chapter 06

Partnership and Communication Strategy to
sustain stakeholder involvement and ensure an
Inclusive Governance

07.

Chapter 07

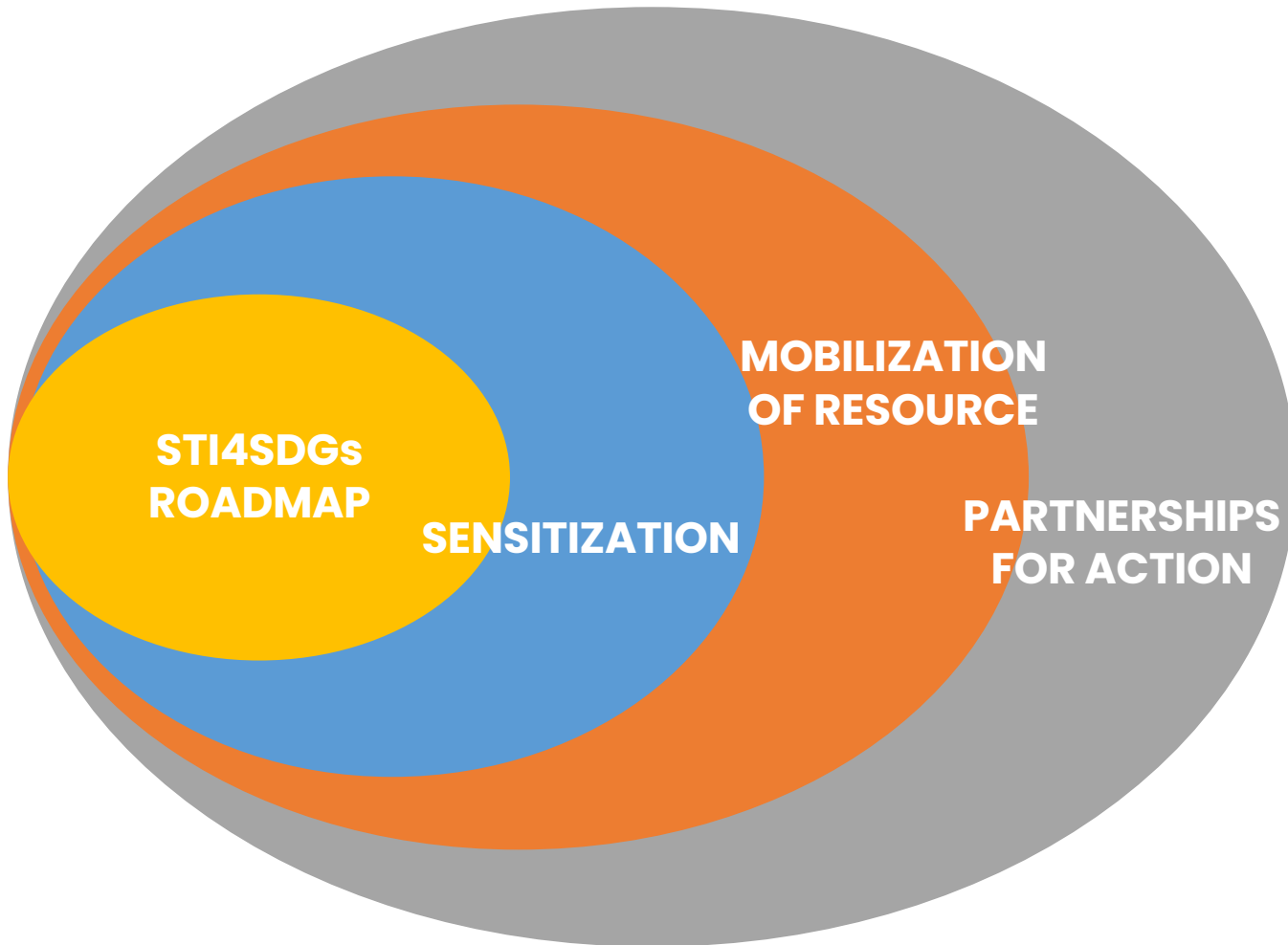
M&E Plan/Framework – Monitoring and
Evaluation System

Policy Briefs (5)

- Conceptualizing STI4SDGs Roadmaps: An Actionable Strategy aimed at accelerating the achievement Of SDGs using STI in Ghana
- Review of the current STI Policy, SDGs and Development Plans and the Inter-linkages
- Assessment of STI Capabilities to meet prioritized SDGs
- Harnessing Innovation potential of the Ghanaian Youth for the attainment of the SDGs
- Fact Sheet on current situation with prioritized SDGs

WAY FORWARD – STI4SDGs ROADMAP

FAST TRACKING ACHIEVEMENT OF SDGs WITH STI



TIER 01

STI Cross-Cutting
Multi-sectoral STI4SDGs
Programmes/Projects
Champions for sensitization

TIER 02

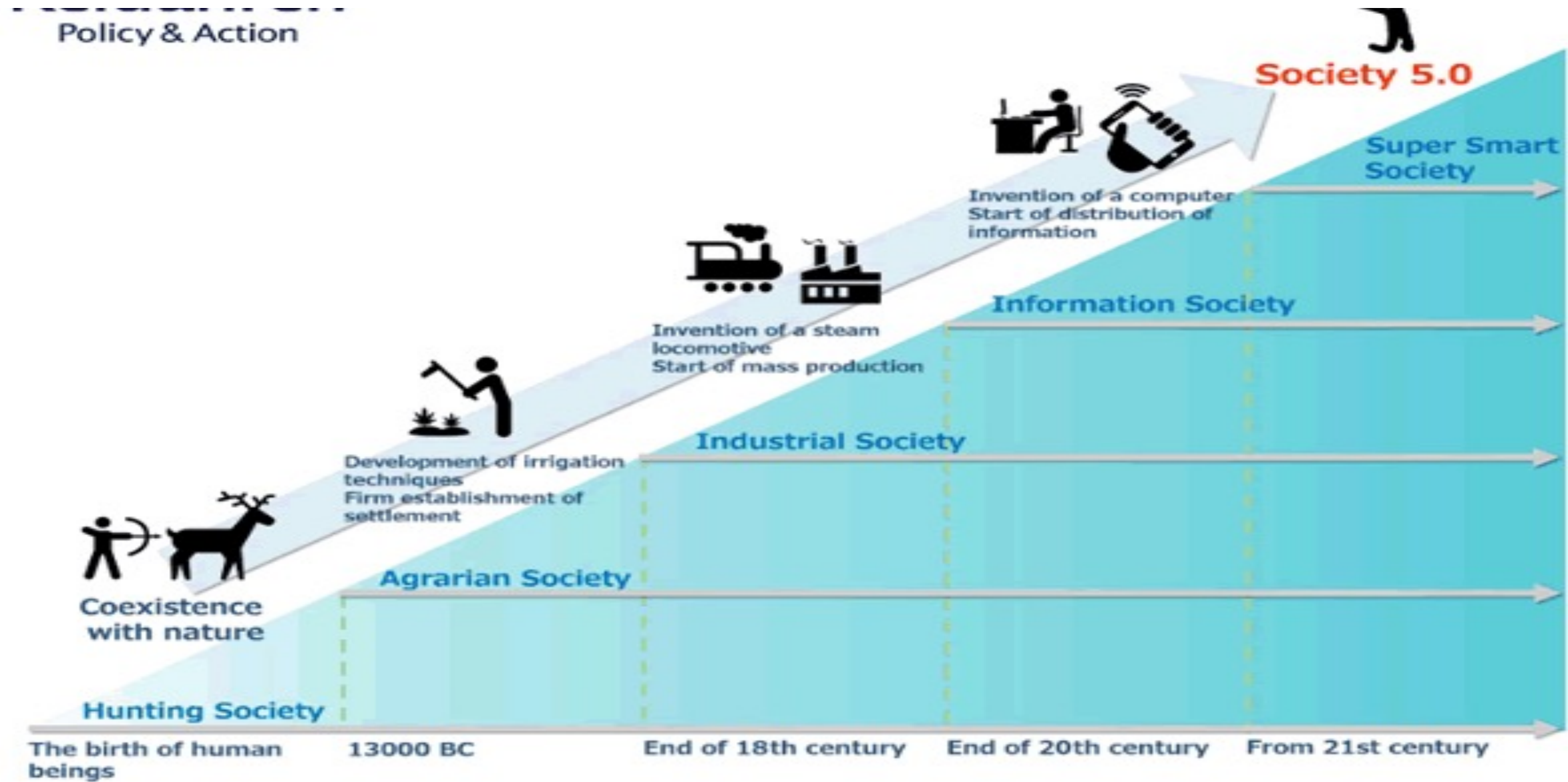
Resource mobilization strategy
Identification of potential partners
Pitching for support

TIER 03

CONCRETE PARTNERSHIPS

- National Level Partners
- Regional Level Partners
- International Level Partners

Breaking Down walls (societal, economic and environmental challenges) with ST&I Applications



Thank You For Your Attention



Partnerships in STI4SDGs Action