



THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA



NATIONAL SCIENCE, TECHNOLOGY AND INNOVATION POLICY

IMPLEMENTATION STRATEGY

IMPLEMENTATION STRATEGY



The main objective of this implementation strategy is to outline a set of projects and activities that are essential in operationalising the policy in ways that ensures optimum realisation of the expected outcomes, development impacts and transformative change in Ethiopia.

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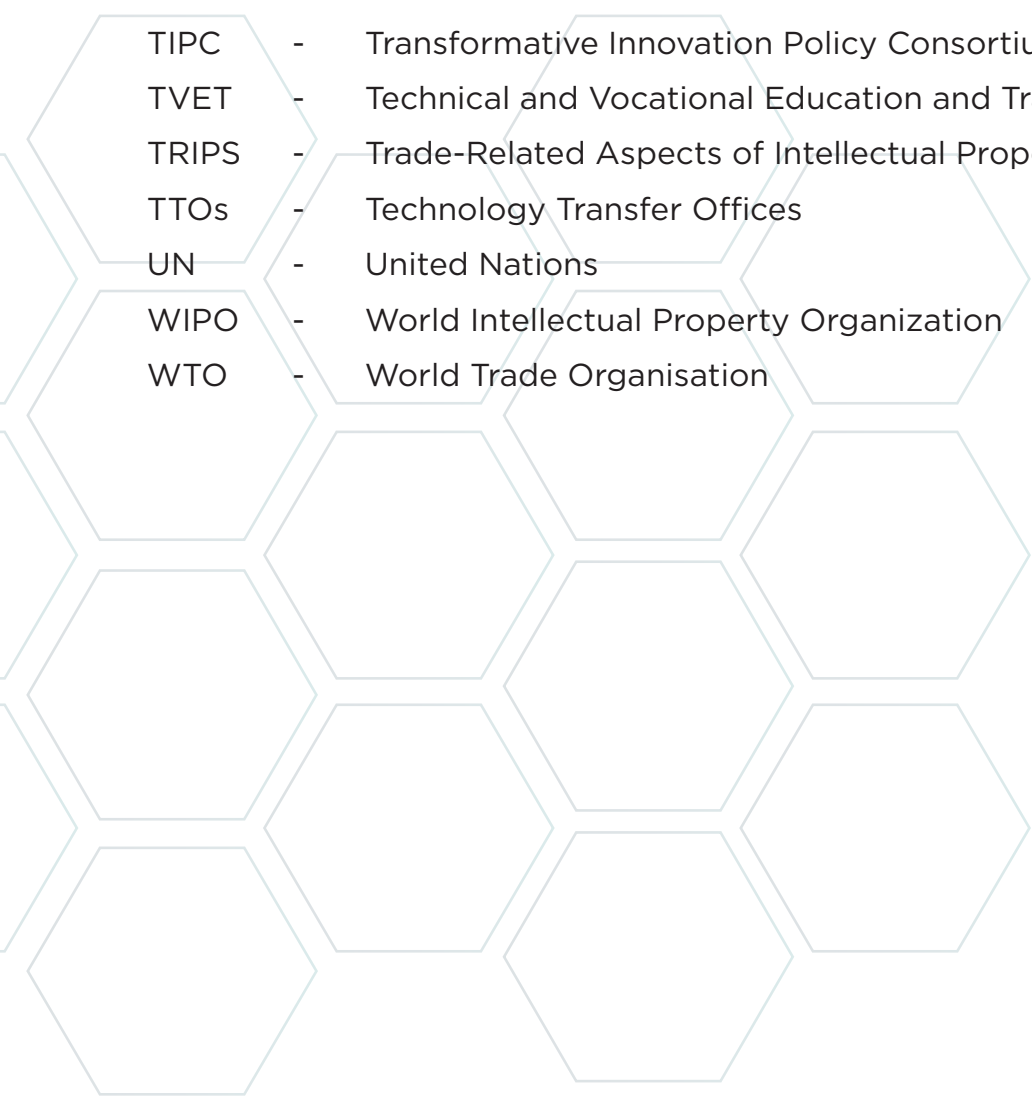
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LIST OF ABBREVIATIONS

AfricaLics-	African Network for Economics of Learning, Innovation, and Competence Building Systems
ATPS	- African Technology Policy Studies (Network)
BERD	- Business Expenditure on Research and Development
CSOs	- Civil Society Organisations
DFIs	- Development Finance Institutions
EBTI	- Ethiopian Biotechnology Institute
EC	- European Commission
EDTF	- Ethiopian Diaspora Trust Fund
EIPA	- Ethiopian Intellectual Property Authority
EnAO	- Ethiopian Accreditation Office
FDIs	- High Foreign Direct Investments
GDP	- Gross Domestic Product
GERD	- Gross Expenditure on R&D
DFI	- Development Finance Institutions
GII	- Global Innovation Index
GIZ	- German Corporation for International Cooperation
GoE	- Government of Ethiopia
HEIs	- Higher Education Institutions
HERD	- Higher Education Expenditure on Research and Development
ICK	- Indigenous Community Knowledge
IDP	- International Development Partners
IP	- Intellectual Property
IPR	- Intellectual Property Rights
IRKS	- Indigenous Resources and Knowledge Systems
ITC	- International Trade Centre
M&E	- Monitoring and Evaluation
MERRL	- Monitoring, Evaluation, Reflection, Reporting and Learning
MCIT	- Ministry of Communication and Information Technology



MInT	-	Ministry of Innovation and Technology
MoE	-	Ministry of Education
MoF	-	Ministry of Finance
MoFA	-	Ministry of Foreign Affairs
MoI	-	Ministry of Industry
MoLS	-	Ministry of Labour and Skills
NSO	-	National Standards Organization
R&D	-	Research and Development
S&T	-	Science and Technology
SSM	-	Standards and Scientific Metrology
STI	-	Science, Technology and Innovation
STIP	-	Science, Technology and Innovation Policy
TIAH	-	Transformative Innovation Africa Hub
TIPC	-	Transformative Innovation Policy Consortium
TVET	-	Technical and Vocational Education and Training
TRIPS	-	Trade-Related Aspects of Intellectual Property Rights
TTOs	-	Technology Transfer Offices
UN	-	United Nations
WIPO	-	World Intellectual Property Organization
WTO	-	World Trade Organisation

FORWARD



With the world marked by fast-paced technological progress and intricate global challenges, the strategic leveraging of Science, Technology, and Innovation (STI) is critical. The modern STI environment comes with unprecedented possibilities and daunting challenges, calling for vision and strong action. Around the world, revolutionary changes catalyzed by digital technologies, sustainability needs, and health breakthroughs are remaking our world. Ethiopia must lead in this change, establishing the conditions in which innovation can thrive, and science is translated into tangible gains for society. This STI policy is not only an economic imperative, but also a key instrument to enhance the well-being of all Ethiopians, aligned with national priorities and addressing pressing social needs.

The Ethiopian Science, Technology, and Innovation (STI) Policy 2022 provides a strategic guide, using key STI sectors to drive national development. The policy identifies the pivotal role that STI can play in advancing Ethiopia's development goals, examining opportunities and challenges. Harmonizing with national policies like the development plan and data policy, it aligns with Ethiopia's overall vision.

Drawing lessons from the success of high-STI economies, Ethiopia's vision is to develop a knowledge-based economy fueled by skills and innovation. This strategic action is critical in the pursuit of the United Nations Sustainable Development Goals (SDGs), the agenda 2063 of the African Union, as well as other global development priorities. Drawing strength from the awareness of the vital role of STI in 2012's STI policy, the 2022 one tackles implementation impediments and amplifies transformative achievements. The new strategy provides a clear roadmap with specific activities and respective implementing institutions on:

- Enhanced technology development and management.
- Research and development are aligned with national priorities.

- A globally competitive, innovation-driven entrepreneurial economy.
- Increased financial investment in national STI aspirations.
- Improved support and incentives for STI in national development.
- Strengthened intellectual property base and inter-ecosystem linkages
- An environment aligned with Ethiopia's socio-cultural development.

Effective national STI governance, headed by the National STI Council, implementing entities like universities and research institutions, will be a must, accompanied by robust monitoring, evaluation, and learning arrangements. Achieving Ethiopia's aspirations to be a beacon of Africa's prosperity is a call upon all stakeholders together: government, academia, business, civil society, and the development partners. We are duty-bound to collectively advocate for the application of the 2022 STI policy to realize the full potential of science and technology to a future that is both sustainable and prosperous. Through embracing collaboration and collective responsibility, leading Ethiopia towards a knowledge-based, innovative, and prosperous future.

His Excellency, Belete Molla Getahun (PhD)

Minister, Federal Democratic Republic of Ethiopia

Ministry of Innovation and Technology



Belete Molla Getahun (PhD)
Minister

EXECUTIVE SUMMARY

The Government of Federal Democratic Republic of Ethiopia, through the Ministry of Innovation and Technology and related agencies, recognises the important role of Science, Technology and Innovation (STI) in economic growth and development, competitiveness, prosperity and social progress of the citizens. To this end, MINTE undertook the formulation of the 2022 National STI Policy. The policy helps to ensure that the country expedite efforts required to build STI capabilities and skills, appropriate and adapt STI for development, develop and manage research and STI in ways to help address the current challenges facing Ethiopia while also achieving the goal of becoming the property beacon of the continent.

The 2022 National STI Policy builds on previous efforts by Ethiopia to achieve structural transformation through the formulation and implementation of STI policies, strategies and plans that foster transformative change. The National STI Policy is aligned with related policies and strategies. Combined, these policies and strategies will help realise national prosperity and indigenous economic development that is more inclusive, sustainable, and prepares Ethiopia for the future. To operationalise the 2022 National STI Policy, an Implementation Strategy is essential. The effective operationalisation of the activities and realisation of the objectives outlined in this Implementation Strategy will result in transformative outcomes and development impacts that include

1. A more competent research, STI system and regulatory environment better equipped to address Ethiopia's current and future challenges through innovation.
2. Enhanced research and STI capabilities that address the current mismatch of skills in the ecosystem and better support Ethiopia's TYDP goals and the desire to become Africa's beacon of prosperity through technology development and export-led growth.
3. Greater contribution of STI to industry, employment generation, wealth creation,

inclusive and sustainable development, and GDP.

4. Strengthened STI policy governance system in Ethiopia that more effectively integrates research and industry, and enhances linkages, coordination and cooperation among NSI actors.
5. An Ethiopia that is innovation and knowledge-driven, enabled by a more conducive ecosystem for STI coupled with increased funding from private sector.

¹ Such as the Ten-year National Development Plan and other related documents



VISION, MISSION & OBJECTIVES OF THE STI POLICY



VISION

The Vision of the Science, Technology and Innovation (STI) Policy is based on the national vision which says *“to see Ethiopia as a model of prosperity for Africa”*. Accordingly,

the STI Policy vision is **“To see Ethiopia be a competitive and preferred country for the development of STI by the year in 2030”**.



MISSION

Creating a conducive environment to science, technology and innovation, and increasing its contribution to job and wealth creation as well as to GDP growth.

OBJECTIVES

The main objectives of the policy are as follows.

1. Establish a system that can create demand-based manpower who can participate competently in the next generation industry.
2. Develop infrastructures for science and technological research as well as for creating innovation platforms continuously.
3. Encourage science, technology and business-based innovations to increase the contribution to job and wealth creation, and gross domestic product (GDP) growth.
4. Ensure the leading role of the private sector by enhancing its participation in technology development and innovation.
5. Build a culture of science, technology and innovation by creating an organisational structure and system that can be used to develop indigenous knowledge.
6. Promote national, regional and international partnerships and benefits by strengthening institutional linkages and cooperation.
7. Establish legal and operational frameworks that can create a conducive ecosystem for science, technology and innovation.

In line with the objectives of the policy, the main objective of this implementation strategy is to outline a set of projects and activities that are essential in operationalising the policy in ways that ensures optimum realisation of the expected outcomes, development impacts and transformative change in Ethiopia.



CHAPTER SUMMARY

Chapter 1, Introduction, provides the background and context of Ethiopia's development and STI Policy. It covers the review of outcomes of the 2012 STI policy, lessons from international best practices on STI policy implementation strategies and provides a situational analysis that summarises the diagnostics on the STI policy ecosystem in Ethiopia. In doing this, the chapter also presents the STI policy ecosystem actors, stakeholders and institutions while articulating issues related to STI capabilities, learning, and framework conditions. The chapter ends with a SWOT Analysis of Ethiopia's STI policy ecosystem, policy rationale, the underpinning methodology and expected outcomes and development impacts from the implementation of the strategy.

Chapter 2, Priority Areas, Policy Directions and Strategies, and Goals, in line with the 2022 STI policy, articulates eight priority areas for Ethiopia. These priority areas are referred to as policy directions and strategies, are made up of strategic goals alongside their respective performance strategies in the STI policy. The priority areas are accompanied with performance strategies, which act as the key indicators to help guide and monitor the implementation. The development of the priorities, policy directions and strategic goals, responds to Ethiopia's development trajectories and ambitions, in line with international best practices, and technological trends. This implementation strategy provides a framework and roadmap for the operationalisation of the selected eight priority areas outlined in STI policy.

Chapter 3, Policy Direction and Strategy 1: Human Resource Development,

responds to the STI policy challenge of weak STI human resources and a widespread lack of knowledge and skills. In addition, the contents of this chapter contribute to addressing attitudes towards the use of technologies for the advancement of STI, research and development. Weak human resource hinders Ethiopia's ability to more effectively harness STI for economic growth and development. Therefore, focusing on human resource development and building a future-oriented workforce is vital. This chapter provides clear pathways and activities in this regard.

Chapter 4, Policy Direction and Strategy 2: Technology Development, Transfer and Knowledge Management, responds to Ethiopia's inability to develop and transfer technologies and manage knowledge from within the country and other countries. This is an important STI policy challenge in that effective technology development, transfer and knowledge can help ensure that innovation contributes more adequately to socio-economic development. In addressing this policy challenge, the chapter provide insights on ways to further strengthen innovation capabilities in ways that support efforts to collect, analyse, store, disseminate and utilise data and technological knowledge for the benefit of Ethiopia.

Chapter 5, Policy Direction and Strategy 3: Research and Development, deals with the STI policy challenge of low research and development (R&D) needed to accelerate STI and support the levels of socioeconomic progress and transformative change that Ethiopia aspires to. The discussions in the chapter highlight the fact that an effective R&D system requires highly skilled researchers, modern research infrastructure (education, institutions, funding), including active roles by the private sector. Activities outlined in this chapter contribute to addressing the gaps in Ethiopia's research and innovation performance and economic growth. Operationalising the activities outlined in this chapter will enhance research excellence and help ensure that research and STI addresses the pressing development challenges of Ethiopia.

Chapter 6, Policy Direction and Strategy 4: Innovation and Enterprises Competitiveness, focus on the need for Ethiopia to improve its international competitiveness. Evidence from the 2023 Global Innovation Index (GII) shows that Ethiopia ranked 125th among the 132 economies featured². The evidence also reveals disparity between Ethiopia's innovation inputs and outputs. Progress in STI is vital to building a knowledge-based and productive economy that ensures competitive technology startups, high growth enterprises and job creation. Hence, strengthening Ethiopia's innovation and startup ecosystems is central to realising a dynamic business environment that fosters the creation of job and economic opportunities that effectively supports the country's innovation outputs and international competitiveness.

²<https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/et.pdf>

Chapter 7, Policy Direction and Strategy 5: Financial Supply, Investment, Support and Incentives, addresses the STI policy challenge being related to Ethiopia's slow progress in research and inadequate investments STI. STI activities require funding – from research and knowledge production to technology development and commercialisation. The discussions in this chapter highlight the strong positive correlation between high investments in R&D and economic progress, while recognising that R&D is only one factor in the complex processes that result in innovation and economic development. Several performance strategies in this STI policy propose the establishment of new instruments, projects or institutions. These require funding. On this backdrop, this policy direction responds to the challenge of financial supply, investments, support for R&D, and incentives needed to drive STI in Ethiopia.

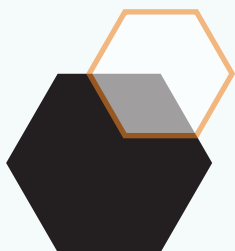
Chapter 8, Policy Direction and Strategy 6: Quality and Intellectual Property, extend the discussions on the situational analysis and highlight that although productivity has increased over the years in Ethiopia, quality and standardisation, have not kept pace with the increase in productivity. The chapter responds to the policy challenge of quality improvements, standards and intellectual property rights (IPR), which are necessary for exports to international markets and technology development and utilisation in Ethiopia. Achieving quality and operationalising IPR regimes require capabilities (human resource development), R&D, funding, and other priorities in this implementation strategy. Relatedly, gaps in IPR, accreditation, and monitoring highlight growing challenges that require urgent STI policy intervention in Ethiopia.

Chapter 9, Policy Direction and Strategy 7: Cooperation, Partnership and Linkage, build on the STI policy challenge presented in the SWOT Analysis, which indicates gaps in international research collaboration between Ethiopia and a) the rest of the African continent and b) countries worldwide. In the SDGs era, partnerships are vital to progress in STI, inclusive and sustainable development, and transformative outcomes. Areas of cooperation, partnership and collaboration will include joint R&I programmes, capacity building, knowledge co-creation and co-production, technology transfer activities, and mutual learning exercises on R&I and STI policy.

Achieving the necessary cooperation level will require increased coordination and partnership between public and private institutions and effective governance arrangements.

Chapter 10, Policy Direction and Strategy 8: Environmental, Social and Cultural Development, responds to a core dimension of the SDGs is addressing environmental and social challenges alongside the drive for economic growth. This is global STI policy challenge that also impacts on Ethiopia. However, efforts in Ethiopia to address environmental and social challenges have been inadequate. For example, the effective management and disposal of technologies that are developed or imported and utilised in the country remain a key area of challenge. The chapter emphasise the need for a culture shift towards technology development, management and utilisation lifecycles that are friendlier to the environment and do not exacerbate social challenges.

Chapter 11, Institutional Governance and Implementation Framework of the STI Strategy, provides the implementation roadmap, implementation approach and Governance, institutional mechanism and implementation action plan. This chapter also presents the implementation matrix for cross-cutting activities, and approach to evaluation and learning. Chapter 12, Funding, concludes with the funding, and budget allocations while also outlining the anticipated sources of funding. If effectively operationalised. The outcomes of this implementation strategy can help Ethiopia achieve the national vision of becoming Africa's beacon of prosperity.



CHAPTER 01

Introduction



Figure 1: Map of Ethiopia with neighbouring countries

1.1 BACKGROUND AND CONTEXT OF ETHIOPIA'S DEVELOPMENT AND STI POLICY

The Federal Democratic Republic of Ethiopia is the second populous country in Africa after Nigeria, with a population of about 126.5 million people (2023). It is one of Africa's fastest-growing economies, with a growth rate of 7.1% in 2022/23 (according to the African Development Bank (AfDB, 2024))³. Despite this high growth rate, Ethiopia, remains one of the poorest countries in Africa, with a per capita gross national income (GNI) of \$1,020 – compared to Nigeria, \$5,700; Kenya, \$5,680; and Tanzania, \$3,050. In response to this low GNI per capita and the need for economic growth, Ethiopia aspires to attain the status of a lower-middle-income country by 2025, building on its strong growth over the past decade.

This growth has been driven primarily by the service sector, industry and agriculture (AfDB, 2024) alongside investments in public infrastructure – transport networks, roads and housing construction, and manufacturing. In concrete terms, the 2021/22 economic growth was mainly attributed to 7.6 percent expansion in services sector, which accounts for 40 percent of the GDP (see AfDB, 2024), 6.1 percent in agriculture and 4.9 percent in industry⁴. This high growth over the years has helped to reduce poverty, alongside a corresponding improvement in the human development indicators.

³ <https://www.afdb.org/en/countries/east-africa/ethiopia/ethiopia-economic-outlook>

⁴ National Bank of Ethiopia, Annual Report 2021/22, <https://nbe.gov.et/wp-content/uploads/2023/07/2021-22-Annual-report.pdf>, p.4; see also AfDB (2024)

Besides construction and public infrastructure development, agriculture employs about 70% of the population, accounting for a significant contribution to the GDP. Nevertheless, social challenges⁵ remain and continue to hinder the country's economic, transformation and development efforts.

Development Challenges

To help foster economic growth that is sustainable, inclusive and more friendly to the environment, the government of Ethiopia launched a Ten-Year Development Plan (TYDP)⁶ to help chart the country's pathway to prosperity. The Development Plan, designed to run from 2021 to 2030, articulates the national development vision and strategic pillars of focus. The Development Plan also outlines the challenges that confronts Ethiopia, for which science, technology and innovation (STI), through effective policy implementation, could potentially play major roles in helping to address.

These challenges include the need to ensure economic growth that is more inclusive, desire for greater progress in the rate of job creation and structural transformations, and reduction in external debt distress (see Figure 2 below). Others include low competitiveness and product diversification; imbalance between domestic savings and investment, inflation, and unemployment and reform (FDRE, 2020), better sectoral linkages, ability to mobilise domestic resources, appraisal and monitoring of financial institutions, provision of social services, particularly health and education, and increasing capabilities in government⁷. Although growth has slowed between 2019 and 2021/22 (Figure 3), corresponding to the Covid-19 pandemic era, recent data shows that Ethiopia has returned to enviable growth levels (AfDB, 2024).

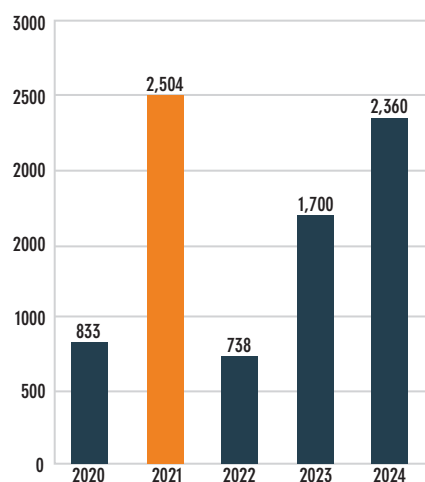
The need to sustain high growth levels strengthens the arguments for the enhanced role of STI in realising an innovation-led knowledge economy that is more competitive and export-led. On this backdrop, the STI policy seeks to help address Ethiopia's development challenges in a manner that ensures transformative change that cuts across economic, social and environmental domains. Achieving this call for a systems approach that involves robust research and STI, driven by effective policy frameworks. This implementation strategy sets out to do this.

⁵ <https://datacommons.org/place/country/ETH#>

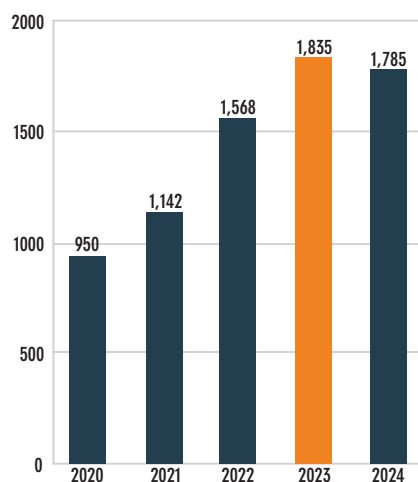
⁶ https://www.ircwash.org/sites/default/files/ten_year_development_plan_a_pathway_to_prosperity.2021-2030_version.pdf ; see also: https://capacity4dev.europa.eu/library/ethiopia-ten-years-dev-elopment-plan-2021-2030-planning-and-development-commission-federal-democratic-republic-ethiopia-2020_en

⁷ Source: 10-year Development Plan, pp 4-6, available at https://www.ircwash.org/sites/default/files/ten_year_development_plan_a_pathway_to_prosperity.2021-2030_version.pdf

| ETHIOPIA



| TANZANIA



| RWANDA

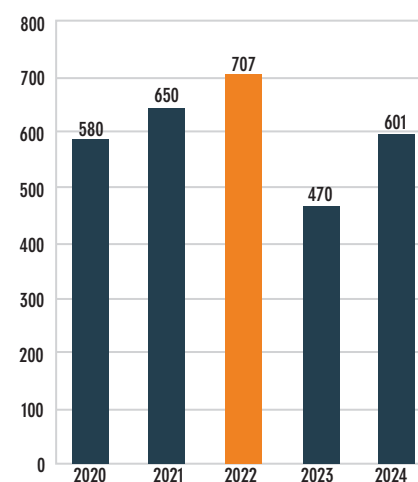


Figure 2: Lending Commitments by Fiscal Year (in millions of dollars)

Notes: Amounts include The International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA) commitments.

Source: World Bank⁸

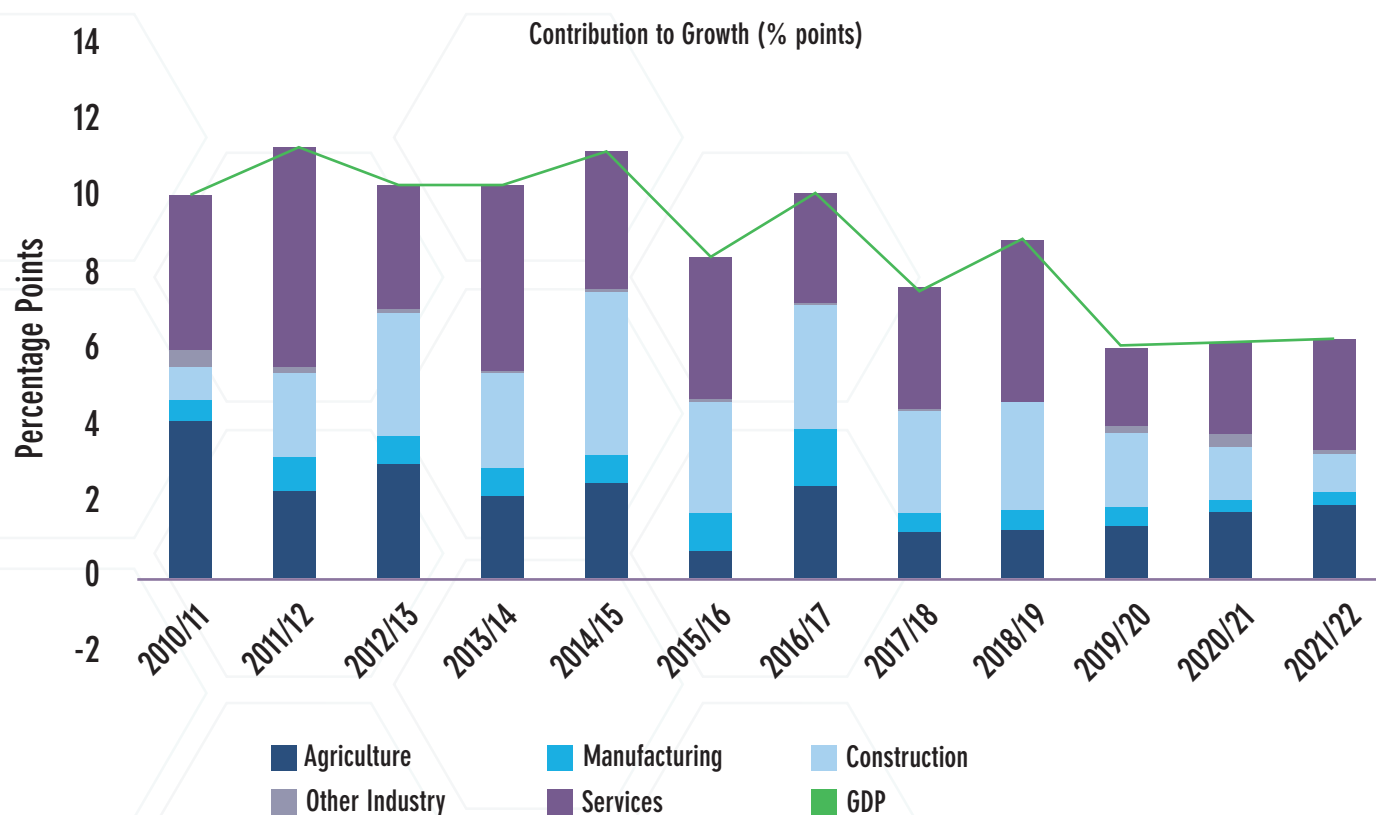


Figure 3: Growth in Ethiopia has slowed in recent years
Source: WBG (2024)

⁸ Ethiopia, <https://www.worldbank.org/en/country/ethiopia/overview>; Tanzania, <https://www.worldbank.org/en/country/tanzania/overview#2>, Rwanda, <https://www.worldbank.org/en/country/rwanda/overview#4>

Ethiopia and the Sustainable Development Goals

Ethiopia's TYDP, in the Economic Sectors Development Plan and Infrastructure Development Plan, emphasise the importance of a clear alignment to the SDGs targets and indicators. Other efforts by the Government of Ethiopia (GoE) also highlight the importance of achieving the SDGs, for several reasons. For example, the impacts of climate change on Ethiopia, if not addressed, could derail the development progress that the country has made over the recent years. Despite these efforts, Ethiopia is only on track or maintaining achievements on two SDGs – SDG 12 and SDG 13. Four SDGs are moderately improving while others have stagnated or are stagnating; challenges remain in achieving the other SDGs (Figure 4). Recent evidence indicates that annual average losses to Ethiopia's gross domestic product (GDP), as result of climate change impacts, could range between 1 to 1.5% of GDP, rising to 5% by the 2040s. If not addressed, these adverse impacts of climate change could push more Ethiopians into poverty, thereby, exacerbating an already difficult economic situation (WBG, 2024)⁹.

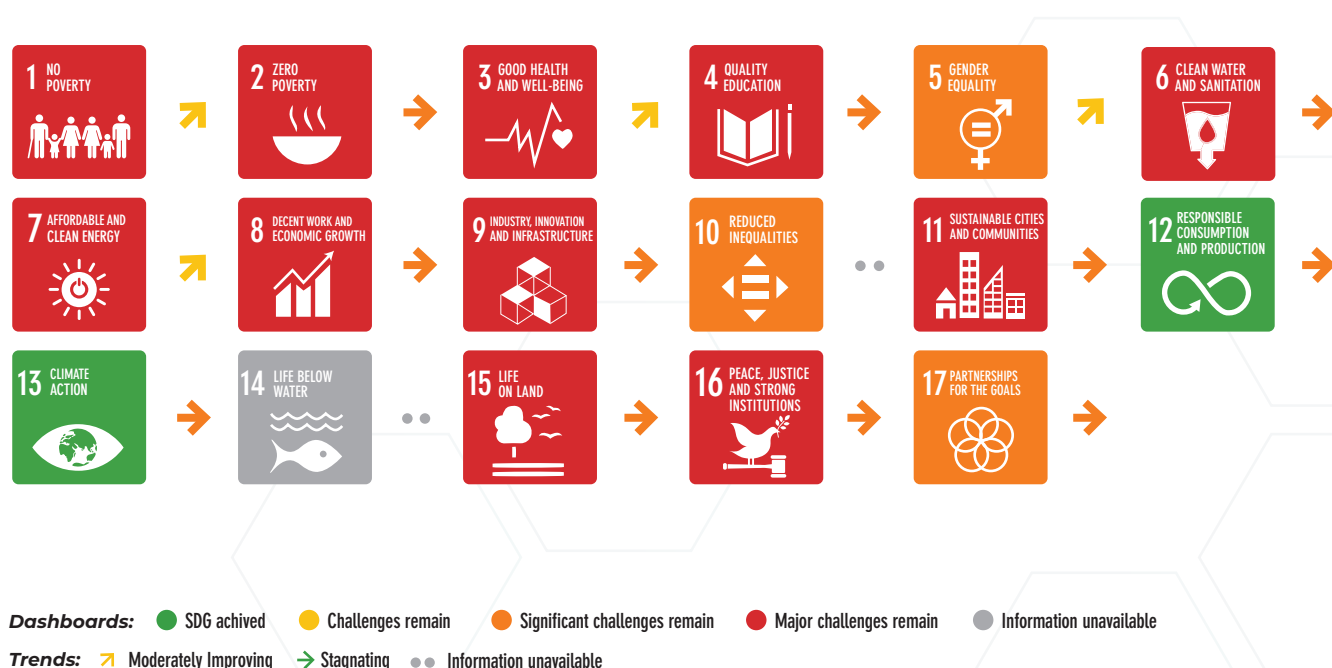


Figure 4: Status of SDG targets for Ethiopia (% trend indicators)

Source: <https://dashboards.sdgindex.org/profiles/ethiopia>

⁹ See also for example, <https://www.worldbank.org/en/news/press-release/2024/02/28/-climate-action-in-afe-ethiopia-acting-now-to-build-resilience-and-leverage-opportunities>

As the GoE has outlined in the TYDP, sustained and sustainable economic growth is important and vital for Ethiopia, especially in sectors that include agriculture, manufacturing and industry, construction, mining and petroleum, and trade. However, to realise the TYDP objectives, growth and development must be STI/innovation-led, sustainable and inclusive, if Ethiopia is going to accelerate poverty reduction, reduce hunger, boost shared prosperity, improve wellbeing, become a competitive economy and achieve the aspired status of “the beacon of Africa”. STI and the implementation of this STI policy will be essential to realising the GoE ambitious agenda to transform the country into a diversified, sustainable, more inclusive and resilient middle-income economy by 2030. Achieving the objectives of the TYDP, alongside the SDGs¹⁰ will require improved capabilities and skills, alongside governance and finance.

1.2 REVIEW OF OUTCOMES OF THE 2012 STI POLICY

Prior to the 2022 STI Policy, Ethiopia had the 2012 STI policy, which recognized the role of STI in structural economic transformation and sustainable development and helped make some advancements in the STI ecosystem. Nevertheless, the 2012 STI policy suffered from low implementation rate, a challenge that is common to other public policies in Africa. Evidence from several studies reveal that despite the good intentions and efforts resulting from the 2012 STI policy, the implementation was not successful in driving radical changes and transformation of the STI systems.

Relatedly, despite the high growth that Ethiopia has recorded over the last decade, the outcome of the 2012 STI policy shows that it did not adequately address the low level of technological learning that is still predominant in the country (UNCTAD, 2020). These less than optimum outcomes provide strong justifications for a renewed effort in implementation, as this strategy sets out to achieve. This need for a renewed emphasis on technological learning and innovation, as the drivers of economic growth for Ethiopia, will constitute an important focus of this implementation strategy and expected outcome.

While the 2022 STI stress the need for technology transfer, a more appropriate approach for Ethiopia would be the shift to technology development and innovation, as articulated in several recent studies (see example, UNCTAD, 2020; Daniels et al, 2023).

¹⁰ For more on Ethiopia's SDGs see: VNR (2022), <https://ethiopia.un.org/en/sdgs>, and UNFCCC

Understandably, this calls for the necessary levels of innovation capabilities and skills. That said, the underlying assumptions that technologies can be transferred from the global North to address pressing development challenges in Ethiopia and the global South has proven to be erroneous and ineffective.

The implementation of the 2022 STI policy will focus on outcomes that help achieve the objectives that are articulated in the policy directions and strategies: human resource development, technology development and knowledge management, research and development, innovation and enterprise competitiveness, financial supply, investment, support and incentives, quality and intellectual property, cooperation and linkage, and environmental, social and cultural development.

The duration of this implementation strategy is set for 10 years (2022 – 2032, with mid-term review and update proposed to take place around 2027-2028 (fifth year mark). The next section discusses international best practices in policy implementation, and the importance of drawing lessons from outside Ethiopia. Such lessons informed the development of this strategy.

1.3 LESSONS FROM INTERNATIONAL BEST PRACTICES

Several factors affect policy implementation. If not addressed these factors can result in significant challenges that hinder effective implementation thereby reducing the ability of public policies to achieve their intended outcomes and produce the desired development impacts and transformative change. These factors include politics, power and political economy considerations; ineffective planning; poor stakeholder engagements and participation; funding and resource constraints; leadership commitments; gaps in governance and coordination often exemplified by fragmentation and delays from bureaucratic processes; poor communication among key implementation actors and stakeholders, and weaknesses in the policy formulation processes. A few examples of these challenges in other contexts and good practices that help illustrate how other international organisations and countries address STI implementation challenges are presented here.

Starting with the European Institute of Innovation and Technology's (EIT), the Implementation Framework for the EIT's Knowledge and Innovation Communities (KICs), as

an example, makes a compelling case for adequate resources and financial sustainability to support the delivery of the projects and activities in the implementation strategy. This example emphasises co-funding requirements for implementation activities, which in the case of Ethiopia, could relate to crowding in funds from private sector¹¹. Other important points emphasised in the EIT example include communication and inclusive dialogue among actors and stakeholders, shared learning, collaboration, commitment, and trust among implementation delivery partners. These factors are fundamental to effective implementation. Communication for instance is essential to increase “visibility and raise awareness and interest among relevant stakeholders”¹². Stakeholders will only implement policies or strategies that they are aware of and subscribe to. Hence, the argument for ownership.

OECD (2020), like EIT (2021), highlight the need for establishing a communication strategy, inclusive stakeholder engagement and provisioning for sufficient resources. In addition, it emphasises policy alignment with development priorities, capacity, and strong institutions to champion implementation activities. On resources, two important lessons are advanced, the importance of i) considering all “resource dimensions (financial, equipment and facilities, time) necessary to achieve the policy” implementation and ii) securing “resources for the whole implementation process and not only the initial implementation phase” (OECD, 2020, p.12). The key message from OECD (2020) is that policy implementation is as important as policy formulation. As a result, implementation must not be overlooked as it is vital for achieving transformative change.

The European Commission experience articulates important lessons of good practices that cover governance aspects of implementation. The lessons include the appointment of a steering group, management team and strategic advisory council to guide the implementation, (Matusiak et al, 2022). Other aspects emphasised range from the design of specific policy instruments and refining of the policy mix, to establishing an implementation budget, monitoring, evaluation and learning, alongside funding and skills for M&E. The development of the policy instruments may require a policy mix¹⁴

¹¹ EIT (2021). EIT Regional Innovation Scheme Implementation Framework 2022-2027, https://eit.europa.eu/sites/default/files/eit_ris_implementation_framework_2022-2027.docx_0.pdf

¹² EIT (2021), p.15

¹³ In this approach, it is recommended that the Steering Group makes strategic decisions while the Management Team supervises deployment and operations. This differentiation in roles and responsibilities is important to avoid duplication, improve coordination and efficiency, and ensure effective implementation.

¹⁴ A policy mix is the totality of the policy instruments used in the implementation. If designed properly, policy instruments should reinforce each other. It is, therefore, important to think beyond individual instruments but to focus on the policy mix – that is, the full set of policy instruments deployed in implementing the strategy. And examine how they relate to each other and where gaps might exist.

gap analysis. Taken together, these factors help ensure effective implementation that fosters optimum development outcomes.

Away from international examples outside the continent, several African countries provide useful lessons that are valuable to Ethiopia's STI policy implementation efforts. For instance, South Africa's STI policy implementation strategy shows that it is important for STI policy to focus on transformative change, sustainability transitions, and inclusivity. And that an enabling environment, coordination, funding for STI and MEL are important (RSA, 2022).

The Uganda example¹⁵ highlights the importance of ensuring that the enabling conditions for implementation are in place. This includes institutions and governance structures, capabilities and skills, macroeconomic conditions, landscape factors, and the presence of appropriate legislation, data, and funding. Another important lesson from Uganda is the need to cost the implementation and include a costed budget in the implementation framework.

Other examples from Africa 1) emphasise funding allocation for implementation for instance in Togo, which reports that although an STI plan exists, it has not yet been implemented by the government due to lack of funding; 2) Guinea, where "there is often no communication strategy for the implementation"; 3) Namibia, where a MEL framework exists, however, implementation is yet to take place because the framework is awaiting validation; and 4) in the case of Zambia, where changes in key ministries and work to produce a new national development plan have led to delays in implementation of the STI policy (Daniels et al, 2024). These examples highlight key considerations for Ethiopia if it will successfully implement this strategy and achieve the expected outcomes.

These challenges have been tackled in diverse ways in line with the national contexts. In the case of South Africa, for example, one way the funding challenge has been tackled was through increased collaboration with development partners, which helped to crowd-in funds from international sources, as shown in the Just Energy Transition

¹⁵ See Uganda Green Growth Development Strategy: Implementation roadmap – from strategy to action, https://ccd.go.ug/wp-content/uploads/2019/10/CGDS_Uganda-Implementation-Roadmap.pdf and The Ugandan Green Growth Development Strategy 2017/18 – 2030/31, <https://gggi.org/wp-content/uploads/2019/03/Uganda-Green-Growth-Development-Strategy-20171204.pdf>

Implementation Plan¹⁶. Also in South Africa, the merging of the Department of S&T¹⁷ (now the Department of Science and Innovation) with the Department of Education was meant to tackle challenges that include the need to improve linkages between capabilities, education and training on the one hand and STI on the other hand; enhancing coordination and reducing fragmentation, strengthening governance, and fostering policy alignment. One other way that the challenge of funding is being addressed in countries across Africa is via the establishment of National Research Foundations (NRFs). For NRFs to be effective, they must be well funded, adequately staffed and equipped with a good governance structure that fosters coordination and collaboration.

1.4 SITUATIONAL ANALYSIS: DIAGNOSTICS ON THE STI POLICY ECOSYSTEM IN ETHIOPIA

This section provides a situational analysis that underpins the implementation strategy. As this implementation strategy is for a national STI policy, the situational analysis focus on the diagnostics of the STI policy ecosystem, using the National Systems of Innovation (NSI) approach as the guiding framework. As a framework, the NSI primarily refers to stakeholders and institutions within a national system that shapes and influences the innovation activities, in addition to the interactions and learning among the actors within the system. Learning and capabilities are central to the NSI approach, alongside the ways that innovation actors and stakeholders integrate within the systems of innovation. As a result, these diagnostics cover interactions, relationships, linkages and capabilities in Ethiopia's STI policy landscape. The diagnostics starts with the analysis of actors, stakeholders and institutions in Section 1.4.1 below.

1.4.1 ACTORS, STAKEHOLDERS AND INSTITUTIONS

This STI policy draws on the NSI approach, which argues that innovation is the result of complex interactions, learning and relationships among actors, stakeholders and institutions within a system. These actors include government ministries, departments and agencies, universities and research institutes, business and enterprises within relevant industries, civil society organisations. In the context of Africa, Ethiopia, and other less developed countries, international development partners constitute an important

¹⁶ <https://www.stateofthenation.gov.za/assets/downloads/JET%20Implementation%20Plan%202023-2027.pdf>

¹⁷ The Government of South Africa's announcement of yesterday, 30 June 2024, has split Higher Education from STI, returning them to separate Ministries (or Departments, the preferred term in South Africa) – see <https://nationalgovernment.co.za/units/type/3/national-department>

group of stakeholders as they significantly influence the innovations ecosystem through, for example, capabilities building, funding, and learning. The interactions among NSI actors and their relevant stakeholder groups contribute to shape and influence innovation, which in turn can enhance technology development, foster innovative performance, boost competitiveness and increase economic growth.

A good understanding of the interactions, relationships, linkages and capabilities of Ethiopia's NSI actors is vital to the implementation of this framework. This is because, although the Ministry of Innovation and Technology (MInT) may have been solely responsible for the formulation of the STI policy; implementation will involve a broader network of actors, stakeholders and institutions. Figure 5 below presents Ethiopia's national innovation system and provides a representative array of actors, grouped into stakeholder categories, that will be key to the implementation. Effective collaboration among these actors and stakeholder groups will be vital to the successful implementation of the programmes, projects and activities outlined in this framework.

The 2022 STI Policy describes the roles of the different actors and stakeholder groups in Ethiopia's NSI – the role of the government, National STI Council¹⁸, private sector, and the community¹⁹. Two important dimensions of the NSI, as articulated in the 2022 STI Policy, related to the roles of the Private Sector and the Community. It is expected that the private sector will play a significant role in the implementation, and rightly so. This



Figure 5: National STI System of Ethiopia – STI Strategy Implementing Actors and Stakeholders

¹⁸ See Annex 6 for council members composition and main tasks

¹⁹ See Section 5 of the STI Policy

is because the private sector is essential in the development and commercialisation of STI, development and research activities, the promotion of STI and contribution to economic growth. The private sector is also key STI infrastructure development, resource generation allocation and funding of STI, for example, through their contribution to Business Expenditure on R&D (BERD), and innovation. For these reasons, Figure 5 captures the private sector actors such as Banks.

Lastly, there is clear recognition of people and culture as important components of the NSI. In addition to the role of the community in the development and shaping of a culture; the community and society in general, influences the adoption, markets, trajectory of STI – for example, through their consumption of products and services. A shift in the community towards – for example, demand for sustainable consumptions, mobility and transport, or energy – can influence R&D, STI systems, and other supply-side factors, thereby leading to systems change and transformations that contribute to realizing the objectives of frameworks such as Agenda 2063 and the SDGs. In all, the goal will be to ensure active and inclusive participation of a wide spectrum of the NSI actors in the operationalization of this implementation strategy. This is vital to ensuring successful implementation and that the benefits of this STI Policy are both optimised and shared equally in a manner that contributes to long-term systems change.

Despite the presence of these actors and stakeholder groups in Ethiopia's NSI, the innovation system continues to underperform on several fronts, including knowledge and technology outputs, human capital and research, infrastructure, and institutions. Expenditure on education as a percentage of GDP (HERD) and Gross expenditure on R&D as a percentage of GDP (GERD) have been on downward trends (WIPO, 2023)²⁰. The Global Innovation Index (GII) 2023 (WIPO, 2023), which measures the innovation ecosystem performance of countries globally, records that Ethiopia's main innovation strengths are labour productivity growth (rank 8), utility models by origin (rank 19) and high-tech imports, as a percentage of total trade (rank 40); while the areas of weakness include ICT access, ICT use and investments in software (Figure 6).

Ethiopian Airlines is Ethiopia's top innovation performer (WIPO, 2023). An important question, therefore, is how the innovation capabilities and knowledge from Ethiopian

²⁰ Global Innovation Index 2023, <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-main-report-global-innovation-index-2023-16th-edition.pdf>

Airlines could benefit other industry actors and sectors in Ethiopia. This calls for absorptive capacity and the right framework conditions (see Section 1.4.2 below).

Strengths			Weaknesses		
Rank	Code	Indicator name	Rank	Code	Indicator name
8	6.2.1	Labor productivity growth, %	132	7.3.2	Country-code TLDs/th pop. 15-69
19	6.1.3	Utility models by origin/bn PPP\$ GDP	131	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69
40	5.3.2	High-tech imports, %total trade	131	3.1.1	ICT access
40	6.1.4	Scientific and technical articles/bn PPP\$GDP	131	3.1.2	ICT use
43	5.3.3	ICT services imports, %total trade	131	3.3.3	ISO 14001 enviroment/bn PPP\$ GDP
48	5.3.4	FDI net inflows, %GDP	130	6.2.3	Software spending, %GDP
48	5.2.3	GERD financed by abroad, %GDP	95	5.2.5	Patent families/bn PPP\$ GDP
55	4.3.3	Domestic market scale, bn PPP\$	71	2.3.4	QS university ranking, top 3
66	7.1.3	Global brand value, top 5,000	48	6.2.2	Unicorn Valuation, %GDP
			40	2.3.3	Global corporate R&D Investors, top 3, mn US\$

Figure 6: Innovation strengths and weaknesses in Ethiopia

Source: GII (WIPO, 2023)

The GII provides a good benchmark in STI and international best practices for Ethiopia. The 2023 GII shows that South Africa (rank 59), Botswana (rank 85) and Senegal (rank 93) are the top-performing economies in the SSA region, while Rwanda (rank 103), Madagascar (rank 107) and Togo (rank 114) are the best-performing economies when classified by income group (low-income). Ethiopia ranks 125th (Figure 7) among the 132 economies featured in the GII 2023, with the lowest ranks in Infrastructure (132nd), Human capital and research (131st) and Business sophistication (130th). The country's rank of 130th in innovation inputs is a position lower than the previous year (2022), signifying a downward trend. Relatedly, evidence from the GII 2023 confirms that data availability in Ethiopia remains a major challenge for the innovation system, with Ethiopia "missing data for fifteen indicators and outdated data for twenty-two indicators"²¹. Effective implementation of the activities outlined in this strategy could address these weaknesses.

²¹ <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/et.pdf>

	GII Position	Innovation Inputs	Innovation Outputs
2020	127 th	130 th	110 th
2021	126 th	129 th	107 th
2022	117 th	126 th	100 th
2023	125 th	130 th	109 th

Figure 7: Ethiopia GII Ranking (2020-2023)
Source: GII (WIPO, 2023)

1.4.2 STI CAPABILITIES, LEARNING, AND FRAMEWORK CONDITIONS

As discussed above, having the right actors and stakeholder groups within the innovation system is important. However, it is equally important that the actors have the right and adequate set of STI or innovation capabilities. In this sense, a vital type of capability is absorptive capacity. Absorptive capacity helps to ensure that knowledge produced and diffused by science actors within the system is absorbed by industry actors and used in technology development and innovation. Related to capabilities is the concept of (interactive) learning, which is central to innovation.

Building on the preceding discussions above, the NSI can be viewed as a system of interconnected actors, stakeholders and institutions in the public and private sectors whose interactions determine rate and direction of technological learning and innovation²². Critical to capabilities enhancements, learning and innovation is ensuring that the necessary framework conditions are in place. Framework conditions in this sense include taxes, finance, alongside intellectual property rights that can promote or hinder innovation, interactive learning, and knowledge production, flows or absorption and instruments articulated in policies and regulations – such as the 10-year Development Plan & Home-grown Economic Reform Agenda (FDRE, 2020); 10-year Development Plan and the Agenda 2063: The Africa We Want; Digital Fund; Digitalization Strategy; e-Commerce Strategy; Industrial Policy of Ethiopia; Innovation Fund; Intellectual Property Policy; Research Strategy; and, Start-Up Act.

²² Freeman (1987), Lundvall (1992), Nelson (1993), Patel and Pavitt (1994) and Daniels et al (2020).

The diagnostics further reveal several implications of capabilities on policy implementation. “On paper, Ethiopia has most of the policies, regulations, background studies and road maps necessary to kick-start a successful process of technological learning, innovation and technological upgrading. In reality, however, there is a serious implementation gap across public institutions either because of capacity constraints or misallocation of efforts and resources” (UNCTAD, 2020, p.xiv). This gap in implementation, exacerbated by weaknesses in capabilities, highlights the need for this implementation strategy. And provides evidence for why it is important to address this gap to ensure that the STI Policy goals are achieved in ways that foster socioeconomic development for Ethiopia that is sustainable, inclusive and does not exacerbate social challenges.

1.4.3 SWOT ANALYSIS

This section builds on the preceding diagnostics of the NSI and capabilities, and provides a summary of the strengths, weaknesses, opportunities and threats (SWOT), with a focus on Ethiopia’s NSI. The diagnostics and preceding discussions, build on empirical data gathered during the workshop in December 2023 and secondary sources, inform the summary of the SWOT Analysis presented in Table 1 below.

STRENGTHS	WEAKNESSES
1. Established STI institutions - Ministries, HR e.g. Steering Committee, STI Council, etc 2. STI policy (2022) and supporting policies 3. Political Will by the Government 4. High level of Govt commitment in Promoting Sustainable Devpt by STI 5. Strong desire to align with the continental (Agenda 2063) and SDGs 6. Reduction in extreme poverty 7. High GDP growth 8. Supporting policies - e.g. home-grown economy policy, which complements the STIP 9. Presence of a large number of Higher Education Institutions (HEIs) 10. Progress made in “productive resources” - transport, energy, road and railway networks that can help spur innovation	1. Low human resource (HR) in STI 2. Low funding for R&D / STI - (GERD as % of GDP²³) 3. Low Patents registered in Ethiopia 4. Weak institutional capabilities 5. Low technological learning/low technological transfer 6. Weak infrastructure for research and STI 7. Weak linkages and synergy among NSI ecosystem stakeholders and actors 8. Weak research base and innovation outputs - including publications, and patents 9. Weak dissemination of research and use research/evidence for policy 10. Low (STI) policy implementation rates and mismatch between policy formulation and implementation 11. Poor/weak/outdated [STI] data, weak data availability 12. Weak IPR system, copyright, trademark 13. Low international research collaboration

²³ AUDA-NEPAD (2019) records 0.62% but other sources such as WIPO (2023) has lower values. It will be useful to obtain official records from the GoE

OPPORTUNITIES	THREATS
1. High Foreign Direct Investments (FDIs) 2. Youthful population – demographic dividend 3. Strong emphasis on Science education and availability of number of Universities 4. High number of Technical and Vocational Education and Training (TVET) colleges 5. The current Global STI development 6. Position as the “capital of Africa”	1. Low fund for research /STI 2. Inadequate linkage between STI policy and development priorities/aspirations 3. High under skilled / unskilled workforce, coupled with high unemployment and high school dropout rates 4. Mismatches in skills, teachers 5. Misalignment of TVET and HE programs with the industry²⁴ 6. Weak/low private sector participation in research activities due to a) under-developed research culture of the private sector, b) limited understanding of the role of STI and research by the private sector, and c) poor awareness of STI policy and its role in the economy

1.5 POLICY RATIONALE AND OUTCOMES

1.5.1 RATIONALE

The GoE national STI policy aligns with the TYDP, which outlines eight policy directions and strategic areas of action. To reiterate, these areas are: i) human resource development, ii) technology development and knowledge management, iii) research and development, iv) innovation and enterprise competitiveness, v) finance, investments, support and incentives, vi) quality and intellectual property, vii) cooperation and linkage, and viii) environmental, social and cultural development. These strategic areas of action reflect the range of challenges facing Ethiopia, which STI could help address. The strategic areas outlined support several sectors, systems, themes and cross-cutting issues. This is important as the national STI policy must help realise inclusive and sustainable development that serves the whole society.

As presented in Section 1.3 above, Ethiopia suffers from weak human resources. This weakness in human resources is manifested in several ways that include a) mismatch in skills between technical, professional and managerial staff or b) gaps in the number and quality of teachers needed to help the country achieve the ambitions set out in the TYDP. This provides the rationale and justification for a renewed focus on human resource development that is needed to harness STI for industrialisation, structural

²⁴ The Higher Education (HE) System Transformation Agenda is trying to address this

change, transformation, and sustainable development. Improvements in capabilities and skills are also vital for realising the strategic actions that related to technology development and knowledge management.

The discussions in the preceding sections have showed that research and innovation outputs remain low in Ethiopia. This calls for actions that promote research and development (R&D) and innovation, with a view to enhancing academic and technical outputs alongside and enterprise competitiveness that supports job creation. To achieve this, targeted finance, investments, support and incentives are needed at scale. Finance and investments are needed to develop and strengthen Ethiopia's research and STI infrastructure, embark on outreach and awareness campaigns to popularise STI, and increase investment in software and technology development. As presented in Figure 6 above, low investment and spending on software are major weaknesses in Ethiopia's NSI (WIPO, 2023).

Increased finance and investments that result in better quality research infrastructure and STI outputs call for improved quality and intellectual property rights (IPR). If managed well, IPR regimes can incentivise further investments in R&D and STI. The overall result is an ecosystem that fosters research and STI, which is essential for industrialisation and economic progress in Ethiopia. However, achieving this requires enhanced cooperation and better linkage among NSI actors in ways that help ensure that the knowledge produced is effectively utilized for technology development and innovation.

Lastly, for STI to thrive optimally in Ethiopia, it is imperative that the enabling environment is in place. The effective implementation of the GoE 2022 STI policy, as articulated in this strategy, will strengthen efforts to ensure adequate environmental, social and cultural conditions for optimizing the gains from STI for the benefit of Ethiopia. This is particularly vital in the context of the new and radical technologies such as Artificial Intelligence (AI), Fourth Industrial Revolution (4IR), Robotics, drones, data science, 3D printing, and nanotechnology, which Ethiopia can exploit to address its societal and economic challenges and achieve SDGs and TYDP.

1.5.2 METHODOLOGY

The method deployed in developing this implementation strategy followed a co-creative process that started with a review of relevant literature and secondary materials. This helped to gather data used in the diagnostics of the STI policy ecosystem in Ethiopia and inform the contents of the relevant sections. The literature reviewed includes scholarly sources, reports, policy documents, Ethiopia's national documents and materials supplied by MInT. The review of literature and secondary sources by the expert was followed by a four-day Mission to Ethiopia by the STI Policy expert (consultant).

During the Mission, which took place in December 2023, the expert held consultation meetings with key stakeholders and a two-day workshop with the STI Policy Implementation Steering Committee (see Annexes 1 and 2), whose members are drawn from government (Ministry of Innovation and Technology, Ministry of Education, and others), Academia, Industry and Civil Society Organisations (CSOs). The workshop provided space for the expert to discuss the core ideas of the implementation strategy with the Steering Committee members, gather their inputs and reflections, including feedback on the report outline, timelines and expected outcomes.

The method also involved an iterative process with the drafting of the strategy, allowing for feedback from the Steering Committee and other stakeholders. The Steering Committee provided useful comments on the drafts, which helped to enhance the quality and ensure alignment with the national priorities and development trajectory.

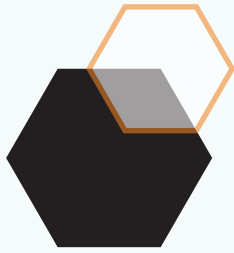
The final step in the project was a validation workshop held in October 2024. The validation workshop provided the space for key stakeholders to comment on the draft, but more importantly reflect on the prospects of implementation of the strategy. Stakeholders for the validation included representatives from government, academia and research, the private sector and specialized public institutions, and non-governmental organisations. Annex 1 provides a list of actors and stakeholders groups consulted in the exercise.

1.5.3 EXPECTED OUTCOMES AND DEVELOPMENT IMPACTS

The effective implementation of this STI policy will result in several outcomes and development impacts that include

6. A more competent research, STI system and regulatory environment better equipped to address Ethiopia's current and future challenges through innovation.
7. Enhanced research and STI capabilities that address the current mismatch of skills in the ecosystem and better support Ethiopia's TYDP goals and the desire to become Africa's beacon of prosperity through technology development and export-led growth.
8. Greater contribution of STI to industry, employment generation, wealth creation, inclusive and sustainable development, and GDP.
9. Strengthened STI policy governance system in Ethiopia that more effectively integrates research and industry, and enhances linkages, coordination and cooperation among NSI actors.
10. An Ethiopia that is innovation and knowledge-driven, enabled by a more conducive ecosystem for STI coupled with increased funding from private sector.

This STI policy and the implementation strategy respond to the current situation of Ethiopia, the 10-year national development plan and other relevant policies and regulatory frameworks. The policy and implementation strategy also adhere to global best practices in STI. Overall, key messages and priorities that result from the challenges in Ethiopia include the need to address gaps in human resources for STI; technology development, transfer and knowledge management; research and development (R&D) necessary to support innovation. Others are, weaknesses in Ethiopia's innovation and enterprise competitiveness, reflected in the low innovation outputs discussed later; low financial supply, investment, and incentive schemes to drive STI; quality, standards, and intellectual property; weak cooperation, partnerships and linkages among the NSI; and the need for STI alignment to environmental, social and cultural values. These STI policy priority areas, which require urgent interventions, are discussed in greater depths in the chapters that follow.



CHAPTER 02

Priority Areas, Policy Directions
and Strategies, and Goals

As discussed in Chapter 1, the GoE 2022 STI policy articulates eight priority areas for Ethiopia. These priority areas, referred to as policy directions and strategies, are made up of strategic goals alongside their respective performance strategies. The performance strategies act as the key indicators to help guide and monitor the implementation. The development of the priorities, policy directions and strategic goals, takes into account the current situation of Ethiopia and her growth trajectories as articulated in the ten-year national development plan and other relevant documents, in line with international best practices, and technological trends. This implementation strategy provides a framework and roadmap for the operationalisation of the selected eight priority areas outlined in STI policy. If effectively operationalised. The outcomes of the implementation can help Ethiopia achieve the national vision of becoming Africa's beacon of prosperity.

In the first policy direction and strategic area, Human Resource Development (HRD), four (4) goals are articulated: Goal 1 is to "Create a citizen who has developed a culture of using science, technology and innovation (STI)"; Goal 2 seeks to "Develop Human Resources for STI management Develop capable leadership on STI"; Goal 3 sets out to "Create sufficient and competent professionals in the fields of STI"; while Goal 4 addresses the need to "Develop human resources based on the future areas of comparative advantages for Ethiopia". Each goal contains specific performance strategies as a way of operationalising the objectives of the strategic area. For example, the performance strategies for Goal 1 are to a) increase public awareness of science, technology and innovation through popularisation and public awareness; and b) creating a practical science and technology education ecosystem in the overall educational system.

Like the first policy direction and strategic area, the other policy directions and strategic areas are accompanied by their respective goals and performance strategies. Together, they combine to ensure the realisation of the overall aim of the STI policy.

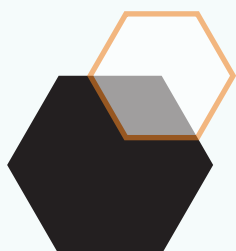
The eight priority areas (policy directions and strategies) and their respective goals, as outlined in the national STI Policy, are summarised in Table 2 below, with detailed discussions in Chapters 3 to 10. As explained above, each policy direction and strategy are accompanied by goals, while each goal has corresponding performance strategies, which are excluded from Table 2 due to space limitations.

POLICY DIRECTIONS AND STRATEGIES	GOALS
01 Human Resource Development	1. Create a citizen who has developed a culture of using science, technology and innovation (STI) 2. Develop Human Resources for STI management 3. Create sufficient and competent professionals in the fields of STI 4. Develop human resources based on the future areas of comparative advantages
02 Technology Development, Transfer and Knowledge Management	1. Increase the capacities to identify, use, improve and create technology 2. Create technology development and transfer clusters in each sector 3. Establish a National Technology Information Management a system 4. Facilitate technology accumulation and knowledge transfer
03 <i>Priority</i> Research and Development	1. Develop problem-solving research that is in line with our country's development 2. Increase the capacity of research infrastructure 3. Increase the role of the private sector in research and development
04 Innovation and Enterprises Competitiveness	1. Building Innovation Ecosystem 2. Create technology-based enterprises that are competitive at the national and international level
05 Financial Supply, Investment, Support and Incentives	1. Expand financing access for the development of STI 2. Expand various incentives for the development of STI 3. Expand trade and investment incentives to develop STI
06 Quality and Intellectual Property	1. Increase the standards of quality infrastructure institutions at the international level 2. Enhance the participation of the private sector in the implementation of quality and standards 3. Develop indigenous community knowledge and increase their utilization 4. Strengthen the intellectual property protection system that supports research and innovation

POLICY DIRECTIONS AND STRATEGIES	GOALS
07 Cooperation and Linkage	1. Increase the Benefit of International and Regional Cooperation and linkages 2. Establish effective cooperation and collaboration between local institutions
08 Environmental, Social and Cultural Development	1. Increase the role of STI in inclusive social development and cultural significance 2. Strengthen Technological Development and Control based on Environmental and Social Security

Table 2: STI Policy Priorities and Goals for Ethiopia

Source: Adapted from the National STI Policy, Ethiopia (MINT, 2022)



CHAPTER 03

Policy Direction and Strategy

1: Human Resource Development

STI POLICY CHALLENGE BEING ADDRESSED

This policy direction responds to the challenge of weak STI human resources and a widespread lack of knowledge and skills. In addition, this policy direction contributes to addressing attitudes towards the use of technologies for the advancement of STI, research and development, hinders Ethiopia's ability to more effectively harness STI for economic growth and development. Therefore, focusing on human resource development and building a future-oriented workforce is vital.

Table 3 provides the implementation framework and monitoring matrix for human resource development (Priority Direction and Strategy 1). In this table and subsequent implementation framework tables in Chapters 3 to 10, the policy direction and goals columns remain exactly as they are in the STI policy. Addition of the activities, indicators and timelines columns in this strategy provides the implementation roadmap, performance measurement indicators and outputs, and the estimated timelines for each set of activities to commence and be completed. The activities relate to the goals and the policy directions, as these must be taken together. The activities and indicators have been outlined succinctly while allowing room for adjustment and improvements by the lead implementation actor.

The timeframe needs to be read in alignment with the implementation phases above. The completion and adoption of this strategy will take the majority of 2024. Hence, 2024 is not included in the timeline as implementation will realistically start in 2025 with activities such as securing funding and finalising the programme and design of activities. The actual delivery of activities will, therefore, start as from mid to late 2025 or 2026. Some of the implementation activities proposed will need to be completed early, hence the completion dates of 2033 or 2034. This is to ensure that they are adequately captured in the final evaluation. Whereas other activities can continue until 2035 and beyond.

A lead actor accompanies each implementation framework and monitoring matrix alongside co-implementation actors and partners. This is in line with the governance framework advanced in Chapter 11 below (see Figure 8). Finalisation of lead actors would be an important activity in Phase 1 of the implementation strategy. This is essen-

tial for the delivery of the activities, monitoring, accountability and for providing leadership that ensures effective operationalisation of this strategy.

Table 3: Implementation framework and monitoring matrix for human resource development

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Create a citizen who has developed a culture of using STI	Design and deliver STI awareness projects in schools, HEIs, TVs, social media and other outlets	Design and deliver STI awareness projects in schools, HEIs, TVs, social media and other outlets	Number of awareness projects and activities implemented	2025-2035
	A practical science and technology (S&T) education ecosystem will be created in the overall educational system	Develop S&T projects to help refocus education system towards practice Include industry and TVET in the design and delivery of S&T education	Number of a) S&T education integrated into practice/industry b) industry collaboration in S&T education	2026-2033
Goal 2 Develop Human Resources for STI management	Scientific, technological and innovative leadership development activities will be conducted to create a conducive environment for job creation and satisfaction	Develop and deliver STI policy courses for leaders ²⁵ - (short and postgraduate courses ²⁶)	Number of public sector leaders trained in STI Policy (STIP)	2026-2033
	Improve leadership skills in research and development activities through favourable ecosystems and using good opportunities	Train industry (private sector) leaders on R&D and STIP Evaluate gaps in institutional capabilities that hinder R&D in key Ethiopian industries	Number of a) industry leaders capacitated in R&D and STI, b) firms with gaps in R&D capabilities addressed	2027-2034

²⁵ Policymakers and decision-makers in Ministries and Agencies – public sector focus

²⁶ Where relevant course already exists within Ethiopia, revise, update and adapt to fit the need and contexts. Courses may also be obtained from partners or international actors such as UNCTAD STI policy modules, see for example https://unctad.org/system/files/official-document/dtltstict2017d12_en.pdf, https://unctad.org/system/files/official-document/webdtltstict2016d1_en.pdf, https://unctad.org/system/files/official-document/dtltstictinf2019d2_en.pdf and <https://unctad.org/topic/science-technology-and-innovation/STI4D-Capacity>.

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 3 Create sufficient and competent professionals in the fields of STI	Enable students and teachers of HEIs to practice in development institutions, and create a mechanism for professionals working in development institutions to teach and share their experiences	Co-create a) a platform mechanism and b) programme such as the EU's Erasmus to enhance knowledge exchange and mobility between academia ²⁷ and industry	Number of students and faculty in HEIs and industry professionals that have benefited from exchange programmes	2027-2035
	Increase, enhance and accredit the quality of institutions that produce highly skilled technicians and engineers in science and technology	Increase the number of accredited a) courses and b) institutions on STI courses	Number of accredited a) courses (at national, regional and international levels) and b) institutions	2028-2035 (Accreditations take years to complete)
	Establish a system that enables citizens to access lifelong learning	Map the number of HEIs involved in the delivery of lifelong learning on STI and STEM. Support relevant HEIs, where gaps exist, in delivering lifelong learning on STI/STEM	Number of HEIs supported in strengthening their lifelong learning on STI and STEM delivery through e.g. training, equipment or mentorship	2026-2030
	Implement National programs to increase the number of researchers in the field of science, technology and innovation	Increase the number of MSc and PhD students in STI Develop a scheme dedicated to postdoctoral researchers' career advancement Increase Higher Education funding on R&D (HERD) as a percentage of GDP, and funding for research infrastructure in HEIs	Percentage increase (year-on-year) on the number of a) postgraduate students in STI, b) postdoctoral researchers' career advancement, c) HERD) as a percentage of GDP, d) funding for research infrastructure in HEIs	2026-2035

²⁷ Including Higher Education Institutions (HEIs) broadly. The objective is to foster interactions between students and faculty on the one hand and professionals in industry on the other hand

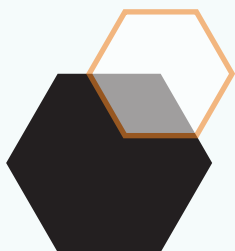
Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 4 Develop human resources based on the future areas of comparative advantages	Provide special education and training by identifying the future strategic importance of manpower needed for our country.	Refocus education, training, research and STI on priority sectors/techs (Agri-tech, Edutech, Health-tech, Manufacturing & Mining, Tourism, and Smart City) ²⁸	Number of e.g. research outputs (such as, publications) targeting priority sectors compared with the preceding year	2025-2035
	Establish a human resource development system (HRDS) for gifted and talented citizens.	Map HRDSs to identify gaps, and develop inclusivity criteria Update HRDSs with identified gaps to address inclusion	Number of HRDSs that are now compliant with inclusivity criteria and utilized by gifted and talented citizens	2027-2035
	The curriculum of higher education institutions will be designed to market needs and new scientific and technological developments.	Map STI courses in key HEI (STI) institutions to determine the ratio of misalignment with market/industry needs Develop / implement a framework for including industry in the co-creation, co-re/design and co-delivery of HEIs curriculum	Number of STI courses in HEIs that are aligned with market needs, as a percentage of increase compared to the previous year	
	Build capacity of manpower with the ability to negotiate in the field of science and technology at the international level.	Build capacity of leaders (policymakers, decision-makers and technocrats) to negotiate in the field of science and technology at the international level through short courses	Capacity of 450 (@50 per year for 9 years) policy-makers strengthened or built in STI policymaking	2026-2033

Implementation actors for Policy Direction and Strategy

1: Human Resource Development

- **Lead implementation actor(s):** Ministry of Education (MoE) and Ministry of Labour and Skills (MoLS)
- **Co-implementation actors and partners:** HEIs, private sectors.

²⁸ These are sectors and technologies of future strategic importance for Ethiopia, as identified by the government in relevant policies and regulatory frameworks and discussed/agreed with the implementation committee during the Dec 2023 workshop.



CHAPTER 04

Policy Direction and Strategy

2: Technology Development, Transfer
and Knowledge Management

STI POLICY CHALLENGE BEING ADDRESSED

This policy direction responds to Ethiopia inability to develop and transfer technologies and manage knowledge from within the countries and other countries. Effective technology development, transfer and knowledge can help ensure that innovation contributes more adequately to socioeconomic development. Strengthening innovation capabilities can support efforts to collect, analyse, store, disseminate and utilise data and technological knowledge for the benefit of Ethiopia.

Table 4: Implementation framework and monitoring matrix for technology development, transfer and knowledge management

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Increase the capacities to identify, use, improve and create technology	Develop a system for identifying, importing, adapting, using and disposing of technologies	Design and establish a National Technology Framework (NTF) ²⁹ to guide technology (including software) design, development, use and disposal Review and update of the NTF	Institutionalisation of the NTF Number of institutions that have adopted and are applying the NTF Updates at 5yr intervals	2025-2035 and beyond
	Appropriate coding and pricing will be provided for technologies	Map the number of software/coding institutions in Ethiopia to determine gaps, support needed and opportunities for economic transformation. Enhance academia-industry collaboration in software programming Mandate consumer protection, pricing and standards agencies to co-create and manage technology pricing	Number of a) software / coding institutions supported to improve their operations, and b) industry-academia collaborations in software / programming / coding education An established and operational technology pricing system for Ethiopia	2025-2026
	Identify, improve, create and develop strategic technologies that can enable the country to be competent at the international level	Include the identification of strategic and critical technologies in the NTF	Number of strategic and critical technologies developed	2025-2035

²⁹ See for example The United Kingdom's Science and Technology Framework, available at <https://www.gov.uk/government/publications/uk-science-and-technology-framework/the-uk-science-and-technology-framework>

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 2 Create technology development and transfer clusters in each sector	Develop a cluster of technologies that can be prioritised and create more employment opportunities	Map the STI clusters ecosystem in Ethiopia to determine gaps, support needed, technology focus and potentials for job creation	Number of a) clusters, b) strategic and critical technologies being developed in the clusters, c) employment resulting from (newly) developed technologies	2026-2033
	Create a cluster of technology development and transfer clusters based on market linkages and value chains	Working with industry actors, establish new (or re-organise and support existing) clusters in line with the identified set of strategic and critical technologies for Ethiopia	Number of a) new technology clusters established, b) existing clusters supported and capacitated	2026-2034
	Create a technology transfer cluster for industrial parks	Using the cluster mapping outputs, strengthen the linkage between clusters and the NSI actors	Number of clusters with improved links to other NSI actors	2025-2035
Goal 3 Establish a National Technology Information Management system	Strengthen National Technology Information Center	Evaluate the existing systems for research and STI management to determine gaps and recommend avenues for a) improvement, or b) the establishment of a new system	A well-functioning improved or new research and STI management systems	2027-2035
	Develop a legal framework for data collection, dissemination and utilization	Working with relevant actors, revise existing data policies, acts, legislations and frameworks ³⁰ to bring them in line with international standards	Number of data policies, legislations and frameworks revised/updated or developed	2026-2028
	Establish a technology knowledge management system	Incorporate technology knowledge management functions in the research and STI system developed (see above)	Number of tech, knowledge and management processes set up and implemented	2027-2035

³⁰ See for example European Commission's Data Act <https://digital-strategy.ec.europa.eu/en/policies/data-act> and <https://www.eu-data-act.com/>

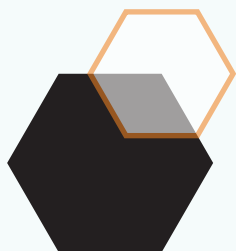
Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 4 Facilitate technology accumulation and knowledge transfer	Support for the establishment of research and dissemination units focusing on technology development in manufacturing and service delivery institutions	Strengthen research, STI and knowledge transfer from academia to industry, with a focus on priority sectors	Number of research and STI outputs disseminated to industry per year	2025-2035
	Increase the focus on technologies that enhance Ethiopia's productivity and competitiveness	Map STI ecosystem to identify technologies with the highest potentials to increase Ethiopia's productivity and competitiveness	Improved productivity, GDP and ranking in scoreboards such as the GII and Africa Innovation Outlook ³¹	2027-2035
	Establish a system for the use and development of indigenous technologies	Include guidelines for the development and use of indigenous technologies in the NTF Develop and implement academia-industry collaborations in indigenous technologies Co-create STI courses and curriculum on indigenous technologies for HEIs	NTF with guidelines on the development and use of indigenous technologies Number of STI-related courses and curriculum in HEIs on indigenous technologies delivered per year	2026-2035

Implementation actors for Policy Direction and Strategy

2: Technology Development, Transfer and Knowledge Management:

- **Lead implementation actor(s):** Ministry of Industry
- **Co-implementation actors and partners:** Ministry of Labour and Skills (MoLS), NRF, MoE, HEIs, and others.

³¹ AUDA-NEPAD (2019)



CHAPTER 05

Policy Direction and Strategy

3: Research and Development

STI POLICY CHALLENGE BEING ADDRESSED

This policy direction responds to the STI policy challenge of low research and development (R&D) needed to accelerate STI and support the levels of socioeconomic progress and transformative change that Ethiopia aspires to. An effective R&D system requires highly skilled researchers, modern research infrastructure (education, institutions, funding), and active roles by the private sector, among others. Activities outlined in this priority area contribute to addressing the gaps in research to improve Ethiopia's innovation performance and economic growth. Achieving this goal calls for capacity strengthening of research institutes in STI, improved research infrastructure, and research collaborations among industries, HEIs and research institutes. Operationalising the activities outlined under this policy direction will enhance research excellence and help ensure that research addresses the pressing development challenges of Ethiopia.

Table 5: Implementation framework and monitoring matrix for research and development

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Develop problem-solving research results that align with our country's development needs	Science, technology and innovation research will be carried out to meet the country's development needs	Commission and conduct STI and policy research that are aligned to Ethiopia's development priorities	Number of research outputs and development impacts recorded e.g. technologies and innovation resulting from research (commercialisation), etc	2025-2035
	Organize an institution that plans, evaluates and supports research activities in the country	Enhance research management in HEIs, especially universities (short-term) Establish a National Research Foundation (NRF) ³² (Short-term)	Number of research management units in HEIs strengthened NRF established	2025-2027 2027-2033
	Establish a system for monitoring the transfer of research findings and their applicability to the community.	Build the capacity of research units in selected universities to monitor research outputs against development impacts (short-term) Include this role in the mandate of the NRF (short longer-term)	Number of research units capacitated in selected universities Evidence of this function being performed by the NRF	2025-2027 2027-2033

³² Kenya and South Africa provide examples, see <https://www.nrf.go.ke/> and <https://www.nrf.ac.za/> respectively

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Develop problem-solving research results that align with our country's development needs	Establish a conducive ecosystem for research support, researchers' incentives, customs and procurement systems.	Initiate measures to urgently address gaps identified in the research systems ³³ especially in universities	Number of university research systems that have benefited from interventions as a result of this strategy	2025-2027
	Establish a national research foundation	Addressed, see above	As above	As above
Goal 2 Increase the capacity of research infrastructure	Establish central accredited laboratories to share resources and conduct modern research	Map the ecosystem for STI laboratories Strengthen existing laboratories focused on priority STI for national development Establish new labs in priority STI areas where they do not currently exist Secure (international) accreditations for laboratories	Output of mapping Number of STI labs a) strengthened, b) established and c) accredited	2026-2035
	Strengthen and improve research infrastructures (RIs)	Map and categorise RIs ³⁴ in selected HEIs, starting with universities, to establish gaps, areas for improvements and opportunities for transformation through RIs Design and implement interventions to strengthen RIs	Output of mapping Number of support interventions implemented	2025-2035

³³ See for example <https://www.acts-net.org/images/Publications/Policy-Briefs/Political-economy-insights-for-science-system-transformations-in-sub-Saharan-Africa-Policy-Brief.pdf>, <https://academic.oup.com/spp/article/46/4/620/5416172>, <https://sgciafrica.org/wp-content/uploads/2022/03/Full-Report-Updating-the-Case-studies-of-the-Political-Economy-of-Science-Granting-Councils-in-Sub-Saharan-Africa.pdf>, and https://assets.publishing.service.gov.uk/media/5ef4aace86650c1299985858/NA_report_Ethiopia__Dec_2019_Heart_.pdf

³⁴ <https://idl-bnc-idrc.dspacedirect.org/items/c7814165-94ad-4861-9fee-bb3081f75211>

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 2 Increase the capacity of research infrastructure	Allocate an adequate budget for research and development	Work with the Ministry of Finance (MoF) and other relevant agencies to increase GERD, HERD and BERD Strengthen HEIs, especially universities, ability to secure research funding	Increase in GERD and HERD year-on-year Number of HEIs with increased (capacity to secure) research funding	2025-2035
	Build the capacity for repair and inspection of scientific equipment	Identify and capacitate engineering and technical units, in selected, universities in the repair and management of RIs	Number of engineering and technical units in universities supported in RIs repairs and management	2026-2035
Goal 3 Increase the role of the private sector in research and development	Develop a support and incentive scheme for the private sector to encourage its participation in research activities	Incentivise academia ³⁵ to a) co-create and co-deliver research agenda and topics with industry (private sector), b) conduct research targeted at pressing challenges for industry	Number of research projects a) co-delivered, jointly, between academia and industry, and b) conducted for industry by HEIs	2027-2035
	Support the establishment and increase of private research institutes	Enhance the quality ³⁶ of existing universities and research institutes If lacking, establish additional universities and research institutes focused on STI	Number of research universities and institutes a) with improved quality standards and b) established	2026-2035

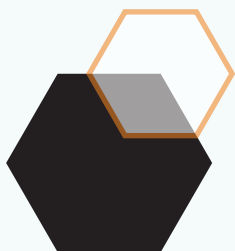
Implementation actors for Policy Direction and Strategy

3: Research and Development:

- **Lead implementation actor(s):** NRF, RI, university or consortium of universities
- **Co-implementation actors and partners:** MoH, MOA, MoE, other HEIs, MoF, Accreditation Office

³⁴ For example, through requirements for joint applications, match funding, and co-leadership

³⁵ Through avenues that include emphasising accreditations (national, regional and international), increased research outputs (publications and impacts), enhanced teaching, and student satisfaction.



CHAPTER 06

Policy Direction and Strategy

4: Innovation and Enterprises Competitiveness

STI POLICY CHALLENGE BEING ADDRESSED

This policy direction responds to a key objective of Ethiopia, which is to improve its international competitiveness. Evidence from the 2023 Global Innovation Index (GII) shows that Ethiopia ranked 125th among the 132 economies featured³⁷. The evidence also reveals that Ethiopia suffers from low innovation inputs. Progress in STI is vital to building a knowledge-based and productive economy that ensures competitive tech start-ups, high growth enterprises and creates jobs. Hence, strengthening Ethiopia's innovation ecosystem and startup ecosystem is central to realising a dynamic business environment that fosters the creation of job and economic opportunities and helps to improve the country's innovation outputs and international competitiveness.

Table 6: Implementation framework and monitoring matrix for innovation and enterprises Competitiveness

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Building Innovation Ecosystem	Establish a system for technology start-ups and innovation ecosystem that provide incentives, designation and standards, and funding or investment to start-ups and start-up ecosystem actors.	Create a national level online (digital) platform where technology (tech) start-ups and other innovation ecosystem actors can register their challenges and access services (such as designation, funds, expertise, skills), support or information Strengthen the capacity of tech start-ups in fundraising and business management and related capacities Establish and implement National funding mechanisms and systems such as National Innovation Fund (grants), Fund of Fund (FOF), and National Credit risk Guarantee Funds, for Start-up ecosystem builders such VCs and Angel investors, and innovative projects or research commercialization through	Number of technology start-ups and innovation ecosystem actors that have a) benefited from support provided via the platform, and b) been capacitated in fundraising and business management	2025-2035

³⁷ <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/et.pdf>

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Building Innovation Ecosystem		implementing R&D based (though tech) Startup and high growth businesses Create regulatory and standardisation instruments Create regulatory sandboxes Create ecosystem maturity measuring and manage its growth cycle		
	Establish market pricing and investment systems for technology start-ups	Establish or identify bodies to apply comprehensive start-up valuation mechanisms such as market, income, asset, IP covering all stages of their growth Include market pricing and investment functions in the online platform and in capital market settings	Number of tech start-ups that have benefited from the market pricing and investment functions in the online platform per year	2026-2035
	Establish a system for public and private partnerships in technological strategic areas	Include partnership function in the online platform to enable public and private collaborations in technological and market focused strategic areas. And enhance the functionality with FOF, Innovation Grants, and credit schemes the NRF, post set up	Number of actors that have benefited from the partnership functions in the online platform, per year through such as FOF, grants, Credit Grantee schemes, regulatory sandbox.	2026-2035
	Promote research-based value chain and innovation clustering system	Cluster research in universities and research institutions, startup an ecosystem builders by sectors, along Ethiopia's priority innovation topics to enhance collaboration	Number of research collaborations in universities, research institutions and private sector such as ecosystem builders and startups per year (in the clusters)	2026-2035
	Build a procurement system that promotes effective technologies that have been transformed into products and services	Utilise procurement systems in universities, research institutions, government bodies, and in funds to be established to foster innovation (short-term) Include this service in the Innovation grant, FOF, and the national procurement system's NRF's mandate (short-term)	Number of universities' procurement systems incorporating innovation per year	2026-2035

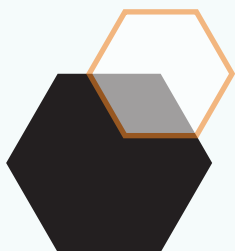
Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
	Realize a digital economy by building a digital infrastructure and enabling digital systems	developing a reliable, inclusive and interoperable infrastructure; championing adoption of digital payments; building a robust and consistent regulatory and oversight framework; and creating an enabling environment for innovation. Strengthen digital infrastructures (alongside physical infrastructures) and systems in HEIs, especially universities	Number of digital infrastructures and systems enhanced, developed or revised regulatory systems, improvement registered based on the GII and other innovation index on ICT and digital per year. Number of adopted digital payments per year, per year	2026-2033
Goal 2 Create tech-based enterprises that are competitive at the national and international levels	Establish ³⁸ special institutions that will support enterprises to increase their productivity based on technology	established championing entities to drive the growth and development of Startups and High growth enterprises, establish new or strengthen existing institutions capacity to Develop and integrate technology and enterprise support (short) courses and mentorship programmes into selected existing HEIs or other specialized public or private institutions both at federal and , at regional levels	Number of enterprises trained and/or mentored in STI areas per year	2026-2035
	Establish incentives, support and monitoring systems for exporters, those who substitute import products and technology companies expanding into other countries	Design and appropriate policy instruments e.g. R&D and tax credits schemes for export-led companies to boost productivity	Number of companies utilising and benefiting from the policy instruments	2027-2034

Implementation actors for Policy Direction and Strategy

4: RInnovation and Enterprises Competitiveness

- **Lead implementation actor(s):** Ministry of Industry and Ethiopian Investment Holdings
- **Co-implementation actors and partners:** MoLS, HEIs, Ecosystem Builders, Private Sectors, Ministry of Revenue, NBE, DBE, Ethiopian Capital Market, City and Regional STI Agencies.

³⁸ Establishment of new institutions take a long time and require more resources, hence the option to use existing institutions



CHAPTER 07

Policy Direction and Strategy

5: Financial Supply, Investment, Support and Incentives

STI POLICY CHALLENGE BEING ADDRESSED

A key reason for Ethiopia's slow progress in research and STI is inadequate investments, as shown in Table 1 (SWOT Analysis). STI activities require funding – from research and knowledge production to technology development and commercialisation. There is a strong positive correlation between high investments in R&D and economic progress, even though R&D is only one factor in the complex processes that lead to innovation and economic development. Countries on the higher spectrum of R&D investments also demonstrate greater technological advancement, innovation and economic growth. Several performance strategies in this STI policy propose the establishment of new instruments, projects or institutions. These require funding. On this backdrop, this policy direction responds to the challenge of financial supply, investments, support, and incentives needed to drive STI in Ethiopia.

Table 7: Implementation framework and monitoring matrix for financial supply, investment, support and incentives

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Expand financing access for the development of science, technology and innovation	Establish accessible, inclusive and efficient financing options for the development of science, technology and innovation	Design and implement financial policy instruments (e.g. R&D grants, tax incentives / subsidies / credits, loans, innovative public procurement) on finance to drive STI Establish STI Development Fund: e.g. Establish system such as National STI development fund to provide financial support for STI initiatives, research, and innovation; Mobilise funding from the government, development partners, private sector, and other sources, Develop guidelines and operational modalities for transparent and effective management of the fund. Strengthen Public-Private Partnership (PPP) Financing Mechanisms e.g. Incentivise and facilitate PPPs in STI development through co-financing schemes,	Number of policy instruments designed, adopted and successfully implemented to drive STI Increase in the total budget allocation for the STI Development Fund Target: At least 2% of the national annual budget allocated to the STI Development Fund by 2026 Growth in private sector investment in STI activities Target: Increase in Business Expenditure on Research and Development (BERD) as a percentage of GDP from 0.26% in 2023 to 1% by 2026. Volume of diaspora financing channelled into STI initiatives:	2025-2035

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Expand financing access for the development of science, technology and innovation	Establish accessible, inclusive and efficient financing options for the development of science, technology and innovation	risk-sharing instruments, and other mechanisms Establish platforms for regular dialogue and collaboration between the public and private sectors on STI financing. Influence Diaspora Financing for STI: e.g. Promote and facilitate the channelling of diaspora remittances and investments into STI initiatives and enterprises, engaging the Ethiopian diaspora community to mobilize resources and expertise for STI development, developing diaspora-targeted financial instruments and schemes to support STI activities. Incentivize Private Sector Investment in STI: e.g. Develop tax incentives, grants, and other fiscal measures to encourage private sector investment in R&D, technology development, and innovation; Establishing innovation challenge funds and competitive grant schemes to stimulate private sector involvement in STI. Improve Financial Literacy and Capacity of STI Actors: e.g. Providing training and advisory services to help STI actors (researchers, innovators, entrepreneurs) access and manage various financing sources; Facilitating networking and matchmaking between STI actors and potential investors/financiers Work with the MoI and relevant agencies to develop appropriate legal and financial plan to ensure annual increase of GERD to at least 2% by 2035, alongside BERD and HERD	Target: Increase in diaspora investments and remittances directed towards STI projects and enterprises by 20% from the current levels by 2026 Percentage increase in tax incentives and other fiscal measures to stimulate private sector investment in STI: Target: 20% increase in the value of tax incentives and fiscal measures for private sector STI investment by 2026 Number of STI actors trained on financial literacy and accessing various financing sources: Target: At least 10,000 STI actors (researchers, innovators, entrepreneurs) provided with financial capacity-building support by 2026 Rate of increase in GERD, BERD and HERD year on year	2025-2035
	Establish funds and foundations for scientific research, technology development, innovation and technology marketing	See establishment of the NRF above	As in above	2027-2033

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 2 Expand various incentives for the development of science, technology and innovation	Establish a risk capital system to encourage innovators and entrepreneurs	Develop and implement financial policy instruments to de-risk capital e.g. loan guarantees Establish National STI development fund to provide financial support & incentives for STI activities: e.g. Provide grants, subsidies, and other financial instruments to support R&D, technology development, and innovation activities; Establish a venture capital fund to support technology-based startups and SMEs; Provide tax incentives and other fiscal measures to encourage private sector investment in STI Mobilize and leverage diverse sources of funding for STI: eg Increase government budget allocation for STI activities, attract foreign direct investment (FDI) and development partner funding for STI projects, promote public-private partnerships to co-finance STI initiatives, Explore innovative financing mechanisms like green bonds, impact investment funds, etc. Strengthen financial institutions and instruments to support STI: e.g. Build the capacity of development finance institutions to provide appropriate financing for STI; Encourage commercial banks to offer STI-specific financial products and services; Establish an STI-focused investment promotion agency to attract domestic and foreign investment Provide targeted financial support and incentives for priority STI areas: e.g. Offer tax credits, patent box schemes, and other fiscal incentives for private sector R&D; Establish STI-focused industrial parks, technology incubators, and accelerators with associated financial support; Design STI-linked procurement policies and programs to drive innovation	Number of policy instruments designed, adopted and successfully implemented to drive STI • Increase in government budget allocation for STI activities and programs • Number of new/revise tax incentives, grants, and other financial schemes introduced to support STI • Increase in private sector investment and expenditure on R&D activities • Number of collaborative R&D projects between industry, academia, and research institutions • Number of new technology-based start-ups and spin-offs established • Increase in high-tech exports as a percentage of total exports • Improvement in Ethiopia's ranking in global innovation indices (e.g., Global Innovation Index) • Establishment of a dedicated STI fund to provide financial support for research, innovation, and technology development • Development and implementation of a comprehensive set of fiscal and non-fiscal incentives for STI activities • Number of new public-private partnership (PPP) initiatives focused on technology and innovation development • Number of SMEs and large enterprises receiving STI-related	2026-2033

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 2 Expand various incentives for the development of science, technology and innovation			financial support and technical assistance • Number of research grants and fellowships awarded to support STI activities • Number of technology transfer agreements and licensing deals facilitated • Increase in the number of patent applications and granted patents	
	Establish a system for the private sector to receive direct funding from the government for innovation development projects	Include this role in the mandate of the NRF³⁹ Establish an Innovation Development Fund: e.g. Setting up a dedicated fund to provide direct financial support to private sector entities for innovation development projects; Define clear eligibility criteria, application process, and selection mechanisms for the fund; Allocate an annual budget for the Innovation Development Fund. Introduce Innovation Grants: e.g. Design and implement a competitive innovation grant program targeting private companies and startups; Provide grants to support the development and commercialization of new products, services, or processes; Establish clear guidelines, evaluation criteria, and a transparent selection process for the innovation grants. Implement Tax Incentives for R&D and Innovation: e.g. Introduce tax credits or deductions for private sector investments in R&D activities; Provide tax holidays or reduced tax rates for businesses engaged in innovative projects or the commercialisation of new technologies; Simplify the	Number of Funding received by the private sector actors via the NRF • Number of private sector companies/enterprises receiving direct government funding for innovation development projects • Amount/value of direct government funding provided to private sector for innovation projects • Percentage increase in private sector R&D expenditure and investment in innovation • Establish a dedicated STI innovation fund to provide direct financing to private sector enterprises for innovation projects • Develop clear guidelines, eligibility criteria, application and selection process for private companies to access the STI innovation fund • Provide capacity building support to private companies on	2025-2035

³⁹ South Africa presents a good example in this regard in which government funds from the DSI are channelled via the South African NRF to other actors and stakeholders in the NSI

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
		application process and ensure timely delivery of tax incentives. Strengthen Intellectual Property (IP) Protection and Commercialisation: e.g. Enhance the capacity of the Ethiopian Intellectual Property Office to provide efficient IP registration and protection services; Introduce IP-based incentives, such as patent box regimes or IP-linked tax benefits, to encourage private sector innovation; Establish technology transfer offices at research institutions and universities to facilitate the commercialisation of research outputs. Develop an Online Innovation Portal: e.g. Create a centralised online platform to showcase innovative projects, technologies, and funding opportunities; Provide information on available government incentives, support programs, and access to innovation-related services; Facilitate networking and collaboration between private sector innovators, research institutions, and government agencies.	accessing and utilizing the STI innovation fund • Implement monitoring and evaluation mechanisms to track utilization and impact of the STI innovation fund • Introduce tax incentives and other fiscal measures to encourage private sector R&D and innovation investment • Facilitate linkages and partnerships between private enterprises, research institutions and academia to promote collaborative innovation projects • Recognise and reward innovative private enterprises through awards, prizes and public recognition programs	

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 2 Expand various incentives for the development of science, technology and innovation	Establish incentive system for researchers	Increase HERD Enhance research infrastructures (RIs) Strengthen the capabilities and skills of researchers in STI and R&D Introduce competitive research grant schemes: e.g. Establish national research grant programs to provide funding for collaborative, interdisciplinary research projects; Offer young researcher grants to support early-career scientists and encourage their participation in the STI ecosystem. Develop a researcher recognition and reward system: e.g. Implement an annual national STI awards program to recognise outstanding contributions by researchers, innovators, and technologists; Provide career advancement opportunities, such as promotions and leadership positions, for high-performing researchers; Offer competitive salaries and benefits packages to attract and retain top talent in research and innovation. Strengthen institutional support for researchers: e.g. Provide funding for research infrastructure, laboratories, and equipment to enhance the research capabilities of higher education institutions and research centres; Establish research leave and sabbatical programs to allow researchers to focus on their work without teaching or administrative duties; Offer professional development and training opportunities to improve the research, collaboration, and commercialization skills of researchers.	Rate of increase in HERD, yearly Increase in the number of RIs Number of researchers who have trained in STI • Number of researchers receiving incentives • Amount of funding/financial support provided to researchers through the incentive system • Percentage increase in research and development (R&D) expenditure as a share of GDP • Number of patent applications and granted patents • Established robust incentive system for researchers, including financial and non-financial incentives • Increased funding and investment in research and innovation activities • Improved research productivity and outputs (e.g. publications, patents, commercialized technologies) • Enhanced attractiveness of research careers and increased number of researchers • Strengthened linkages between research institutions, universities, and industry to facilitate technology transfer and commercialisation.	2026-2035

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
		Implement tax incentives and financial instruments: e.g. Introduce tax credits or deductions for businesses that invest in R&D and collaborative research projects with academic institutions; Establish innovation funds, venture capital schemes, or angel investor networks to support the commercialisation of research outcomes; Provide access to low-interest loans or grants for researchers and entrepreneurs to develop and scale up their innovations. Promote international collaboration and mobility: e.g. Facilitate research exchange programs, joint research projects, and visiting scholar programs with leading international institutions; Offer competitive fellowships and scholarships to attract talented foreign researchers to Ethiopia; Provide support for researchers to attend and present their work at international conferences and workshops. Recognise and protect intellectual property: e.g. Strengthen the enforcement of intellectual property rights to encourage researchers and innovators to commercialise their technologies; Offer IP-related training and support services to help researchers navigate the patenting and commercialisation process; Establish technology transfer offices within universities and research institutions to facilitate the commercialisation of research outcomes.		

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 3 Expand trade and investment incentives to develop science, technology and innovation	Provide various tariff, tax and related financial and investment incentives to investors who are engaged in science, technology and innovation	As in Goal 1 above, design and implement financial policy instruments (e.g. R&D grants, tax incentives / subsidies / credits, loans, innovative public procurement) on finance to drive STI Tariff Incentives: e.g. Introduce tariff exemptions or reductions on the import of scientific and technological equipment, machinery, and raw materials used for R&D and innovation activities; Provide tariff rebates or duty drawback schemes for exports of high-tech products and services. Tax Incentives: e.g. Offer tax credits or deductions for businesses investing in R&D and innovation activities; Introduce tax holidays or reduced corporate tax rates for high-tech startups and companies engaged in technology development; Provide accelerated depreciation allowances for investment in advanced manufacturing equipment and technologies. Financial Incentives: e.g. Establish a dedicated innovation fund or technology development fund to provide grants, soft loans, and equity financing to innovative enterprises and research institutions; Introduce R&D cash grants or matching funding schemes to co-finance private sector investment in strategic technology areas; Develop a venture capital or angel investment scheme to mobilize private financing for technology startups and spin-offs	Number of financial policy instruments designed, adopted and successfully implemented to drive STI • Increase in FDI inflows to STI-related sectors • Increase in business expenditure on R&D (BERD) as a percentage of GDP • Increase in number of innovation-driven enterprises and start-ups • Provide various tariff, tax, and related financial and investment incentives to investors engaged in science, technology, and innovation activities • Establish a dedicated fund/financing mechanism to support STI-related investments and enterprises • Simplify procedures and reduce administrative barriers for STI-related investments and business operations • Promote public-private partnerships and collaboration in STI-related investments and enterprises • Build the capacity of investment promotion agencies and financial institutions to better support STI-related investments	2026-2035

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
		Investment Incentives: e.g. Designate special economic zones or industrial parks with tailored incentives for STI-based investments; Offer land, infrastructure, and utilities at subsidised rates for companies establishing R&D centers or technology demonstration facilities; Provide investment facilitation services, such as one-stop-shops and aftercare support, to attract and retain high-tech foreign direct investments Regulatory Incentives: e.g. Streamline administrative procedures and bureaucratic hurdles for technology licensing, intellectual property registration, and technology commercialisation; Establish clear and predictable legal frameworks for public-private partnerships in STI development; Introduce incentives for collaboration between industry, academia, and research institutions, such as joint R&D projects or technology transfer schemes.		
	Encourage Science, technology and innovation actors who will make a significant contribution to the development of the sector	Develop and implement awareness programmes to enhance actors understanding of the role of STI in development Establish a STI Incentives and Investment Fund: e.g. Provide financial incentives and grants to encourage private sector investment in STI activities; Offer tax credits, tax holidays, or reduced tariffs for companies investing in R&D, technology development, and innovation	Number of awareness programmes and courses a) developed and b) implemented • Increase in foreign direct investment (FDI) in STI-related sectors • Increase in public-private investment in STI activities • Growth in number of technology and innovation-based enterprises • Increase in R&D expenditure by businesses (BERD)	2025-2035

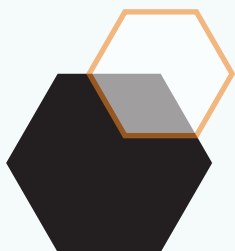
Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 3 Expand trade and investment incentives to develop science, technology and innovation		Develop an STI Investment Promotion Strategy: e.g. Identify and target strategic sectors and companies for STI-related foreign direct investment (FDI); Organize investment promotion events, roadshows, and forums to attract STI-focused FDI; Establish an STI investment one-stop-shop to facilitate investment procedures and provide aftercare services Strengthen Public-Private Partnerships (PPPs) for STI: e.g. Establish collaborative R&D programs between public research institutions and private enterprises; Provide matchmaking and networking platforms to foster PPPs in technology development and commercialization; Introduce co-financing schemes and shared-risk models to incentivise private sector participation in STI initiatives Expand Access to Finance for STI Actors: e.g. Increase the availability of venture capital, angel investment, and other alternative financing for innovative startups; Develop credit guarantee schemes to de-risk lending to STI-focused small and medium enterprises (SMEs); Partner with development finance institutions to mobilize long-term financing for STI infrastructure and projects Introduce STI-focused Trade Incentives: e.g. Provide export incentives (e.g., export tax credits, subsidies) for technology-intensive products and services;	• Establish an STI investment and incentive framework to attract FDI in STI-related sectors • Introduce tax incentives and other financial instruments to promote private sector investment in STI • Provide access to finance, business development services and infrastructure for technology-based enterprises • Strengthen linkages between industry, academia and research institutions to promote collaborative R&D Develop programs to support commercialisation of research outputs and technology transfer	2026-2035

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
		Facilitate the import of STI-related equipment, materials, and technologies through reduced tariffs or duty exemptions; Streamline customs and logistics procedures to expedite the movement of STI-related goods and services Strengthen Intellectual Property (IP) Protection and Commercialization: e.g. Enhance the capacity of the Ethiopian Intellectual Property Office to effectively register, protect, and enforce IP rights; Establish technology transfer and IP commercialisation mechanisms to facilitate the market uptake of publicly funded research		

Implementation actors for Policy Direction and Strategy

5: Financial Supply, Investment, Support and Incentives:

- **Lead implementation actor(s):** Ministry of Finance (MoF) and Ministry of Planning and Development.
- **Co-implementation actors and partners:** National Research Foundation, MoE, Ministry of Labour and Skills (MoLS), and Ethiopian Investment Commission, Ethiopian Investment Holdings, Customs Commission, Research and Development (R&D) organizations, Private sector, Chamber of Commerce, Civil Society Organisations (CSOs), International Development Partners (IDPs), The Ethiopian Diaspora Trust Fund (EDTF)



CHAPTER 08

Policy Direction and Strategy

6: Quality and Intellectual Property

STI POLICY CHALLENGE BEING ADDRESSED

Although productivity has increased over the years, quality and standardisation, have not kept pace with the increase in productivity. This policy direction responds to the challenge of quality improvements, standards and intellectual property rights (IPR), which are necessary for exports to international markets and technology development and utilisation in Ethiopia. Achieving quality and operationalising IPR regimes require capabilities (human resource development), R&D, funding, and other priorities in this implementation strategy. As a result, this priority direction is cross-cutting, highlighting the importance and relevance. Relatedly, gaps in IPR, accreditation, and monitoring highlight growing challenges that require urgent STI policy intervention in Ethiopia.

Quality and standards are needed in the research system, government and industry. Weaknesses in enforcing standards could result in the proliferation of low-quality products and services. Despite its flaws, IPR remains one of the internationally accepted innovation policy instruments that attract foreign investors and influence investment decisions. Strengthening the IPR system will contribute to addressing the gaps in quality, beneficiation and the low investments in the STI ecosystem.

Table 8: Implementation framework and monitoring matrix for quality and intellectual property

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Increase the standards of quality infrastructure institutions at the international level	Quality infrastructure focused on service delivery activities will be provided by the private sector and development agencies	Coordinate private sector and development partners to a) co-create a list of priority infrastructure and b) develop a framework for securing and provisioning the infrastructure	Number of a) infrastructure secured and provisioned, b) service delivery activities undertaken. Also, funding raised	2025-2035
	Support for in-depth and extensive research and related works for the preparation of standards and scientific metrology (SSM) focused on local research results	Commission and implement multidisciplinary research on standards and scientific metrology	Number of a) research outputs, b) capacity built in SSM And c) measurements and standards framework or guideline for Ethiopia	2026-2033

³⁹ This will include a funding plan

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
	Build strong accreditation, control and enforcement capacity to implement national quality infrastructure	Design interventions project to strengthen accreditation capacity at institutional and individual levels	Number of a) interventions implemented and b) capacities built	2026-2034
Goal 2 Enhance the participation of the private sector in the implementation of quality and standards	Establish a system to encourage enterprises that supply their products and services in the world market by meeting the required quality standards for the consumer	Design STI policy instruments that use e.g. trade tariffs, tax incentives and demand support instruments to foster quality standards and promote export	Number of a) STI Policy instruments designed and implement for standards and export, and b) beneficiaries	2025-2035
	Support the private sector to engage in industrial metrology, conformity assessment, training and technical assistance	Strengthen the capacity of private sector in standards and scientific metrology	Private sector capacity built in standards and scientific metrology	2027-2034
Goal 3 Develop indigenous community knowledge and increase their utilization	Establish a system for Indigenous community knowledge (ICK) and resources as identified through research; where they are included in the intellectual property protection system; An inclusive system will be developed in which the owners of the knowledge and resources are used and share the benefits	Commission a) research on the barriers to integrating ICK with formal scientific knowledge, and b) the co-creation of a mechanism that ensures ICK actors share from the benefits of STI. And c) develop a national policy on indigenous resources and knowledge systems (IRKS)	Completion of research and delivery of output(s), co-created ICK beneficiation mechanism, national IRKS policy	2027-2035
	Implement the system that our genetic resources and community knowledge will get the country's agreement before being used by others and to ensure that we share in the benefits	Include rights, benefits and protection for national biotechnology and genetic resources in the national IRKS policy	IRKS policy with rights, benefits and protection for Ethiopia's biotechnology and genetic resources	2027-2030

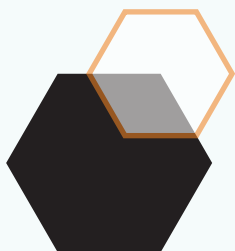
Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 4 Strengthen the intellectual property protection system that supports research and innovation	Establish a pricing system to get a loan grantee and financial transactions for intellectual property patent technologies	Review and update IP application fees ⁴¹ to improve affordability, enhance inclusivity and establish a fair pricing system. Complete signatory to the WTO, TRIPS, and other major IPR treaties	Updated IPR system, process and fees Membership of WTO, TRIPS, and other major IPR treaties	2025-2035
	Formulate an institutional intellectual property policy that will benefit researchers and innovators in industry, higher education and research institutions	In formulating the IP policy, address weakness in IPR law enforcement, ensure adequate staff and budget for EIPA, and ability to exam design applications	IP policy formulated and adopted, and strengthened EIPA	2027-2034
	Establish a research-based intellectual property protection system for exported products and services in destination countries	Establish copyright office, and develop and implement IPR in research intensive universities that are co-funded/managed by industry actor(s)	Copyright office and IPR established in selected universities that also serves the export market	2026-2033

Implementation actors for Policy Direction and Strategy

6: Quality and Intellectual Property:

- **Lead implementation actor(s):** Ministry Trade and Regional Integration, Ethiopian Intellectual Property Authority,
- **Co-implementation actors and partners:** NRF, Ethiopian Standard and Quality institutions, RI, and University or a consortium of universities, Ethiopian Educational Training Authority, HEIs, Ministry of Industry, MoLS, Ethiopia Technology Authority, WTO, WIPO.

⁴¹ See https://intellectual-property-helpdesk.ec.europa.eu/system/files/2023-06/IP-Country-Fiche_Ethiopia.pdf



CHAPTER 09

Policy Direction and Strategy

7: Cooperation, Partnership and Linkage

STI POLICY CHALLENGE BEING ADDRESSED

This policy direction responds to the STI challenge presented in the SWOT Analysis (see Table 1), which indicates gaps in international research collaboration between Ethiopia and a) the rest of the African continent and b) countries worldwide. Given the role of STI in economic development globally, improvements in Ethiopia's international cooperation in research and innovation (R&I) are vital. Areas of cooperation, partnership and collaboration will include joint R&I programmes, capacity building, knowledge co-creation and co-production, technology transfer activities, and mutual learning exercises on R&I and STI policy. Achieving the necessary cooperation level will require increased coordination and partnership between public and private institutions and effective governance arrangements.

Table 9: Implementation framework and monitoring matrix for cooperation, partnership and linkage

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Increase the benefit of international and regional cooperation and linkages	Create bilateral and multilateral agreements to establish new cooperation and linkages and strengthen existing ones based on our strategic needs	Use existing structures, such as the S&T desks in diplomatic institutions, to establish partnership and cooperation agreements in STI. Strategic needs and partners: a) Conduct strategic needs assessment, b) Identify partners and develop engagement mechanisms Develop bilateral and multilateral agreement development frameworks Implement cooperative programs: joint R&D Initiatives, exchange programs and capacity building Strengthen existing cooperation and linkages: review and strengthen a) existing agreements, b) networks and collaboration platforms Strengthen policy support and advocacy on STI	Number of partnership and cooperation agreements and linkages in STI established per year	2025-2035

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Increase the benefit of international and regional cooperation and linkages	Establish a system for the presence of technology attachés that facilitate technology transfer and development in embassies /consulates	In partnership with the Ministry of Foreign Affairs (MoFA), recruit and maintain S&T Officers at every Ethiopian embassy Recruit and train technology attachés, and develop training and orientation programmes Deploy and support technology attachés and enhance coordination Facilitate technology transfer and development initiatives, and increase support for innovation and start-ups	Number of a) S&T officers recruited per year, b) partnerships established by the officer for NSI actors	2026-2033
	Increase the participation of the Ethiopian diaspora community in the development of the science, technology and innovation sectors	1) Establish strong diaspora presence ⁴² where they currently do not exist. 2) Work with the diaspora offices and networks to ensure that STI features very prominently in their work programme. 3) MInT should engage with e.g. EDTF ⁴³ to dedicate a percentage of their funds to STI Establish diaspora engagement/outreach programme and diaspora science and technology forum Enhance diaspora-led research collaboration and involve innovation hubs and incubators Build capacity and foster knowledge transfer through a) diaspora mentorship programme and b) knowledge transfer workshops Establish a) diaspora STI investment fund and b) crowdfunding and fundraising campaigns Establish a) diaspora excellence awards and b) tax incentives and benefits on STI for the diaspora community	Number of 1) new diaspora partnerships established, and 2) diaspora offices that are actively promoting STI. And 3) amount committed to STI by EDTF and similar diaspora networks	2025-2035

⁴² And where relevant and affordable, establish a diaspora office as well. A strong presence already exists in the UK and USA, see <https://www.ethioembassy.org.uk/diaspora/>. MInT can harness the presence of the diaspora offices for progress in STI and development impacts

⁴³ The Ethiopian Diaspora Trust Fund (EDTF). Based on information on the website as of June 2024, USD2.5mil is available to fund new projects. Some of these funds could be directed towards STI for Development in Ethiopia, with long-term impacts, <https://www.ethiopia-trustfund.org/>. MInT

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
	Establish the system and organisational procedures to promote regional cooperation and harmonization with neighbouring countries	Establish or improve engagements with STI desk/programme officer in RECs e.g. SADC's Programme Officer, STI; and neighbouring countries To enhance institutional framework and STI governance, establish a) regional cooperation office and b) regional policy harmonization task force Develop and strengthen bilateral and multilateral agreements Establish joint programmes and initiatives on a) R&D and b) regional training and capacity building with neighbouring countries Develop regional infrastructure projects digital connectivity and information sharing Strengthen regional a) policy advocacy and dialogues, and b) public awareness and engagement campaigns through for example, RECs (ECA, COMESA, SADC, etc)	Number of officers actively engaged with, cooperations established, and programmes co-delivered	2025-2035
	Develop Open Science (OS) practices and cultures	Building on the 2019 National Open Access (OA) Policy⁴⁴, provide policy instruments and incentives⁴⁵ to selected HEIs on OS and OA Expedite action on the implementation of the OA policy Develop regional, continental and international partnerships in OA and OS. And join relevant networks e.g. the Africa Open Science Platform (AOSP)⁴⁶ Strengthen the capacity of NSI actors in OS and OA through education and training, access to knowledge, participation in OS and OA conferences, etc	Number of policy instruments and incentives designed and implemented Increased implementation rate of OA policy Number of OS and OA partnerships developed, and projects implemented Number of capacities built in OA and OS per year	2025-2035

⁴⁴ <https://www.codataatg.or.ke/sites/default/files/OA-Policy-11-Oct-2019.pdf>

⁴⁵ For example, funding for universities to publish in Open Access journals. Or, a mechanism that enables university-industry collaborations on Open Data

⁴⁶ <https://aosp.org.za/>

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Increase the benefit of inter-national and regional cooperation and linkages		Strengthen policy and framework national OS policy and develop OS guidelines and standards Enhance infrastructure and resources on a) OS repositories and platforms and b) open data initiatives Develop OS training programmes and build the capacity of ambassadors Design and implement OS grants, funding incentives, awards and recognition schemes Enhance engagements and collaboration through a) OS networks and communities and b) citizen science projects		
Goal 2 Establish effective cooperation and collaboration between local institutions	Promote partnerships and coordination of institutions to make their product and service available in a quality manner	Revise and update the NSI framework with a focus on rethinking the governance to enhance coordination, reduce fragmentation and improve collaboration Establish partnership frameworks and partnership, coordination office and institutional agreements Use established partnerships to develop and improve quality standards and assurance programs	A new and updated NSI framework with improved governance and clear mandates for actors	2025-2035
	Establish a legal framework for Inter-institutional and cooperative relations	Formulate and implement an STI Act ⁴⁷ that provides legal framework for cooperative relations among NSI actors Review update, and harmonise relevant regulatory frameworks to ensure alignment and enhance cooperation among institutions Implement, enforce, monitor and evaluate updated and harmonised legal frameworks Implementation Plan Strengthen inter-institutional collaboration platforms through e.g. online portals and networks		

⁴⁷ Kenya provides an example, see <https://www.nacosti.go.ke/nacosti/Docs/Information%20Centre/Science-Technology-and-Innovation-Act-No.-28-of-20131.pdf> and http://www.kenyalaw.org:8181/exist/rest/db/kenyalaw/Kenya/Legislation/English/Acts%20and%20Regulations/S/Science%20Technology%20and%20Innovation%20Act%20No.%2028%20of%202013/subsidiary%20legislation/docs/ScienceTechnologyandInnovationActNo28of2013_subsidary.pdf

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
	Strengthen cooperation and linkages to enhance national science, technology and innovation institutions competitiveness	Design and implement research and funding calls that require joint applications and delivery by academia and industry actors Develop strategic partnerships in national and international STI and R&D collaboration initiatives, infrastructure sharing, STI training programs, talent exchange and fellowships Use partnerships and cooperations established to foster innovation and technology transfer, support innovation hubs and incubators, and strengthen technology transfer offices (TTOs) Redirect STI policy and governance towards emphasis on improving cooperation and linkages, reducing fragmentation, improving advocacy, strengthening coordination structures and enhancing competitiveness	Number of research and funding calls designed and delivered, jointly	2026-2034
	Institutional linkages will be managed in the process based on the market and mutual benefit	Use the re-designed and improved NSI framework of actors and stakeholders to improve the management of the STI systems, with a vital role for the private sector Conduct market analysis and needs assessment to help determine opportunities for a) joint (industry-academia) collaborative R&D projects, b) industry-sponsored research programs, c) industry-academia workforce development and training programs and d) joint certification programs Strengthen innovation and entrepreneurship ecosystems support focusing on a) innovation hubs and incubators, and b) industry-academia entrepreneurship programs Establish market feedback mechanisms and stakeholder engagement forums	Number of research and funding calls designed and delivered, jointly	2026-2034

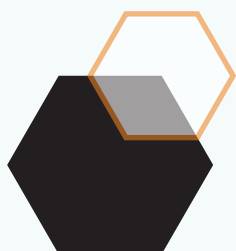
Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 2 Establish effective cooperation and collaboration between local institutions	Institutional research and product testing infrastructure as well as manpower will be made available for joint use	Develop a guideline for academia and industry to co-develop, co-locate and co-manage research infrastructure⁴⁸. With respect to funding, government can help to de-risk the financing and crowd-in funds Develop infrastructure sharing agreements, frameworks and inter-institutional research consortia that supports joint research initiatives and product testing Develop a framework to support and foster shared infrastructure training facilities and resource pooling, central infrastructure coordination and infrastructure and manpower utilisation monitoring system Develop and establish mechanisms for joint funding and resource mobilisation and allocation, resource pooling and sharing, and open access and data sharing	1) Co-created guideline on joint research infrastructure use. 2) Projects implemented based on the guideline	2025-2035

Implementation actors for Policy Direction and Strategy

7: Cooperation, Partnership and Linkage:

- **Lead implementation actor(s):** Ministry of Foreign Affairs (MoFA) and Ministry of Planning and Development
- **Co-implementation actors and partners:** Research and Academic Institutions – National Research Institutes, Universities and Technical Colleges; Industry and Private Sector – Industry Associations and Chambers of Commerce, and Technology Firms; Funding and Financial Institutions, Development Partners, Non-Governmental Organizations (NGOs) and Foundations – Research and Innovation Foundations, Advocacy and Support Organisations; Professional and Sectoral Networks – Scientific and Technical Societies, Innovation Networks and Clusters; Community and Public Engagement – Public Awareness Campaigns, Educational and Outreach Programs
- **Monitoring and Evaluation Bodies:** Evaluation and Impact Assessment Units, Auditing and Compliance Agencies.

⁴⁸ There are examples for this e.g. in the UK where the Universities of Sussex and the University of Brighton jointly run one medical school and involve the private sector (the UK's NHS and others) – see <https://www.bsms.ac.uk/index.aspx>; or, the SKA example in South Africa – <https://www.sarao.ac.za/about/ska/>



CHAPTER 10

Policy Direction and Strategy

8: Environmental, Social and Cultural Development

STI POLICY CHALLENGE BEING ADDRESSED

A core dimension of the SDGs is addressing environmental and social challenges alongside the drive for economic growth. However, efforts in Ethiopia to address environmental and social challenges have been inadequate. For example, the effective management and disposal of technologies that are developed or imported and utilised in the country remain a key area of challenge.

The inability to adequately dispose of technologies at the end of their lifetime poses a serious environmental challenge with implications for the social (e.g. health and well-being) fabric. Therefore, in addition to increasing production and productivity, technologies must be sustainably developed to ensure they do not adversely affect the environment and society. There is a need for a culture shift towards technology development, management and utilisation lifecycles that are friendlier to the environment and do not exacerbate social challenges. Implementation of this strategy will contribute to addressing this STI policy challenge.

Table 10: Implementation framework and monitoring matrix for environmental, social and cultural development

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
Goal 1 Increase the role of STI in inclusive social development and cultural significance	Public relations works are widely used to make the utilization, safety and control of technology culture in the community	Design and deliver STI public relations and awareness campaigns in schools and HEIs to promote inclusive social development and culture of STI	Number of STI awareness campaigns and activities implemented. And the number of schools and HEIs impacted	2025-2035
	Establish a system for inclusive community safety and development in science, technology and innovation development	Include and emphasise safety, privacy and ethics in the NTF and IRKS policy	Evidence of safety, privacy and ethics in the NTF and IRKS policy	2025-2035

Goals	Performance Strategy	Specific Projects and Activities	Indicators and Outputs	Timeframe
	Establish a system that increases the role of science, technology and innovation for inclusive social development	Focus STI on the SDGs ⁴⁹ Join STI policy networks such as ATPS and TIAH ⁵⁰ and initiatives such as the European Commission JRC's STI for SDGs project ⁵¹	Number of new STI for SDGs projects initiated Number of STI for SDGs networks joined and projects jointly implemented	2025-2035
	Establish a system in which women, youth and groups with special needs can participate and benefit from the development of science, technology and innovation	As in above - prioritise STI for the SDGs and design/implement projects that target e.g. SDGs 4, 5 and 10, as these promote inclusion and reduce inequality	Number of new SDGs 4, 5 and 10 projects implemented with a focus on inclusivity	2025-2035
Goal 2 Strengthen Technological Development and Control based on Environmental and Social Security	Establish a system of science, technology and innovation development activities in line with our social and cultural values	In operationalising the NTF and IRKS policy, focus STI on the SDGs. This is because the SDGs have strong environmental and social dimensions alongside the emphasis on economic growth	Number of STI policy programmes and projects focused on pressing environment and social challenges	2026-2033
	Establish a system for the use and disposal of radiation and nuclear technology	Include guidelines on the use and disposal of radiation and nuclear materials in the NTF	Evidence of guidelines in the NTF	2027-2034
	Establish a system for the use and disposal of chemical and biological technologies	Include guidelines on the use and disposal of chemical and biological technologies in the NTF	Evidence of guidelines in the NTF	2025-2035
	Establish a system for the import, utilization and disposal of technologies that have side effects on the environment and human health	Include guidelines on import, utilization and disposal of technologies with potential adverse negative impacts on the environment and health in the NTF	Evidence of guidelines in the NTF	2025-2035

⁴⁹ As shown in Section 1.1 Ethiopia is underperforming on several SDGs indicators. A greater focus of STI on the SDGs will help address several social challenges in the country

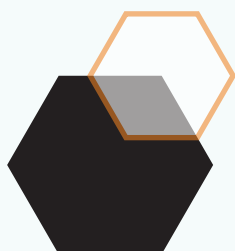
⁵⁰ African Technology Policy Studies Network (<https://atpsnet.org/>), Ethiopia is already part of this, but MINT is not the National Chapter and so can play more actor. TIAH is the Transformative Innovation Africa Hub. Ethiopia is not yet member of TIAH, <https://tipconsortium.net/tiah/>. TIAH is the Africa arm of TIPC - <https://tipconsortium.net/>. Other relevant networks include AfricaLics and SGCI, although these are not focused on STI policy primarily.

⁵¹ This initiative started with fifteen Africa countries in the first and exploratory phase. The second and detailed phase, which is ongoing, currently involve six African countries - <https://publications.jrc.ec.europa.eu/repository/handle/JRC136600>

Implementation actors for Policy Direction and Strategy

8: Environmental, Social and Cultural Development:

- **Lead implementation actor(s):** Ministry of Social and Gender Affairs, Ministry of Planning and Development, Ministry of Agriculture and Ministry of Health, Ministry of Transport and Logistics, Ministry of Industry.
- **Co-implementation actors and partners:** Ethiopia Environmental Authority, Ethiopian Technology Authority, RI, HEIs, and others.



CHAPTER 11

**Institutional Governance and Implementation
Framework of the STI Strategy**

11.1 IMPLEMENTATION ROADMAP

The contents of this session will guide the implementation of this strategy, and the overall direction of the programmes and projects designed to realise the objectives of the policy directions and strategies. As stated above the duration period for implementation is 10 years, with a mid-term review to be conducted at the half-way mark. The implementation phases and approach will be operationalised as outlined below:

Phase 1: Years 1 to 2 (2024 to 2025) – Short term

- a. Critically re/examine the strategic objectives (SOs) and decide which SOs remain priorities and deserve urgent action⁵².
- b. Assess which SOs are already being met (fully or partially) by (an)other actor or actors within the NSI and wider ecosystem.
- c. Develop the key implementation programmes (alongside the relevant projects and activities), and the Theory of Change (ToC). And agree on outcomes.
- d. Develop a detailed mapping of the lead (and supporting) implementation actors within each stakeholder groups.
- e. Confirm key delivery partners, their roles and responsibilities.
- f. Provide detailed implementation costing for each priority, produce detailed budget, confirm sources of funding, secure and allocate funding.
- g. Finalise i) monitoring, evaluation, reflection, reporting, and learning (MERRL) plan, ii) communication, and ii) governance arrangements to guide programme delivery and implementation.

Phase 2: Years 2 to 5 (2025 to 2027/8) – Medium term

- a. Commission implementation programmes and projects.
- b. Commence MERRL processes using indicators outlined in Chapters 3 to 10.
- c. Conduct a mid-term review in the 5th year of implementation and adapt implementation as necessary.

⁵¹ This re-examination is important as time has elapsed between the formulation and the start of the implementation. Some priorities may have changed due to changes in the political or economic spheres or due to technological advancements and progress. Priorities that are deemed to be less relevant and do not necessarily demand implementation action should be marked accordingly and de-prioritised.

iii. Phase 3: Years 2 to 10 (2025/6 to 2035) – Long term

- a. Continue programmes and projects delivery.
- b. Continue with the implementation of enhanced MERRL processes.
- c. Conduct final evaluation, at the end of the 10th year.

11.2 IMPLEMENTATION APPROACH AND GOVERNANCE

An important determinant of successful policy implementation is the establishment and operationalisation of effective governance system that helps ensure adequate coordination and collaboration implementation actors and stakeholder groups. A robust governance framework is also vital to reducing fragmentation and silos during implementation while improving interactive learning and innovation. The principles set out in the STI policy embeds important assumptions and anticipates that the private sector will lead and play greater roles in Ethiopia's STI ecosystem, going forward. This calls for strong coordination and cooperation among the key STI stakeholders – government, industry and academia.

Effective coordination and cooperation, underpinned by a robust governance framework and institutional arrangements, is essential for realising the expected impacts from this STI policy. In addition to ensuring effective coordination of implementation actors and stakeholders, a robust governance framework is also needed to achieve efficient allocation, disbursement and management of resources in a transparent manner; promote inclusiveness, participation and ownership of the STI policy; establish and enforce accountability measures; and support MERRL.

The implementation approach of the strategy will be based on the governance, management and coordination structure presented below (Figure 8). The implementation will be led by MInT but involve the full range of actors within the NSI and taking a whole-of-government approach. For example, the Ministry of Education (MoE) can lead Strategic Objectives (SOs) 1 – Human Resource Development, MOA, MOH & MOI will lead (SOs) 3 – R&D, and 6 – Quality and Intellectual Property. In doing this, MInT & MoE will work with industry and selected HEIs through which it can access and involve the

entire HEI ecosystem in Ethiopia. Similarly, specific strategic objectives have been assigned to the Private Sector and Government, as delivery partners and leads. This distribution and involvement of the private sector is crucial in line with the intention of the STI policy – that the private sector plays a more active role in the implementation and STI activities in Ethiopia.

Also, because two or more government entities will be involved, this will help to ensure an institutional structure and architecture within the government that fosters inclusion, reduces fragmentation and enhances the prospects of achieving a whole-of-government approach to the implementation. The figure below presents the management and coordination structure, showing the National STI Council will provide high-level programme oversight while MInT will lead the implementation and coordinate other aspects (e.g. programme management, and MERRL⁵³).

Four (4) delivery partners will be selected to drive the core programmes, that is, the SOs. In line with the principle of inclusivity and effective delivery for transformative outcomes, Delivery Partner 1, Academia and Research Institutions (RIs), will lead SOs 1, 3 and 6; Delivery Partner 2, Industry, will lead SOs 2, 4 and 5; and, Delivery Partner 3, Government, will lead SOs 5, 7 and 8. Delivery Partner 4, an external actor such as the Transformative Innovation Africa Hub (TIAH)⁵⁴ – or another innovation actor with deep knowledge of STI domains, innovation policy research and analyses, transformative change, monitoring, evaluation and learning – will lead the MERRL component of the implementation, which is a cross-cutting work programme. For this implementation to be effective and deliver the expected outcomes and impacts, a robust institutional structure, as proposed below in Figure 8, and a strong consultative framework with the key NSI actors and stakeholder groups⁵⁵ is imperative.

⁵³ The National Planning Commission is an example of a government institution with M&E experience that can lead MERRL, working academia and industry actors.

⁵⁴ TIAH coordinates a network of African countries interested in deploying STI for transformation. The core activities include transdisciplinary research, experimentation with demonstrators, evaluation for development impacts, and capacity building in STI policy. For more, see: <https://tipconsortium.net/tiah/>.

⁵⁵ Government, private sector, academia, civil society organisations and development partners.

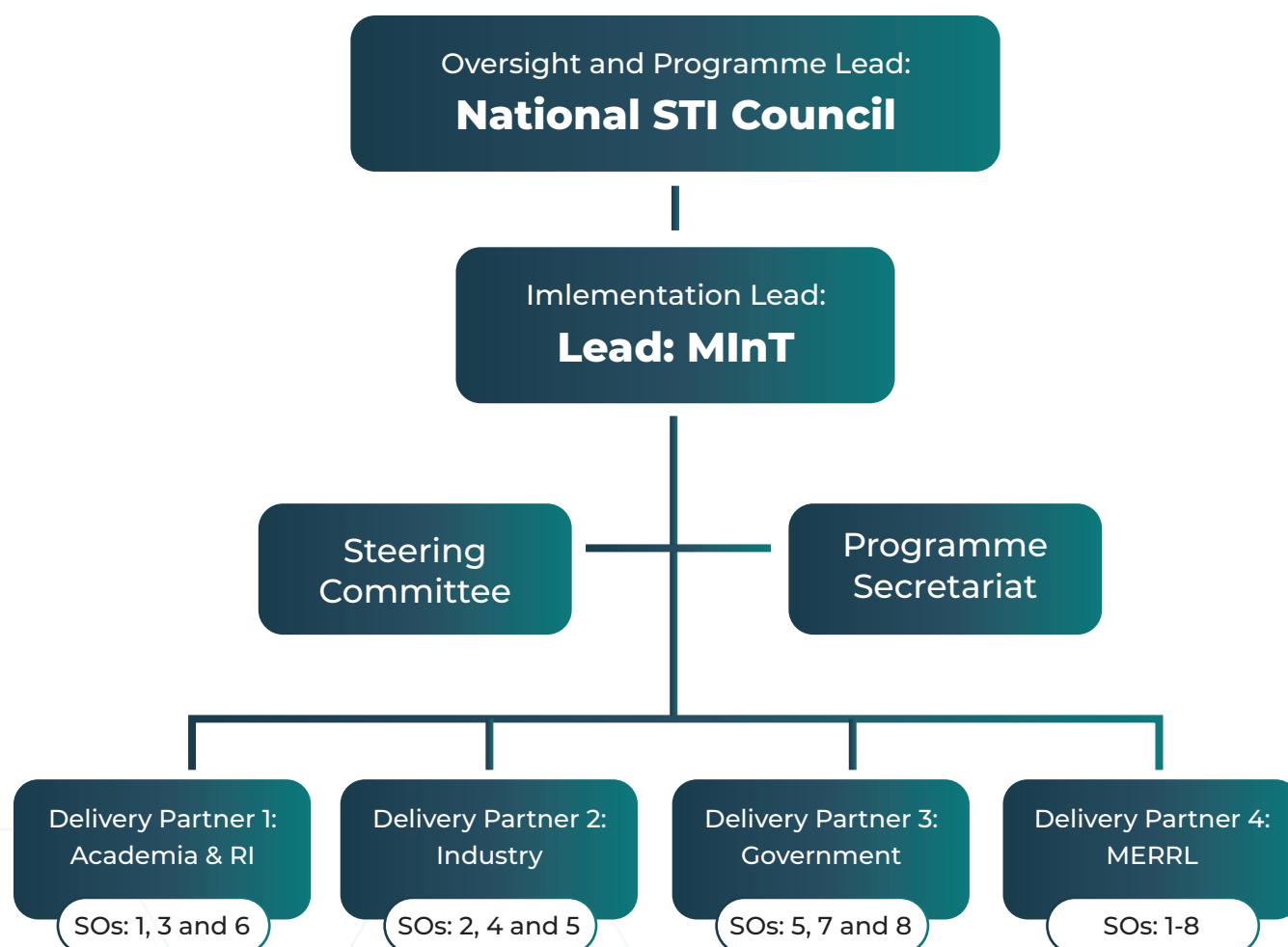


Figure 8: Governance, management and coordination structure of the implementation strategy

Operationalising the governance framework proposed above will help ensure that:

1. The implementation strategy of the policy takes into account national and international trends and foster opportunities for sustainable and inclusive development in Ethiopia.
2. This policy aligns with sectoral policies formulated by other ministries and enhances innovation outputs for Ethiopia (see Figure 7 above).
3. Technology development, utilisation and ownership by Ethiopia is prioritised.
4. Effective management, coordination and accountability measures are enforced.
5. The goals, transformative outcomes, development impacts are realised.

In this governance structure, a maximum of four (4) lead partners will be commissioned to lead the delivery of the eight (8) SOs. MInT will schedule and hold monthly review meetings with the delivery partners, and so, streamline the workload for the Ministry (MInT). In operationalising the governance structure, it is vital to note that the SOs are interlinked, with MERRL central to the implementation. Figure 9 below helps to illustrate this. Effective monitoring, evaluation, reporting, reflections and learning will be central to implementation activities and achieving transformative change. Therefore, the oversight by MInT and the STI Council, with emphasis on MERRL, will be key to the success of the implementation.

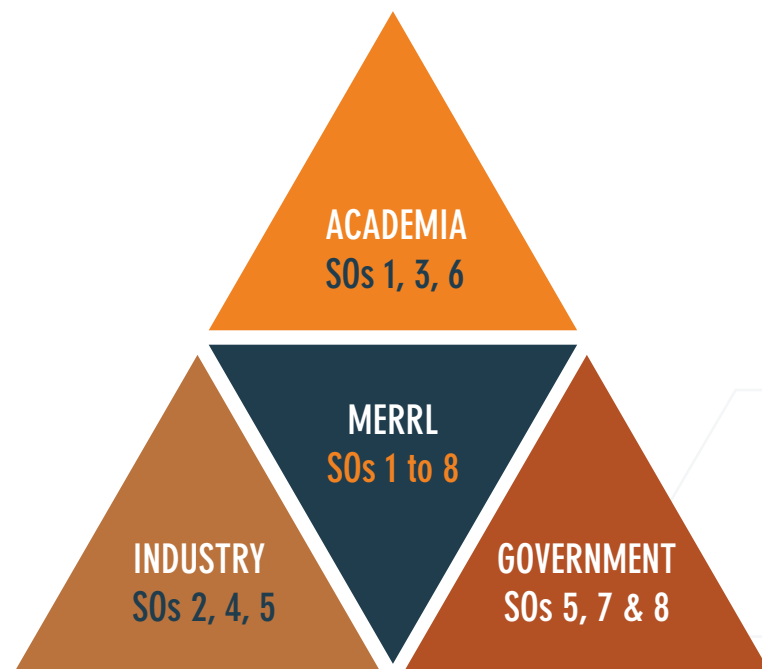


Figure 9: Interlinkages among the strategic objectives

Operationalising the strategy: projects and activities

This STI Policy supports the realization of Ethiopia's development trajectories. It emphasises actions on strategic areas that range from human resource development to research and development, innovation and enterprise competitiveness. Human resource development in this implementation strategy focuses on actions needed to help address the gaps in STI human resource, capabilities and skills, technology development and transfer, and knowledge management. As outlined in the preceding section, the operationalisation of this implementation strategy will start with developing programmes, projects and activities on each of the strategic objectives.

In this regard, this implementation strategy outlines specific activities and actions in the respective programmes and projects needed to achieve the goals of this STI policy. Effective delivery of the activities will help ensure that the GoE unlocks the potential of STI in ways that foster socioeconomic development and transformative change in Ethiopia. As outlined above, a significant proportion of the efforts in Phase 1 (2024 – 2025) will focus on programme development and reviews. The programme development and reviews will be an iterative process and be based on co-creation with multiple STI system actors in Ethiopia. Details of the programme development are presented in Chapters 3 to 10 under each policy direction and strategic objective and in this Chapter.

11.3 INSTITUTIONAL MECHANISM AND IMPLEMENTATION ACTION PLAN

To reiterate, a robust institutional architecture with supporting measures is crucial to ensure the implementation and effectiveness of the 2022 STI policy. Effective implementation of this strategy will help to address the pressing development challenges facing Ethiopia while harnessing the opportunities that exist within the ecosystem. The Ministry of Innovation and Technology (MInT), with support from other actors such as the National STI Council and Advisory Board, will provide executive leadership and oversee the implementation of the activities. In doing this, MInT and the STI Council will ensure effective governance that fosters coordination and collaboration among stakeholders and enhances participation, transparency and alignment with relevant sectoral policies and the SDGs. The specific interventions, programmes and activities that constitute the implementation framework and roadmap are outlined under each priority area in Chapters 3 to 10.

The successful implementation of this strategy will depend on effective cooperation among actors and stakeholders of Ethiopia's NSI, regional partners, and international development partners. Although MInT will coordinate the overall implementation of the programmes and activities, the majority will be undertaken by relevant NSI actors outside the government's confines. Therefore, a good governance mechanism must be implemented to ensure effective coordination of the relevant programmes, resource mobilisation, oversight and accountability, MERRL, communications and other key components of the implementation. MInT will also coordinate the development and conduct of the mid-term (five-year) and review and final evaluation plans

through effective governance and participation of stakeholders in consultative processes. Table 3 below guides the implementation, with indicator and outputs, activities, and lead actor(s) for the first policy direction and strategy – human resource development.

Leadership is vital for successful implementation. Therefore, the implementation provides for each policy direction and strategic area to led by a capable actor. It is important to note that co- implementation actors and partners will support each lead actor. For example, in the case of Policy Direction and Strategy 1 (see Chapter 3), with four goals, the lead actor will be the Ministry of Education (MoE), which will be supported by implementation partners from a) the public sector and government establishments, including the Ministry of Labour and Skills (MoLS), Ministry of Industry, b) HEIs, c) private sector, including ICT ET, and Africom Technologiesinnobiz-k, and d) international development partners involved in capacity development and skills building in STI such as World Bank, UNCTAD, and KOICA. This approach helps ensure effective implementation that is inclusive and more sustainable. And improves the prospects of better accountability, monitoring, reflections and learning. As the chapters that follow show, each policy direction and strategy in the STI policy has an implementation framework summarised in a dedicated table. The implementation framework and monitoring matrix for each policy direction (strategic pillars) are presented in separate chapters – see Chapters 3 to 10.

11.4 IMPLEMENTATION MATRIX FOR CROSS-CUTTING ACTIVITIES, EVALUATION AND LEARNING

The implementation framework, activities, and monitoring matrix for each of the eight policy directions, alongside the indicators to guide the evaluation, reporting and learning, have been presented in Chapters 3 to 10 above. The activities and indicators outlined above are specific to the policy directions and strategic objectives. However, there are other activities, which are cross-cutting. These cross-cutting activities are vital to the successful implementation of this strategy. They will also depend on various actors and stakeholders of Ethiopia's NSI, regional and international development partners working together. Over and above the leadership roles assigned to the actors in Chapters 3 to 10, which focus on the policy directions; some actors may be required to under-

take additional roles, as outlined in Table 11 below. These additional roles will be critical to the success of the implementation strategy.

As described in the preceding chapters above, MInT and the STI Council will coordinate the implementation of actors, programmes and activities. However, several implementation activities will take place outside the government's confines. Therefore, an efficient governance mechanism must be put in place to ensure effective delivery of the cross-cutting activities that include coordination⁵⁶, resource mobilisation, oversight and accountability, MERRL, communications and capabilities-building aspects of the implementation. MInT will, in addition, coordinate the development and conduct of the mid-term (five-year) and review and final evaluation through effective governance and participation of stakeholders in consultative processes.

It is important to reiterate that MERRL are central to this implementation strategy, hence included in Table 11 above, for emphasis. Inclusion of reflection time and space for policymakers in the implementation strategy helps to ensure that policy learning is effectively captured and utilised. And that lessons learnt are used to keep the STI Policy up-to-date, in line with the fast-paced changes that typify our modern world. Table 11 below provides a guide implementation matrix for the indicative cross-cutting activities, with roles and responsibilities proposed.

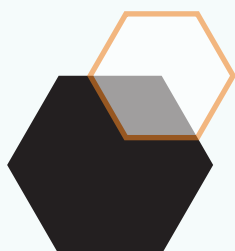
Table 11: STI policy implementation matrix for cross-cutting programmes and activities

Strategic focus	Key activities	Lead Institution(s)	Supporting Institution(s)	Development Partner(s)
Implementation Oversight	- Oversee governance (of actors, activities, projects) - Coordination	MInT	STI Council, MoPD, other MDAs, private sector	ITC, UN, WB, EC, GIZ, USAID, FCDO
Research and Evidence	- Conduct research, inform evidence - Capacity building	Academia - key universities, RI, based on the NSI	MINT, MOA, MOH, MOE, MOPD, MOI	UNDP, UN agencies, private sectors, etc
R&D	Design, conduct and report on RDI activities	NRF, Private sector, academia and RIs	MINT, MoPD, RI, & Academia	Partners

⁵⁶ Coordination of the relevant programmes, projects, activities, actors and stakeholders.

Strategic focus	Key activities	Lead Institution(s)	Supporting Institution(s)	Development Partner(s)
Indicators and policy instruments	Development of indicators and policy instruments to guide MERRL	MOPD, MINT, Academia, & RIs	All government and Private sectors	Partners
Data and information gathering	Collect, analyse, store data and info to inform MERRL	Academia & RIs, private sectors	MInT, all government institutions, Regional Agencies	Government and partners
MERRL	- Monitor/track, evaluate, report - Capture, document and disseminate learning	Mid-term (internal): NSTIC, MInT Final evaluation: External actor ⁵⁷	All stakeholders	All development partners
Funding: advice on funding and support with implementation	- Resource mobilisation - Secure, allocate, disburse funds for implementation	- MInT - MoF - MoPD	Private sector MOE, MOH, MOA, RIs, academia	ITC, UN, WB, EC, GIZ, AfDB, other partners
Funding sources	- Provide funds for implementation - Allocating budget from GDP by the government	- GoE: MInT, MoF, Regional governments - Industry - Ethiopia - Development partners	Private sector, AfDB	Development partners
Public-Private (P-P) sector linkage	Strengthen P-P sector linkage, and academia linkages	Private sector, MInT	NSTI Council, etc	All partners
Mainstreaming Gender and inclusion	Ensure that gender concerns are addressed in the implementation	CSOs	Ministry of Gender and Social Affairs	All partners
Engagement with CSOs	Promote STI at local levels	CSOs	Regional governments	All partners
Alignment with the SDGs and sectoral policies	Ensuring alignment with the SDGs and other sectoral policies	MoPD, MInT	Regional Planning Bureau	All partners
Capabilities building	Oversee capacity building and training	Academia	Government, Industry and Development Partners	All partners
Communication	- Communication - Dissemination	MCIT	Ministry of Communication service, Media	Media - Private and Public

⁵⁷ For example, TIAH, TIPC, Academia, Technopolis or other external organisation with STI policy review and evaluation capabilities.



CHAPTER 12

Funding

12.1 POLICY DIRECTIONS, FUNDING, AND BUDGET

While the Government of Ethiopia (GoE) 2022 STI policy outlines the plan of action for the country, this strategy implementation puts this plan into operation. However, for the implementation to be effective, funding must be in place. As noted in Chapter 1, funding for STI and R&D in Ethiopia has remained low and below the 1% of GDP threshold, which is recommended by the African Union Commission. The funding requirements of this implementation strategy will run into millions of US dollars. Therefore, a portfolio of funding and finance instruments will be required to operationalise the implementation of this strategy.

The availability of funds and allocation of such funds in adequate measures and promptly, will determine the quality, effectiveness and success of this implementation strategy. Therefore, a key activity in the first year of this implementation is for the GoE to secure funding commitments from various sources. With this, we guarantee that funding will be available and on a sustainable basis to finance the implementation. Following this assurance of financial resources, the GoE will establish specific funding instruments. Other activities for the GoE (led by MInT and MoF) that are needed to ensure the availability of funding to enable the implementation of this strategy are outlined in the National STI Policy and below.

For example, blended finance, which refers to the “strategic use of development finance and philanthropic funds to mobilise private capital flows at scale, by combining investors with different financial return expectations – from concessional to market rates – to access greater levels of capital than on a standalone”⁵⁸ can be relevant in this context. In this regard, blended finance instruments can be used to leverage concessional debt and other types of finance that help crowd in private capital and other funding sources or to de-risk funds secured in the form of loans and investments and lower loan and borrowing costs.

Achieving the portfolio of funding and finance instruments for the implementation will require a combination of several types and sources, including public funds from the GoE and partner governments from outside of Ethiopia⁵⁹, private investment,

⁵⁸ JET Implementation Plan 2023–2027, p. 14,

<https://www.stateofthenation.gov.za/assets/downloads/JET%20Implementation%20Plan%202023-2027.pdf>

⁵⁹ Such as the government of The Netherlands, which is one of the funders of development this implementation strategy.

debts/loans and borrowing options from e.g. the World Bank, and grants from International Development Partners (IDPs)⁶⁰ – such as the International Trade Centre, European Commission, and the United Nations – and Development Finance Institutions (DFIs), Multilateral Development Banks (MDBs), philanthropies, corporate social investments, impact investors, and commercial investors. Table 12 outline the proposed budget.

Table 12: Proposed Budget

	Policy Direction and Strategic Objective	Goals	Lead Actor	Budget in USD
1	Human Resource Development	1. Create a citizen who has developed a culture of using science, technology and innovation (STI) 2. Develop Human Resources for STI management 3. Create sufficient and competent professionals in the fields of STI 4. Develop human resources based on the future areas of comparative advantages	MOE & Academia NRF	600 Million USD
2	Technology Development, Transfer and Knowledge Management	1. Increase the capacities to identify, use, improve and create technology 2. Create technology development and transfer clusters in each sector 3. Establish a National Technology Information Management a system 4. Facilitate technology accumulation and knowledge transfer	Industry/NRF MoI/MInT MInT/NRF Industry	450 Million USD
3	Research and Development	1. Develop problem-solving research that is in line with our country's development 2. Increase the capacity of research infrastructure 3. Increase the role of the private sector in research and development	RI & Academia/NRF MInT/NRF/RI/Academia MInT/MOI, EIC	4.1 Billion USD
4	Innovation and Enterprises Competitiveness	1. Building Innovation Ecosystem 2. Create technology-based enterprises that are competitive at the national and international level	MInT/MoI Industry	1 Billion USD
5	Quality and Intellectual Property	1. Expand financing access for the development of STI 2. Expand various incentives for the development of STI 3. Expand trade and investment incentives to develop STI	MoF/Industry MoF/Industry Industry/MoF, MoTRI	150 Billion USD

⁵⁹ With the need to development research and STI infrastructure as part of the objective of this STI policy, IDPs such as the European Investment Bank (EIB), European Bank for Reconstruction and Development (EBRD), Development Finance Corporation (DFC) (USA), British International Investment (BII) (UK) and Private Infrastructure Development Group (PIDG) UK could be potential actors to consider and approach.

	Policy Direction and Strategic Objective	Goals	Lead Actor	Budget in USD
6	Financial Supply, Investment, Support and Incentives	1. Increase the standards of quality infrastructure institutions at the international level 2. Enhance the participation of the private sector in the implementation of quality and standards 3. Develop indigenous community knowledge and increase their utilization 4. Strengthen the intellectual property protection system that supports research and innovation	MOF/MOPD	350 Million USD
7	Cooperation, Partnership and Linkage	1. Increase the Benefit of International and Regional Cooperation and linkages 2. Establish effective cooperation and collaboration between local institutions	MoFA, Government MInT/NRF	50 Million USD
8	Environmental, Social and Cultural Development	1. Increase the role of STI in inclusive social development and cultural significance 2. Strengthen Technological Development and Control based on Environmental and Social Security	Government	100 Million USD
Total				6.8 Billion USD

12.2 SOURCES OF FUNDING

As outlined above in Section 12.1, one of the first activities to be undertaken in this strategy is securing and allocating financial and other resources to enable implementation (Implementation Phase 1). A significant part of 2025 will be dedicated to this activity and related activities in Implementation Phase 1. Table 13 below provides a summary of the possible sources of funding for implementation of this strategy.

Table 13: Possible Sources of Funding for Implementation

Funding Source	Stakeholder group
Ethiopia	• Government: including Ministry of Finance, MInT and the NRF • Industry • Academia, RIs • Others: e.g. philanthropies, Diaspora, and donations
Africa	• AfDB • UN agencies • RECs: ECA, COMESA
International	• WB/IFC • UN agencies • EU • GIZ • Private Sector: including actor such as Mastercard and the Gates Foundation

REFERENCES

- AfDB (African Development Bank) (2024). African Economic Outlook, 2024. AfDB, https://www.afdb.org/sites/default/files/2024/06/06/aeo_2024_-_country_notes.pdf
- AUDA-NEPAD (2019). African Innovation Outlook 2019, AUDA-NEPAD, Johannesburg, <https://au.int/en/documents/20200213/african-innovation-outlook-iii>
- Daniels, C., Tacheba, B. and Kane, M. (2024). Handbook on How Countries can Formulate and Implement Effective Research and Innovation Policies and Strategies, Organisation of African, Caribbean and Pacific States (OACPS), https://oacps-ri.eu/wp-content/uploads/Handbook_MLE-RI-policies.pdf
- Daniels, C., J. Schot, J. Chataway, M. Ramirez, E. Steinmueller and L. Kanger (2020), Transformative Innovation Policy: Insights from Colombia, Finland, Norway, South Africa, and Sweden, In Innovation policy at the intersection Global debates and local experiences, Cele MBG, TM Luescher and AW Fadiji (eds.), HSRC, <https://www.hsrcpress.ac.za/books/innovation-policy-at-the-intersection>
- FDRE (Federal Democratic Republic of Ethiopia) (2020). A Homegrown Economic Reform Agenda: A Pathway to Prosperity, https://www.mofed.gov.et/media/filer_public/38/78/3878265a-1565-4be4-8ac9-dee9ea1f4f1a/a_homegrown_economic_reform_agenda_-_a_pathway_to_prosperity_-_public_version_-_march_2020-.pdf
- EIT (European Institute of Innovation and Technology) (2021). EIT Regional Innovation Scheme Implementation Framework 2022-2027, https://eit.europa.eu/sites/default/files/eit_ris_implementation_framework_2022-2027.docx__0.pdf
- GIZ (Deutsche Gesellschaft für internationale Zusammenarbeit), (2023). Framework for the implementation of the STI policy of Ethiopia
- Matusiak, M., Radovanovic, N., Nauwelaers, C., Kaczkowska, K. and Kramer, J., (2022). Smart Specialisation implementation framework for the EU Enlargement and Neighbourhood Region. EUR 31018 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-49360-0, doi:10.2760/056593, JRC128028.
- OECD (2020), "An implementation framework for effective change in schools", OECD Education Policy Perspectives, No. 9, OECD Publishing, Paris, <https://doi.org/10.1787/4fd4113f-en>.

- RSA (Republic of South Africa), (2022). Science, Technology and Innovation Decadal Plan 2022-2032, <https://www.nrf.ac.za/wp-content/uploads/2023/06/S-TI-Decadal-Plan-2022-23-14Dec22.pdf>
- UNCTAD (2020). Science, Technology and Innovation Policy Review: Ethiopia, <https://unctad.org/publication/science-technology-and-innovation-policy-review-ethiopia>
- UNDP (2022). Ethiopia 2030: A Country Transformed? Options for A Next Generation of Reforms. Working Paper Series | No.2 | 2022, https://www.undp.org/sites/g/files/zskgke326/-files/2023-03/UNDP%20Ethiopia_Working%20paper%20series%202.pdf
- WBG (World Bank Group) (2024). Ethiopia Country Climate and Development Report, Washington, DC: World Bank, <http://hdl.handle.net/10986/41114>
- WIPO (World Intellectual Property Organization) (2023). Global Innovation Index 2023: Innovation in the face of uncertainty. Geneva: WIPO. DOI:10.34667/tind.48220

ANNEXES

Annex 1: List of actors and stakeholder groups consulted

The following actors and stakeholder groups were consulted, in addition to the members of the STI Policy Implementation Steering Committee

United Nations International Trade Centre NTF V Project

Martin Labbe,

Ntf V Tech Project Manager

Cathy Sall,

Ntf V Tech Associate Programme Officer

Samuel Fekade Lakew,

Ntf V National Coordinator

Prof Chux Daniels,

International Consultant

Annex 2: Members of the STI Policy Implementation Steering Committee

1. Dr. Solomon Belay Tessema
2. Dr. Abiyot Bayou
3. Dr Amare Matebu
4. Dr Habtamu Abera
5. Dr Hailu Dadi
6. Dr. Bekuretsion Alemayohu
7. Dr. Teklemariam Tessema
8. Mr Leul Seyum
9. Mr Selamyhun Adefrs
10. Mr Nureleng Koku
11. Mr Ayalneh Lemma
12. Mr Taye Estifanos
13. Mr Azmach Desalegn

Annex 3: Ethiopia GII Rank 2023 and Indicators

Ethiopia

GII 2023 rank

125

Output rank	Input rank	Income	Region	Population(mn)	GDP, PPP\$(bn)	GDP per capita, PPP\$			
109	130	Low	SSA	123.4	347.8	3,434			
		Score/ Value	Rank			Score/ Value	Rank		
 Institutions		32.7	116	 Business Sophistication		14.7	130		
1.1	Institutional environment	18.6	123	5.1	Knowledge workers	5.0	128	◇	
1.1.1	Operational stability for businesses*	17.4	126	5.1.1	Knowledge-intensive employment, %	○	4.4	121	
1.1.2	Government effectiveness*	19.8	103	5.1.2	Firms offering formal training, %	○	20.8	77	
1.2	Regulatory environment	49.0	103	5.1.3	GERD performed by business, % GDP	○	0.0	86	
1.2.1	Regulatory quality*	18.0	123	5.1.4	GERD financed by business, %	○	1.5	90	
1.2.2	Rule of law*	22.0	101	5.1.5	Females employed w/advanced degrees, %	○	0.3	126	
1.2.3	Cost of redundancy dismissal	19.1	83	5.2	Innovation linkages	12.8	108		
1.3	Business environment	30.5	[99]	5.2.1	University-industry R&D collaboration'	○	33.4	90	
1.3.1	Policies for doing business*	30.5	105	5.2.2	State of cluster development'	○	19.1	114	
1.3.2	Entrepreneurship policies and culture:	n/a	n/a	5.2.3	GERD financed by abroad, & GDP	○	0.1	48	●
				5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	106		
				5.2.5	Patent families/bn PPP\$ GDP	0.0	95	○ ◇	
 Human Capital and research		8.0	[131]	5.3	Knowledge absorption	26.2	[99]		
2.1	Education	18.6	[130]	5.3.1	Intellectual property payments, % total trade	0.0	111		
2.1.1	Expenditure on education, % GDP	3.7	82	5.3.2	High-tech imports, % total trade	9.8	40	● ◆	
2.1.2	Government funding/pupil, secondary, % GDP/cap	○	17.0	5.3.3	ICT services imports, % total trade	1.8	43	●	
2.1.3	School life expectancy, years	n/a	n/a	5.2.4	FDI net inflows, % GDP	2.9	48	●	
2.1.4	PISA scales in reading, maths and science	n/a	n/a	5.2.5	Research talent, % in businesses	○	2.2	76	
2.1.5	Pupil-teacher ratio, secondary	○	43.7	124					
2.2	Tertiary education	4.1	[123]	 Knowledge and technology outputs		17.9	84	◆	
2.2.1	Tertiary enrolment, % gross*	○	10.4	113	6.1	Knowledge creation	19.2	56	● ◆
2.2.2	Graduates in science and engineering, %	n/a	n/a	6.1.1	Patents by origin/bn PPP\$ GDP	○	0.0	127	◇
2.2.3	Tertiary Inbound mobility,%	n/a	n/a	6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	n/a		
2.3	Research and development (R&D)	1.4	96	6.1.3	Utility models by origin/bn PPP\$ GDP	○	1.3	19	● ◆
2.3.1	Researchers, FTE/mn pop.	○	90.5	90	6.1.4	Scientific and technical articles/bn PPP\$ GDP	18.1	40	● ◆
2.3.2	Gross expenditure on R&D, & GDP	○	0.3	81	6.1.5	Citable documents H-index	9.7	81	◆
2.3.3	Global corporate R&D investors, top 3, mn USD	0.0	40	○ ◇	6.2	Knowledge impact	24.1	79	◆
2.3.4	QS university ranking, top 3*	0.0	71	○ ◇	6.2.1	Labor productivity growth, %	4.0	8	● ◆
 Infrastructure		12.1	132	○ ◇	6.2.2	Unicorn valuation, % GDP	0.0	48	○ ◇
3.1	Information and communication technologies (ICTs)	17.0	[130]	○ ◇	6.2.3	Software spending, % GDP	0.0	130	○ ◇
3.1.1	ICT access*	9.9	131	○ ◇	6.2.4	High-tech manufacturing, %	○	13.5	81
3.1.2	ICT use*	9.8	131	○ ◇	6.3	Knowledge diffusion	10.2	108	
3.1.3	Government's online service*	30.7	122		6.3.1	Intellectual property receipts, % total trade	0.0	112	
3.1.4	E-participation*	17.4	125	◇	6.3.2	Production and export complexity	37.8	96	
3.2	General infrastructure	8.8	126		6.2.3	High-tech exports, % total trade	0.2	112	
3.2.1	Electricity output,GWh/mn pop.	○	134.8	119	6.2.4	ICT services exports, % total trade	1.2	81	
3.2.2	Logistics performance*	n/a	n/a		6.2.5	ISO 9001 quality/bn PPP\$ GDP	0.3	129	◇
3.2.3	Gross capital formation, % GDP	22.2	79		 Creative outputs		4.5	[126]	
3.3	Ecological sustainability	10.5	125		7.1	Intangible assets	2.1	[127]	
3.3.1	GDP/unit of energy use	5.5	114		7.1.1	Intangible asset intensity, top 15, % Trademarks by origin/bn PPP\$ GDP	○	5.5	120
3.3.2	Environmental performance*	21.9	103		7.1.2	Global brand value, top 5,000, % GDP Industrial designs by origin/bn PPP\$ GDP	0.4	66	● ◆
3.3.3	ISO 14001 environment/bn PPP\$ GDP	0.1	131	○ ◇	7.1.4		n/a	n/a	
 Market Sophistication		19.8	114		7.2	Creative goods and services	0.4	[126]	
4.1	Credit	n/a	n/a		7.2.1	Cultural and creative services exports, % total trade	0.0	104	
4.1.1	Finance for startups and scaleups'	n/a	n/a		7.2.2	National feature films/mn pop. 15-69	n/a	n/a	
4.1.2	Domestic credit to private sector, % GDP	n/a	n/a		7.2.3	Entertainment and media market/th pop. 15-69	n/a	n/a	
4.1.3	Loans from microfinance institutions, % GDP	n/a	n/a		7.2.4	Creative goods exports, % total trade	0.1	108	
4.2	Investment	0.4	111	○ ◇	7.3	Online creativity	13.6	103	◆
4.2.1	Market capitalization, % GDP	n/a	n/a		7.3.1	Generic top-level domains (TLDs/th pop. 15-69	0.0	131	○
4.2.2	Venture capital (VC) investors, deals/bn PPP\$ GDP	0.0	93	◇	7.3.2	Country-code TLDs/th pop. 15-69	0.0	132	○ ◇
4.2.3	VC recipients, deals/on PPP\$ GDP	0.0	95	◇	7.2.3	GitHub commits/mn pop. 15-69	1.2	113	
4.2.4	VC received, value, % GDP	0.0	98		7.2.4	Mobile app creation/on PPP\$ GDP	53.3	99	
4.3	Trade, diversification and market scale	39.3	105	◆					
4.3.1	Applied tariff rate, weighted avg.%	○	12.1	127					
4.3.2	Domestic industry diversification	○	88.9	52					
4.3.3	Domestic market scale, bn PPP\$	347.8	55	● ◆					

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; ' a survey question. ○ is used when the available economy data are older than the base year; see appendices for details, including the year of the data, at wipo.int/gii-ranking. Square brackets [] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

Annex 4: National STI Council – Members and Main Tasks

Based on the 2010 STI Policy, the proposed S&T council members are:

- i. The Prime Minister - Chairperson
- ii. The Minister of Science, Innovation & Technology - Member & Secretary
- iii. Other members
 - a. The Economic Advisor to the Prime Minister
 - b. The Minister of Foreign Affairs
 - c. The Minister of Plan and Development
 - d. The Minister of Finance
 - e. The Minister of Industry
 - f. The Minister of Trade & Regional Integration
 - g. The Minister of Agriculture
 - h. The Minister of Urban Development and Construction
 - i. The Minister of Education
 - j. The Minister of Health
 - k. The Minister of Mines
 - l. The Minister of Water and Energy
 - m. The Minister of Transport and Logistics
 - n. The Minister of Government Communication Affairs Office
 - o. Three renowned scientists, selected on their merit
 - p. Three renowned Individuals from the private sector

Source: Ethiopia National STIP 2010, <https://faolex.fao.org/docs/pdf/eth209515.pdf> (pp 15-16)

The main tasks of the National STI Council are to:

- Debate on the selection, prioritization and adoption of national research programs.
- Debate and approve the research projects as scrutinized and submitted by MInT from all sectors.
- Monitor and evaluate the pace at which technological adaptation takes place in all national priority programs.
- Decide upon the amount of budget share per GDP for STI.
- Guide and decide on the areas and the pace at which Ethiopia is creating competent STI personnel.
- Approve the country's medium and long-term S&T plan.
- Approve the establishment of S&T foundations, academies, innovation funds etc.
- Approve different STI guidelines.

Source: Ethiopia National STIP 2010, <https://faolex.fao.org/docs/pdf/eth209515.pdf> (p.16)

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