# CSIR STRATEGIC PLAN
## ABRIDGED VERSION

GOAL:
Promoting accelerated socio-economic development through research and innovation, technology transfer and training in partnership with the private and public sectors.

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2023 - 2027

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# EXECUTIVE SUMMARY

The mandate of the CSIR involves generating and applying innovative technologies, and efficiently and effectively exploiting S&T for socio-economic development in critical areas of agriculture, industry, environment, some aspects of public health and social sciences, and improving the scientific culture of civil society in Ghana; with the ultimate goal of promoting accelerated national development. Its vision is to use the transforming power of Science & Technology for wealth creation. The CSIR is therefore on a mission to become the force for accelerated social and economic development of Ghana. The development of a 5-Year Strategic Plan was initiated as part of efforts to stimulate synergies amongst the CSIR Institutes, speed up the achievement of its goal in real time with the resultant effect of increasing the contribution that the CSIR makes to national development. A situational analysis of the Council was undertaken which led to the identification of four (4) strategic thrusts, with well-defined objectives, targets and a robust monitoring and evaluation framework which, when diligently pursued, would enable the Council make significant impact. A summary of these are as outlined below:

## Private Sector Driven R&D and Technological Innovation

**Objective**: To develop and transfer at least three industry-driven technologies (of relevance to the local economy) per Institute per year, leading to the publication of at least three scientific papers per Institute per year in reputable journals.

**Targets:**

At least,

- 195 industry-relevant technologies developed, validated and adopted by industry
- 195 scientific papers published
- 35 staff trained in specialised areas to drive technology development

## CSIR Re-Branding and Visibility Improvement

**Objective**: To ensure that the CSIR is positively visible through weekly appearances in the print and electronic media; and enjoys significant goodwill from its identified stakeholders through a one contact-hour bimonthly interaction.

**Targets:**

At least,

- 130 PPP arrangements operationalised
- 52 stakeholder interests addressed annually
- 140 different types of promotional materials distributed to at least 375 stakeholders
- 140 appearances in Radio/TV talk show programmes
- 280 feature articles published
- 15 public events organised
- CSIR Webometrics Ranking improved from 6368 to 500

## Financial Resource Mobilisation

**Objective**: To generate at least 30% of annual recurrent expenditure by 2027 through: Attraction of funding for at least one project per team of five (5) Research Scientists per year; Bidding for at least one consultancy service per year per Institute; &Attraction of at least one private sector

funding per Institute for technologies that address specific private sector needs.

**Targets:**

At least,

- $ 306.37 m attracted from submission of winning proposals
- GHC 413.60 m attracted into IGF with a breakdown as follows:
    - GHC 150.110 m attracted through provision of consultancy services.
    - GHC 165.00 m attracted through technology development and transfer for industrial solutions.
    - GHC 97.50 m generated from sale of research by-products
- $20 m attracted into CSIR Endowment Fund
- GHC250 m added to STI fund.
- 130 CSIR Technologies patented & commercialised
- 2675 CSIR staff trained in relevant entrepreneurial skills.

## Staff and Systems Performance Improvement

**Objective**: To get 80% of the workforce to be passionate, results-oriented, positive- and ethically-minded enough to pursue the CSIR vision.

**Targets:**

- M&E System enhanced, with adequate staff and resources.
- 15 performance assessment reports: 5 each on CSIR systems, staff and activities.
- At least 1780 CSIR staff benefit from more attractive incentive, loan and award schemes
- At least 2850 staff opinions taken into consideration in decision making
- At least 2,850 staff promoted at due time
- At least 2,850 staff benefit from professional development support.

A stakeholder analysis unearthed the need to develop a robust stakeholder management plan for the CSIR as part of its strategic plan. The objective is to improve CSIR visibility by ensuring that all identified stakeholders have at least one specific interest addressed; and the targets are, at least:

- 25 Promoters involved in decision making bodies of CSIR
- 50 impact activities creditable to promoters' lobbying or funding support activities or promoting access to opportunity.
- 20 Latents become effective promoters.
- 60 Defenders become effective goodwill ambassadors/supporters of CSIR Goal and Vision
- 20 Apathetics become effective Defenders of CSIR Goal and Vision.

# CHAPTER 1

# INTRODUCTORY BACKGROUND INFORMATION

## 1.1. The CSIR and its Institutes

The Council for Scientific and Industrial Research (CSIR), is the foremost public Science and Technology (S&T) Research Institution in Ghana. The CSIR generates and applies innovative technologies, and efficiently and effectively exploits S&T for socio-economic development in critical areas of agriculture, industry, environment, some aspects of public health and social sciences, and improves the scientific culture of civil society in Ghana. The activities of the CSIR and its Institutes are also guided by the United Nation's Sustainable Development Goals (SDGs) and the African Union's long term Agenda 2063.

**Vision:**
The leading Science, Technology and Innovation (STI) institution for accelerated socio-economic development

**Mission:**
Using the transforming power of STI for wealth creation through research and the creation of innovative technologies for industrial development.

**Mandate**
The CSIR generates and applies innovative technologies, and efficiently and effectively exploits S&T for socio-economic development in critical areas of agriculture, industry, environment, some aspects of public health and social sciences, and improves the scientific culture of civil society in Ghana.

**Establishment, Structure and Organization**
The CSIR was established through an act of parliament, CSIR Act 521 of 1996. The Governing Council is made up of 21 members appointed by Government representing both the public and private sectors, and relevant government Ministries/Agencies/Departments (MDAs).

The Management of the CSIR comprises: The Director General, who is the Chief Executive, The Deputy Director-General, The Director of Administration, Director of Finance, Director of Commercialisation, Director of Audit and the Legal Officer.

The CSIR is made up of thirteen (13) Research Institutes stationed nationwide with the Head Office in Accra. CSIR currently has staff strength of 3,564. The Institutes, including their locations are listed below:

- Animal Research Institute - Accra
- Building and Road Research Institute - Kumasi
- Crops Research Institute - Kumasi
- Food Research Institute - Accra
- Forestry Research Institute of Ghana - Kumasi
- Oil Palm Research Institute - Kusi-Kade
- Plant Genetic Resources Research Institute - Bunso
- Savanna Agricultural Research Institute - Tamale
- Science and Technology Policy Research Institute - Accra
- Soil Research Institute - Kumasi
- Institute of Scientific and Technological Information - Accra
- Institute of Industrial Research - Accra
- Water Research Institute - Accra

## 1.2 Current Approach to Operationalising Mandate

In an effort to effectively and efficiently fulfil its mandate the CSIR adopted a five-fold approach where the products/technologies/innovations/services generated from the research activities are transferred to private sector entities or marketed to the general public through commercialization (CSIR-Plus). Research Scientists assist in training, conducting research and supervising post-graduate students in the CSIR College of Science and Technology (CCST). Finally, the revenue generated from both the CSIR-Plus and the Graduate School is used to support research in emerging and national priority areas. This five-fold approach is illustrated below (Figure 1).

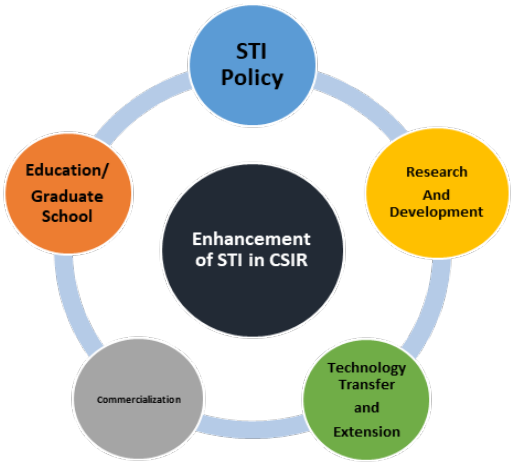


**Figure 1: 5-Fold Approach to Mandate Operationalisation**

## 1.2 Research and Development Programmes

The Research and Development (R & D) programmes are grouped under seven thematic areas:

- Food Security and Poverty Reduction
- Climate Change, Environmental Management and Green Technology
- Materials Science and Manufacturing
- Energy and Petroleum
- Bio-medical and Public Health
- Electronics and ICT
- Science and People

## 1.3 Commercialization

In order to achieve the target of financing 30% of our recurrent (operational budget) through IGF, an annual amount of at least $20 million would have to be earned through commercialization.
A conscious effort will be made by management to strengthen corporate commercialisation to promote strong links between CSIR and industry.
Four (4) main commercialisation activities have been identified

- Production not related directly to research.
- Sale of by-product of Institutes researches.
- Sale of end-product of Institutes researches.
- Services (Consultancy, Contract research, Hiring of facilities)

## 1.4 CSIR College of Science and Technology (CCST)

The CSIR College of Science and Technology (CCST) is a registered, non-profit institution accredited by the National Accreditation Board (NAB). The college has two campuses in Accra and Kumasi. It has at its disposal state-of-the-art facilities, equipment and field research stations countrywide. Seven (7) academic programmes are currently offered with plans to roll out others in future. These programmes are:

- MSc Climate Change and Integrated Natural Resources Management
- MPhil Climate Change and Integrated Natural Resources Management
- MPhil Soil Health and Environmental Resources Management
- MPhil Fisheries and Aquaculture
- MPhil Agro-Processing Technology and Food Bio-Sciences
- MPhil Plant Breeding and Biotechnology
- MPhil Industrial Animal Nutrition and Feed Production

## 1.6 CSIR Plus Limited

CSIR *Plus* Limited is a special purpose company set up by the Council for Scientific and Industrial Research (CSIR) to undertake profit-oriented projects. It was incorporated under the Companies Code, 1963 (Act 179) on December 31, 2009 as a private limited liability company and was issued with a Certificate to Commence business on January 4, 2010. CSIR *Plus* Limited is wholly

owned by the CSIR with the primary objective (mission) of marketing and selling CSIR products, produce, services and commercialization of their research results by utilizing private sector driven efficiency and profit generating principles to deliver enhanced shareholder value. The current mandate of CSIR *Plus* as a Company is to consolidate and develop commercial interactions with external communities of interest such as industry, government and investment community. The Company's main areas of responsibility include:

- Developing and maintaining relationships between CSIR and industry.
- Identifying and protecting CSIR intellectual property.
- Negotiating and managing contract research collaboration which involves technology transfer or intellectual property transactions.
- Forming and managing start-up companies to commercialize technologies developed by CSIR.

## 1.7 CSIR-Technology Development And Transfer Centre (CSIR-TDTC)

The CSIR-Technology Development Transfer Centre is a key pillar in the structure for commercialization and technology transfer of technologies and innovations from the CSIR Research Institutes to end-users in the private sector. The CSIR-TDTC was formally incorporated under the Companies Act, 1963 (Act 179) with liability limited by guarantee on the 17$^{th}$ of September, 2019. The vision is to become a centre of excellence that uses the transforming power of Science, Technology and Innovation (STI) for wealth creation through effective linkages between Research and Industry; the mission being to: (a) engage the private sector in partnerships for technology development, appropriation and transfer from the CSIR to industry, (b) encourage CSIR Research Scientists to respond effectively to the technology demands from the private sector, (c) create a system or platform for intensive research-industry interaction including but not limited to organization of technology fairs, business meetings and online discussions via a dedicated website, and, (d) facilitate commercialisation of all technologies developed by the CSIR.

# CHAPTER 2

# SITUATIONAL ANALYSIS

## 1.1 Stakeholder Analysis of the CSIR

**Stakeholder Mapping of the CSIR – based on their interest and influence**

| | *Low Interest* | *High Interest* |
|---|---|---|
| *High Power* | LATENTS<br>Local and International Media<br>General Public | PROMOTERS<br>Donor Organisations and Agencies<br>Government of Ghana (MMDAs)<br>Institute Management Boards<br>CSIR Council<br>Industry and the Private Sector |
| *Low Power* | **APATHETICS**<br>Banks and Financial Institutions<br>Importers and Suppliers of Scientific equipment and supplies. | DEFENDERS<br>International Organisations (non-donors)<br>Educational Institutions<br>NGOs<br>Scientific Community<br>Farmers<br>CSIR staff |

## 2.2 PESTEL Analysis

Major factors identified to have potential for significantly impacting the performance of the CSIR are as listed below.

**Political Factors**

- Historically inadequate commitment of governments to S&T driven socio-economic development
- Lack of technology-friendly policies
- Lack of awareness, understanding and interest about the role and benefits of STI and research by government
- Lack of belief in STI as a developmental lever
- Government seeks alternative STI solutions from external sources