REPUBLIC OF GHANA

MEDIUM TERM EXPENDITURE FRAMEWORK (MTEF)
FOR 2021-2024

MINISTRY OF ENVIRONMENT, SCIENCE, TECHNOLOGY AND INNOVATION

PROGRAMME BASED BUDGET ESTIMATES
For 2021

Transforming Ghana Beyond Aid

Stay Safe: Protect yourself and others
Observe the COVID-19 Health and Safety Protocols
Get Vaccinated

MINISTRY OF ENVIRONMENT, SCIENCE, TECHNOLOGY AND INNOVATION

The MESTI MTEF PBB Estimates for 2021 is also available on the internet at:
www.mofep.gov.gh

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1.5. Appropriation Bill
Summary of Expenditure by Sub-Programme, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Year: 2021 | **Currency:** Ghanaian Cedi (GHS)
2021 Full Year Budget

	GoG				IGF				Funds / Others		Donors			Grand Total
	Compensation of employees	Goods and Services	31 - Non financial assets	Total	Compensation of employees	Goods and Services	31 - Non financial assets	Total	Statutory	*Error: Invalid report object*	Goods and Services	31 - Non financial assets	Total	
01701 - Management And Administration	4,919,205	8,172,435	5,500,000	18,591,640							3,200,000	10,648,038	13,848,038	32,439,678
01701001 - General Administration	4,919,205	7,648,870	5,500,000	18,068,075										18,068,075
01701002 - Finance		19,512		19,512										19,512
01701003 - Human Resource		162,598		162,598										162,598
01701004 - Policy, Planning, Budgeting, Monitoring and Evaluation		211,377		211,377							3,200,000	10,648,038	13,848,038	14,059,415
01701005 - Statistics; Research; Information and Public Relations		130,078		130,078										130,078
01702 - Research And Development	204,218,704	1,393,696		205,612,400	2,980,038	37,373,603	9,170,407	49,524,048			12,853,993	5,392,669	18,246,662	273,383,111
01702001 - Scientific And Industrial Research	150,175,404	696,848		150,872,253	1,534,537	20,368,979	4,172,098	26,075,615			7,883,993	1,992,669	9,876,662	186,824,530
01702002 - Nuclear Science And Space Science Technology	54,043,300	696,848		54,740,148	1,445,501	17,004,624	4,998,309	23,448,433			4,970,000	3,400,000	8,370,000	86,558,581
01703 - Environmental Protection And Management	10,195,609	464,565		10,660,174	50,723,124	57,717,940	23,941,946	132,383,010						143,043,184
01703001 - Environmental Compliance And Enforcement						53,227,780	22,811,906	76,039,686						76,039,686
01703002 - Environmental Education Information And Communication					50,693,124			50,693,124						50,693,124
01703003 - Enforcement and Compliance of ionizing and non-ionizing radiation	10,195,609	464,565		10,660,174	30,000	4,490,160	1,130,040	5,650,200						16,310,374
01704 - Spatial Planning And Human Settlement	7,858,115	696,848		8,554,963										8,554,963
01704001 - Human Settlement and Land Use Research and Policy	7,858,115	696,848		8,554,963										8,554,963
01705 - Biosafety Development		418,109		418,109										418,109
01705001 - Biotechnology Regulation		418,109		418,109										418,109
Grand Total	227,191,633	11,145,653	5,500,000	243,837,286	53,703,162	95,091,543	33,112,353	181,907,058			16,053,993	16,040,707	32,094,700	457,839,044

PART A: STRATEGIC OVERVIEW OF THE MINISTRY OF ENVIRONMENT, SCIENCE, TECHNOLOGY AND INNOVATION (MESTI)

1. POLICY OBJECTIVES

The Ministry of Environment, Science, Technology and Innovation has adopted ten (10) Policy Objectives out of the numerous contained in the NMTDF 2018-2021; Agenda for Jobs.

These are as follows:
- Enhance the application of science, technology, and innovation.
- Ensure sustainable extraction of Mineral Resources.
- Reduce Environmental Pollution
- Enhance Climate Change Resilience
- Reduce greenhouse gases
- Mainstream science, technology, and innovation in all socio-economic activities
- Ensure availability of clean, affordable, and accessible energy.
- Minimize potential environmental impacts of oil and gas industry.
- Promote sustainable, spatially integrated, balanced, and orderly development of human settlements.
- Enhance capacity for policy formulation and coordination.

2. GOAL

The Ministry of Environment, Science, Technology, and Innovation (MESTI) seeks to ensure accelerated socio-economic development of the nation through the formulation of sound policies and a regulatory framework to promote the use of appropriate environmentally friendly, scientific, and technological practices.

3. CORE FUNCTIONS

The core functions of the Environment, Science, Technology, and Innovation Sector are:
- Provide leadership and guidance for Environment, Science, Technology, and Innovation within the broad sector of the economy through sound policy formulation and implementation;
- Ensure the establishment of the regulatory framework and setting of standards to govern the activities of science and technology and the management of the environment for sustainable development;

- Promote activities needed to underpin the standards and policies required for planning and implementation of sound scientific and technological development activities;
- Ensure the coordination, supervision, monitoring and evaluation of activities of Environment, Science, Technology, and Innovation while fulfilling national benefits-sharing commitments;
- Set out the parameters required for programmes on environment, science, technology, and human settlement in consultation with the National Development Planning Commission (NDPC) in guiding the Districts Assemblies as the planning authorities at the local level;
- Analyse and coordinate all planned programmes as well as budgets in the environment, science, technology, and innovation sector of the economy for purposes of achieving a single integrated management system;
- Initiate, simulate, and coordinate research including the continuous development and review of policies, laws, rules and regulations in the environment, science, technology and innovation sector of the economy; and
- Ensure effective environmental management and governance, in line with the functions of the Act 490, with the EPA as the main implementing agency and the MESTI playing an oversight, coordination and facilitating role.

4. POLICY OUTCOME INDICATORS AND TARGETS

Output Indicator Description	Unit of Measurement	Baseline		Latest Status		Target	
		Year	Value	Year	Value	Year	Value
Reduction in climate change vulnerability: Number of sectors with climate change mitigation and adaptable strategy priorities integrated	Number of industries using REDD concepts, based on research to assess carbon stocks	2019	14	2020	14	2024	18
	Number of sectors with climate change mitigation and adaptation strategy priorities integrated	2019	9	2020	9	2024	11
Amount of Green House Gases in the atmosphere	Metric Tonnes	2019	42.2 MT	2020	42.2 MT	2024	63.1 MT
Proportion of companies compliant with EA and EMP permit conditions (to be considered an appropriate programme)	Number of companies issued with EA and EMP permit	2019	7,621	2020	11,506	2024	9,000
Research adaptation by industries (SDG Target 9.b)	Number of research findings adopted by industry	2019	115	2020	104	2024	180
	Number of businesses /industries assisted to adopt R&D in production	2019	37	2020	32	2024	85
	Rate of adoption of improved locally-packaged technologies my MSMEs (%)	2019	45%	2020	30%	2024	50%

5. SUMMARY OF KEY ACHIEVEMENTS IN 2020

Management and Administration Programme

In support of SDG Goal, target 12.4, the Ministry commenced the **pilot incentive payment system for e-waste collection** at Old Fadama (Agbogbloshie) to reduce the indiscriminate disposal and burning associated with the management of e-waste. Since the commencement of the incentive payment system at Agbogbloshie on 30th June 2020, over 30 tonnes of e-waste cables (which would otherwise have been burnt by the scrap dealers and further polluted the environment) were purchased.

E-waste (cables) being purchased at Agbogbloshie.

Launch of Incentive Payment System at Agbogbloshie

His Excellency, the President, in August 2020, laid the foundation stone for the **construction of the first ever Machine Tooling Centre and Foundry** in Ghana at the Ghana Atomic Energy Commission premises. The facility and associated workshops will be equipped with tools and machinery to provide agro-processing machines and equipment, farming implements, and spare parts for maintenance and repairs. The facilities at this center will provide technical support for policy initiatives of the government such as One District One Factory (1D1F), which is already in place in many districts across the country and is providing jobs.
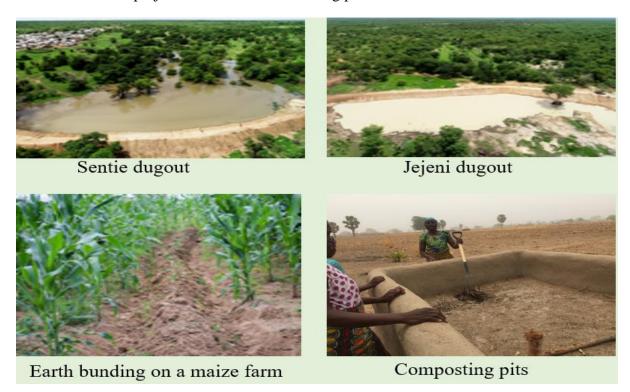
Laying of foundation stone by H.E. the President

Hon. Kwabena Frimpong-Boateng at the launch

Cabinet approved the **National Plastics Management Policy** and its accompanying Implementation Plan in May 2020. The Policy, together with the Ghana National Plastics Action Partnership (NPAP) Initiative, will provide the platform for the reduction of plastic waste and pollution in Ghana. The Ministry is also working assiduously to operationalize the Plastic Waste Recycling Fund to provide finance for the management of plastics and reduce the adverse impact of plastic waste on human health and the environment.

In support of SDG Goal 2 target 4 to promote sustainable agriculture and strengthen capacity for adaptation to climate change, the Ministry under the **Sustainable Land and Water Management Project (SLWMP)** supported over 40,000 farmers in the 12 project districts to implement sustainable practices on a total of 16,317 ha of land. Ten (10) dugouts were also constructed in the project area to serve as watering points for wildlife and cattle.

Sentie dugout

Jejeni dugout

Earth bunding on a maize farm

Composting pits

The **Ghana-Switzerland Cooperation Agreement** on Article 6 of the Paris Climate Change agreement was signed on 1st November 2020 which led to the development of a registry to promote carbon trading.

The Ministry also continued with the implementation of the **Adaptation Fund Project** to Increase resilience to Climate Change in Northern Ghana through the management of water resources and diversification of livelihoods. Some achievements of the project include:

- 10 dams rehabilitated in 10 communities in 4 Northern Regions (Northern, Upper West, Upper East and Savannah)
- 24 women led agro processing facilities constructed with 1,260 direct beneficiaries.
- 29 Fish farms established in 29 communities with over 970 direct beneficiaries.
- 50 Dry Season Gardens with 2,377 direct beneficiaries.
- 50 Community based Beekeeping Associations established in 50 project communities with 996 direct beneficiaries.

Shea Butter processing facility at Ntereso

Multi-purpose Processing equipment installed

Kitchen for roasting shea nuts

Women beneficiaries processing groundnuts at Kunkua

Finished Products

In addition, a national Task Team was inaugurated in 2020 by the Ministry with support from UNESCO to develop Ghana's STI for SDGs Roadmap. The STI for SDGs roadmap is a forward-looking policy framework to continuously guide effective actions to utilize STI to achieve the SDGs with country-wide scope. The final document, which covers seven (7) of the SDGs (1,2,3,4,6,8 & 9) will be finalized in 2021.

Research and Development Programme

The Ministry through the Council for Scientific and Industrial Research (CSIR) deployed technical expertise in virology and molecular genetics of infectious diseases to support the on-going COVID-19 RT-PCR based testing at both Noguchi Memorial Institute (NMIMR) and

KCCR. The Biomedical Laboratory of the Water Research Institute (CSIR-WRI) was also upgraded to Level 2, where some district hospitals have been assigned to send suspected covid samples for testing in collaboration with the COVID-19 coordinating team.

Laboratory facilities at CSIR

In support of SDG Target 2.1 aimed at ending hunger and ensuring access by all people to safe, nutritious, and sufficient food all year round, the Ministry through the CSIR released **four varieties of sweet potato**. The attributes of the 4 varieties are as follows:

- **SARI Suyolo**: Potential yield -23.7 t/ha, early maturing (3 – 4 months), high dry matter, light orange flesh colour.
- **SARI JanLow**: Potential yield: 25 t/ha, early maturing (3 – 4 months), orange flesh colour with high provitamin A content, medium to high dry matter.
- **SARI Tiemeh**: Potential yield: 20.4 t/ha, late maturing (4 – 5 months), High dry matter, low sweetness, tolerance to sweet potato weevil, pale yellow flesh colour.
- **SARI-Nyoriberi-gu**: Potential yield: 20.5 t/ha. Maturity 4 – 5 months, high dry matter, high root, and foliage yield, tolerant to sweet potato weevil, Cylas sp. Pale yellow to orange flesh colour, larger storage roots.

SARI Suyolo

SARI Tiemeh

As per best international practices, the Ghana Nuclear Power Programme is being developed based on the International Atomic Energy Agency (IAEA) Milestones Framework. Out of the three (3) Phases of the milestone framework, Ghana has completed all Phase 1 technical activities needed to make a knowledgeable commitment to a nuclear programme. The Ghana Atomic Energy Commission (GAEC) together with key stakeholders (Nuclear Regulatory Authority and Nuclear Power Ghana) have developed a Programme Comprehensive Report (PCR) which details all technical activities needed for Government to make the needed knowledgeable commitment. The PCR has been submitted to Government to adopt its content and in turn communicate to the local and international communities to formally usher the programme into phase 2 even though some phase 2 activities have already started. The programme has also completed a nationwide perception survey which will greatly inform the programme on how to further engage the populace.

The Ghana Atomic Energy Commission (GAEC) monitored 1,046 telecommunication masts and assessed 809 base stations for compliance as well as 1,997 occupationally exposed workers involved in ionizing radiation. The Commission also screened 11 samples (sachet and bottled water) for gross alpha-beta levels.

Measurement of gross alpha-beta in drinking water

Radiation Monitoring

Environmental Protection and Management

In support of SDG Target 12.6 which seeks to encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability into their reporting, the EPA issued 11,506 environmental assessment permits and 47,588 chemical licenses in line with L.I 1652. A team of officers from the Accra Regional Police Command and the Environmental Protection Agency (EPA) also arrested some eight (8) scrap dealers for allegedly engaging in open burning of electronic waste at Agbogbloshie, in Accra. Enforcement notices were issued to the non-compliant undertakings for cessation of activities. Imposition of administrative charges were also applied to such companies.

The Ghana Integrated E-waste Programme through an extensive stakeholder consultation has successfully deployed sixty-five (65) high priority product Harmonized System (HS) Codes via the new Integrated Customs Management Systems (ICUMS). The advance eco-levy collection on ICUMS is now fully linked to the E-waste Fund under the control of the Fund Administrator. The full operationalization of the scheme will lead to the formalization of the informal sector, and the creation of decent and sustainable jobs along the e-waste value chain.

As part of its **environmental quality monitoring programme**, the Agency monitored Air quality at 13 regulatory and 10 non regulatory sites. The results indicated that PM10 levels were above the Ghana Standards. The Agency also monitored over 124 industries **for effluent quality** and the results were higher than the Ghana Standards.

Water Quality Monitoring

Water Sample Analysis

Air quality monitoring

Auditing of VRA's Preparedness - Oil Spills

The EPA also developed Draft Environment **Regulations for onshore & offshore oil & gas operations** and submitted to the Attorney General's Department for final drafting. In addition, Draft **Pesticides Regulations** and **Industrial Chemicals Regulations** are at various stages of development to regulate the use of chemicals and pesticides in the country.

The Nuclear Regulatory Authority (NRA) authorized **368 radioactive sources** and devices for use. An additional **260 permits** were issued for import, export, transport and storage of radioactive sources and devices over the period to ensure the protection of humans and the environment from the harmful effects of radiation. It is important to state that enforcement notices were served to **11 non-complying facilities** to enforce corrective actions and ensure safety of radiation workers and patients.

Additionally, two (2) Regulations (Basic Ionizing Radiation Regulations, Safeguards Regulations) were approved by the NRA Board and ready for promulgation.

Radiation Monitoring and Inspections

Human Settlements and Spatial Planning

In addressing human settlement issues, the Zoning Guidelines, Planning Standards, Manuals and Permitting Guidelines have been published on the Land Use and Spatial Planning Authority (LUSPA) website to enhance land use and spatial planning and development, and access by the public. In addition, data collection for the preparation of spatial plans for Ghana's Petroleum hub area in Jomoro District was also commenced by the Authority.

In addition, the Regional Spatial Planning Committees (RSPCs) of the six (6) newly created Regions were successfully inaugurated by LUSPA.

RSPC inauguration session at Oti Region

RSPC inauguration session at Bono East

Biosafety Development Programme

The Ministry through the National Biosafety Authority (NBA) completed pre-planting inspection at the Crops Research Institute of the Council for Scientific and Industrial Research (CSIR-CRI) NEWEST Rice Confined Field Trials site. The institute was planting the event to assess its drought tolerance. In addition, the NBA inspected the Crops Research Institute's Biotechnology Laboratory to assess its status for GMO work. This is in line with SDG Target

12.a which seeks to strengthen scientific and technological capacity to move towards more sustainable patterns of production and consumption.

CSIR-CRI's NEWEST Rice Confined Field Trials

Laboratory Inspection of CSIR-CRI

6. EXPENDITURE TRENDS FOR THE MEDIUM-TERM

The Ministry over the 2019 and 2020 fiscal years was allocated a total amount of GH¢417,954,342 and GH¢475,423,880 respectively, comprising of funds from GoG, IGF and Development Partners (DPs). It is however worth mentioning that the 2020 budget was revised upwards to **GH¢505,423,880** during the Midyear review. The G.O.G Compensation budget for 2019 and 2020 were GH¢190,812,717 and GH¢222,037,880 respectively, representing a 16% increase in 2020.

The budget allocation for Goods and Services, on the other hand, increased by 107% from GH¢2,989,880 in 2019 to GH¢23,961,967 in 2020. The huge increment was because of an allocation of GH¢20,000,000 for the Science and Technology (S&T) Project. The 2020 Goods and Services budget was later revised upwards to **GH¢53,961,967** during the Midyear review. The Ministry also recorded an increase in its approved CAPEX budget from GH¢3,800,000 in 2019 to GH¢35,000,000 in 2020, also due to allocations for the S&T Project.

The IGF budget allocations increased from GH¢147,119,650 in 2019 to GH¢158,142,313 in 2020, representing an upward adjustment of 8%. Approved expected revenues from Development Partners (DP) increased by 22% from GH¢30,111,562 in 2019 to GH¢36,585,348 in 2020.

As of December 2020, total payments for the Environment, Science, Technology, and Innovation Sector stood at **GH¢489,925,503** as against total receipts of **GH¢506,414,149**. Out of the total amount, Compensation of Employees stood at

GH¢233,454,046, Goods and Services stood at **GH¢50,985,787** whilst CAPEX stood at **GH¢19,608,744**. Additionally, payments related to IGF and DPs stood at **GH¢132,041,955** and **GH¢53,834,971** respectively.

The budget performance of the Ministry and its Agencies for the period (January-December 2020) under review is as follows:

ECONOMIC CLASSIFICATION	APPROVED BUDGET (A)	REVISED BUDGET (A) (GHS)	AMOUNT RELEASED AS AT DEC. 2020 (B)	PAYMENTS (C)	VARIANCE (A-B)	PERCENTAGE UTILISATION
GOG						
Compensation	222,037,880	222,037,880	233,454,046	233,454,046	11,416,166	105%
Goods & Services	23,961,967	53,961,967	51,017,207	50,985,787	2,944,760	95%
CAPEX	35,000,000	35,000,000	22,960,484	19,608,744	12,039,516	56%
Sub-total	**280,999,847**	**310,999,847**	**307,431,737**	**304,048,577**	**26,400,442**	**98%**
RETAINED IGF						
Compensation	44,959,916	44,959,916	42,997,147	42,986,938	1,962,769	96%
Goods & Services	81,135,107	81,135,107	69,408,443	69,803,435	11,726,664	86%
CAPEX	32,047,290	32,047,290	19,251,582	19,251,582	12,795,708	60%
Sub-total	**158,142,313**	**158,142,313**	**131,657,172**	**132,041,955**	**26,485,141**	**83%**
DEVELOPMENT PARTNERS						
Goods & Services	32,758,860	32,758,860	67,113,789	51,684,523	34,354,929	158%
CAPEX	3,522,860	3,522,860	211,451	2,150,448	3,311,409	61%
Sub-total	**36,281,720**	**36,281,720**	**67,325,240**	**53,834,971**	**37,666,338**	**148%**
Grand-Total	**475,423,880**	**505,423,880**	**506,414,149**	**489,925,503**	**-990,269**	**97%**

2.6 Budget by Chart of Account

6.0- Programme, Sub-Programme and Natural Account Summary

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021│**Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
All Programmes	**457,839,044**	**455,187,544**	**455,187,544**	**455,187,544**
01701 - Management And Administration	**32,439,678**	**32,712,470**	**32,712,470**	**32,712,470**
01701001 - General Administration	**18,068,075**	**18,340,867**	**18,340,867**	**18,340,867**
21 - Compensation of employees [GFS]	4,919,205	4,939,449	4,939,449	4,939,449
22 - Use of goods and services	7,648,870	7,901,418	7,901,418	7,901,418
31 - Non financial assets	5,500,000	5,500,000	5,500,000	5,500,000
01701002 - Finance	**19,512**	**19,512**	**19,512**	**19,512**
22 - Use of goods and services	19,512	19,512	19,512	19,512
01701003 - Human Resource	**162,598**	**162,598**	**162,598**	**162,598**
22 - Use of goods and services	162,598	162,598	162,598	162,598
01701004 - Policy, Planning, Budgeting, Monitoring and Evalu	**14,059,415**	**14,059,415**	**14,059,415**	**14,059,415**
22 - Use of goods and services	3,411,377	3,411,377	3,411,377	3,411,377
31 - Non financial assets	10,648,038	10,648,038	10,648,038	10,648,038
01701005 - Statistics; Research; Information and Public Relati	**130,078**	**130,078**	**130,078**	**130,078**
22 - Use of goods and services	130,078	130,078	130,078	130,078
01702 - Research And Development	**273,383,111**	**272,946,331**	**272,946,331**	**272,946,331**
01702001 - Scientific And Industrial Research	**186,824,530**	**186,824,530**	**186,824,530**	**186,824,530**
21 - Compensation of employees [GFS]	151,709,941	151,709,941	151,709,941	151,709,941
22 - Use of goods and services	28,949,821	28,949,821	28,949,821	28,949,821
31 - Non financial assets	6,164,767	6,164,767	6,164,767	6,164,767
01702002 - Nuclear Science And Space Science Technology	**86,558,581**	**86,121,801**	**86,121,801**	**86,121,801**
21 - Compensation of employees [GFS]	55,488,801	55,488,801	55,488,801	55,488,801
22 - Use of goods and services	20,149,541	19,712,761	19,712,761	19,712,761

2.6 Budget by Chart of Account
6.0- Programme, Sub-Programme and Natural Account Summary
Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021│**Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
27 - Social benefits [GFS]	532,164	532,164	532,164	532,164
28 - Other expense	1,989,767	1,989,767	1,989,767	1,989,767
31 - Non financial assets	8,398,309	8,398,309	8,398,309	8,398,309
01703 - Environmental Protection And Management	**143,043,184**	**143,043,184**	**143,043,184**	**143,043,184**
01703001 - Environmental Compliance And Enforcement	**76,039,686**	**76,039,686**	**76,039,686**	**76,039,686**
22 - Use of goods and services	50,222,780	50,222,780	50,222,780	50,222,780
27 - Social benefits [GFS]	2,750,000	2,750,000	2,750,000	2,750,000
28 - Other expense	255,000	255,000	255,000	255,000
31 - Non financial assets	22,811,906	22,811,906	22,811,906	22,811,906
01703002 - Environmental Education Information And Commu	**50,693,124**	**50,693,124**	**50,693,124**	**50,693,124**
21 - Compensation of employees [GFS]	50,693,124	50,693,124	50,693,124	50,693,124
01703003 - Enforcement and Compliance of ionizing and non-	**16,310,374**	**16,310,374**	**16,310,374**	**16,310,374**
21 - Compensation of employees [GFS]	10,225,609	10,225,609	10,225,609	10,225,609
22 - Use of goods and services	4,734,725	4,734,725	4,734,725	4,734,725
27 - Social benefits [GFS]	220,000	220,000	220,000	220,000
31 - Non financial assets	1,130,040	1,130,040	1,130,040	1,130,040
01704 - Spatial Planning And Human Settlement	**8,554,963**	**6,067,450**	**6,067,450**	**6,067,450**
01704001 - Human Settlement and Land Use Research and Pol	**8,554,963**	**6,067,450**	**6,067,450**	**6,067,450**
21 - Compensation of employees [GFS]	7,858,115	5,370,602	5,370,602	5,370,602
22 - Use of goods and services	696,848	696,848	696,848	696,848
01705 - Biosafety Development	**418,109**	**418,109**	**418,109**	**418,109**
01705001 - Biotechnology Regulation	**418,109**	**418,109**	**418,109**	**418,109**
22 - Use of goods and services	413,609	413,609	413,609	413,609

2.6 Budget by Chart of Account

6.0- Programme, Sub-Programme and Natural Account Summary

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
27 - Social benefits [GFS]	4,500	4,500	4,500	4,500

PART B: BUDGET PROGRAMME SUMMARY

PROGRAMME 1: MANAGEMENT AND ADMINISTRATION

1. Budget Programme Objectives

- To formulate policies and legislations that would facilitate the sustainable development of the country through the application of science, technology and innovation and the adoption of international standards/protocols and conventions that relate to the environment, science, technology, and innovation sector of the country.
- To strengthen the coordination of activities of the Ministry, its Agencies/Department, and other stakeholders (MDAs, MMDAs, CSOs, DPs, Private Sector) on the issues that relate to the environment, science technology and innovation sector.
- To strengthen policy planning, monitoring and evaluation within the Ministry and to ensure the effective implementation of sector polices programmes and projects.

2. Budget Programme Description

The Management and Administration programme provides the cross-cutting services required in order that the other programmes undertaken by the sector can succeed in achieving their objectives. This programme is responsible for:

- Formulating, coordinating, monitoring and evaluation of environmental policies and legislations that will ensure and promote sustainable environmental development;
- Formulating, coordinating, monitoring and evaluation of science, technology, and innovation policies to promote the development and application of research to enhance sustainable development of the country;
- Strengthening human capacities to adequately deal with environmental management, science, technology and innovation issues; and
- Preparing the sector budget and pursuing the interest of the Ministry in all financial transactions.

2.7. Budget by Chart of Account
7- MDA Sub-Programme and Natural Account Summary

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021｜**Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
01701 - Management And Administration	**32,439,678**	**32,712,470**	**32,712,470**	**32,712,470**
01701001 - General Administration	**18,068,075**	**18,340,867**	**18,340,867**	**18,340,867**
21 - Compensation of employees [GFS]	4,919,205	4,939,449	4,939,449	4,939,449
22 - Use of goods and services	7,648,870	7,901,418	7,901,418	7,901,418
31 - Non financial assets	5,500,000	5,500,000	5,500,000	5,500,000
01701004 - Policy, Planning, Budgeting, Monitoring and Evalu	**14,059,415**	**14,059,415**	**14,059,415**	**14,059,415**
22 - Use of goods and services	3,411,377	3,411,377	3,411,377	3,411,377
31 - Non financial assets	10,648,038	10,648,038	10,648,038	10,648,038
01701002 - Finance	**19,512**	**19,512**	**19,512**	**19,512**
22 - Use of goods and services	19,512	19,512	19,512	19,512
01701003 - Human Resource	**162,598**	**162,598**	**162,598**	**162,598**
22 - Use of goods and services	162,598	162,598	162,598	162,598
01701005 - Statistics; Research; Information and Public Relati	**130,078**	**130,078**	**130,078**	**130,078**
22 - Use of goods and services	130,078	130,078	130,078	130,078

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 1: MANAGEMENT AND ADMINISTRATION

SUB-PROGRAMME 1.1: General Administration

1.   Budget Sub-Programme Objectives

- To effectively coordinate the activities of the various Directorates of the Ministry and its Agencies;
- To ensure the provision of adequate resources/logistics for the smooth operations of the Ministry;
- To promote the application of Science, Technology and Innovation in all sectors of the economy; and
- To promote the integration of environmental issues in all sectors of the economy.

2.   Budget Sub-Programme Description

This sub-programme looks at coordinating the activities of the Ministry and its Agencies through the office of the Chief Director. It issues directives that are consistent with the policy direction of the Ministry; provides required resources and logistics (e.g., human, transport, stationery, office equipment) for effective running of the Ministry.

The sub-programme is responsible for ensuring that the sector projects and programmes are in line with national development agenda by developing appropriate policies, programmes and projects that relate to the environment and Science, Technology, and Innovation; as well as ensures the successful implementation of all activities that relate to the environment, Science, Technology, and Innovation.

Operations undertaken include, to:
- Mainstream STI into National Development Agenda
- Promote STI Culture in Ghana (Celebrate Annual STI week and Scientific Renaissance day)
- Build STI Infrastructure Capacity (establish foundry and Compute Numerical Control machine tooling centre to kick-start the promotion and production of machine parts, as well as support the operationalization of the High-Performance Computing Center)
- Operationalize the Ghana Innovation and Research Commercialization (GIRC) Centre.
- Develop Indigenous Knowledge and   Technologies (develop National database on indigenous technologies and knowledge)
- Develop National STI Roadmap for SDGs
- Develop National Capacity for Space Science and Technologies

- Enhance the sound recycling and management of Electronic/Electrical Waste
- Implement the National Plastic Management Policy and implementation plan.
- Operationalize the National Plastic Waste Recycling Fund
- Set up the Resource Recovery Secretariat.
- Implement Climate Change and Green Economy related activities.
- Review Draft National Biodiversity Policy in line with Post-2020 Global Biodiversity Framework
- Ensure cohesion and successful implementation of the environment and STI related programmes and projects in the Sector Medium Term Development Plan.
- Manage the properties of the Ministry through procurement and maintenance works.
- Ensure the timely provision of resources/logistics for the efficient operations of the Ministry.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance

| Main Outputs | Output Indicator | Past Years | | | | Projections | | | |
| | | 2019 | | 2020 | | Budget Year 2021 | Indicative Year 2022 | Indicative Year 2023 | Indicative Year 2024 |
		Target	Actual	Target	Actual				
Land area where Sustainable Land and Water Management Practices have been adopted as a result of the SLWMP	Size of land (in Hectares)	14,000	15,257.85	15,000	16,317	-	-	-	-
Land users adopting Sustainable Land and Water Management Practices as a result of the SLWMP	No. of farmers adopting the practices	28,000	39,432	30,000	40,253	-	-	-	-

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Direct SLWMP beneficiaries	No. of farmers	52,000	57,595	60,000	61,989	-	-	-	-
	% of which are women	40%	54.6%	40%	56.1%	-	-	-	-
Oil and Gas environment policy developed	Policy document submitted to Cabinet	Final Draft Policy Document developed	Draft Policy, Implementation & communication strategy developed	Finalize draft and implement the EMPOGI	Draft policy, Implementation plan and communication strategy finalized.	Mainstream policy into national and local plans of oil and gas districts	Implement policy	Implement policy	Implement policy
Develop legislation for Chemical Weapon Convention (CWC)	Final draft legislation developed and submitted to Cabinet	Final Draft legislation for CWC developed	Draft legislation subjected to national stakeholder for consultations for validation	Stakeholder consultation. Finalize the legislation. Sensitization on the legislation. Develop an Implement at	Office of the Attorney General currently reviewing the draft Legislations	Stakeholder consultations and finalization of legislations	Development of Implementation plan	Implement plans	implement plans

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
				ion Plan					
National Biodiversity policy developed	Policy document submitted to Cabinet	Develop Implementation Plan (IP) for National Biodiversity Policy	Implementation Plan developed.	Review of the NBP and IP in line with Post-2020 Biodiversity Framework	Draft policy developed	Review and Finalize Draft NBP and IP in line with GBF. Prepare and submit cabinet memo	Implement NBP	Implement NBP	Implement NBP
NDC Implementation & Investment plan	NDC Implementation & Investment plan developed	31st March	100% completed	Revision of Emission Baseline Targets for NDC Implementation & Investment plan	Revision process is 50% completed	Use financing strategy to mobilize resources for the implementation of the NDCs	Implement NDC Actions and Monitor progress	- Implement NDC Actions and Monitor progress	Implement NDC Actions and Monitor progress
	Number of machine	1	-	1	Construction	Operationaliz	Operationalize	Operationalize	Operationalize

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Building STI infrastructure Capacity	tool centers established				works have commenced on the site	e the Foundry	the Foundry	the Foundry	the Foundry
	National HPC Center Established	Install HPC equipment	HPC equipment received and installation yet to be completed	HPC Center launched and Operational	On-going discussions over electrical and internet installation	Operationalize the Centre	-	-	-
Establish an Effective National Innovative System	GIRC-Center established.	Develop Master Framework for establishment of GIRC-Center	2 reports prepared on STI ecosystem and making a Business Case for the GIRC-Center	Operationalize the GIRC Center	Meeting on branding of the GIRC Centre organized	Operationalize the Centre	Operationalize the Centre	Operationalize the Centre	Operationalize the Centre
	No. of Strategic Technology Centers Established	-	-	1	-	1	1	1	1

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Mainstreaming STI Into National Development Agenda	STI Roadmap for the SDGs developed.	STI Roadmap for the SDGs initiated	Ghana selected by UN to initiate the STI Roadmap for the SDGs	STI Roadmap for the SDGs prepared	Validation Workshop on Situational Analysis organized	STI Roadmap Implemented	STI Roadmap Implemented	STI Roadmap Implemented	STI Roadmap Implemented
	National Space Policy developed.	-	-	Submit Policy for cabinet approval	Draft Cabinet Memo prepared	Implement Policy	Implement Policy	Implement Policy	Implement Policy
Strengthening STI Advisory System for Policy Makers	Inter-Ministerial Coordinating Committee established	Establish PACSTI	PACSTI established under the Office of the President	Framework for establishment of Inter-Ministerial Coordinating Committee developed	Not done	Inter-ministerial coordinating Committee established and operational	-	-	-

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme.

Operations	Projects
Internal management of the organisation	**Acquisition of Movable and Immovable Assets**
Office supplies and consumables	Construction of Foundry and Machine Tooling Center
Environmental policy integration and management	
Review Draft National Biodiversity Policy in line with Post-2020 Global Biodiversity Framework	
Print and launch National Biodiversity Policy	
Mainstream environmental management policy for Oil and gas into national and local plans of oil and gas districts	
Implement environmental management policy for Oil and gas and Communication Strategy	
Review and Finalise draft legislations for Chemical weapons	
Develop implementation plan for Chemical weapons legislation	
Implement the National Plastics Management Policy	
Climate change policy and programmes	
Publish and Launch Ghana's Action Plan for the mitigation for short-lived climate pollutants	
Organize stakeholders' consultations to review feasibility report for rainwater harvesting in the Kwahu Afram Plains	
Organize consultations with the Private Sector and Business on the operationalization of the clean energy access programme	
Development and promotion of the application of science and technology	
Support Operationalization of GIRC Center	
Support Operationalization of HPC Center	
Finalize National STI Road Map and action plan for the SDGs	
Pilot "National Innovation Challenge"	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01701001 - General Administration	**18,068,075**	**18,340,867**	**18,340,867**	**18,340,867**
21 - Compensation of employees [GFS]	**4,919,205**	**4,939,449**	**4,939,449**	**4,939,449**
22 - Use of goods and services	7,648,870	7,901,418	7,901,418	7,901,418
31 - Non financial assets	**5,500,000**	**5,500,000**	**5,500,000**	**5,500,000**

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 1: MANAGEMENT AND ADMINISTRATION

SUB-PROGRAMME 1.2: Finance

1. Budget Sub-Programme Objective

To improve resource mobilization, financial management and reporting (financial reports/statements) and the judicious use of financial resources as per the budgetary provisions.

2. Budget Sub-Programme Description

This sub-programme focuses on ensuring that the financial management practices of the Ministry are consistent with laid down procedures and consistent with the appropriate laws. This sub-programme is delivered by the Finance and Internal Audit Units of the Ministry.

This sub-programme seeks to safeguard the interest of the Ministry in all financial transactions relating to revenue and expenditure management and ensure proper allocation and use of the Ministry's budget. It also ensures effective financial transactions relating to revenue and expenditure management and reporting of the Ministry and its project accounts. It also ensures the provision of an effective and efficient system of internal controls (checks and balances) and the practice of proper and accountable administration.

Activities undertaken include, to:
- Identify other revenue streams apart from GoG;
- Strengthen revenue generation machinery;
- Ensure compliance with accounting/auditing procedures and timely reporting; and
- Ensure budgetary control and management of assets, liabilities, revenue and expenditures.
- Ensures that internal control systems are in place;
- Ensures accountable records are accurate including purchases and payments;
- Identifies any accounting errors, cases of fraud and initiate investigations;
- Reviews and recommending strengthening of internal systems.
- Financial, managerial and operating information reported internally and externally is accurate, reliable and timely;
  Ensuring that the financial activities of the Ministry are in compliance with applicable laws, regulations, policies, Laws, standards and procedures;

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Internal Audit reports	Number of audit reports submitted per year	4	4	4	4	4	4	4	4
	Number of ARIC meetings held	4	4	4	4	4	4	4	4
Financial reports/statement	Monthly financial reports submitted by	15th of the ensuing month	15th of the ensuing month	15th of the ensuing month	15th of the ensuing month	15th of the ensuing month	15th of the ensuing month	15th of the ensuing month	15th of the ensuing month
	Number of financial statements prepared	End of 1st quarter of the ensuing year	End of 1st quarter of 2018	End of 1st quarter of 2019	1st quarter Financial Statement submitted-	End of 1st quarter of the ensuing year	End of 1st quarter of the ensuing year	End of 1st quarter of the ensuing year	End of 1st quarter of the ensuing year

4. Budget Sub-Programme Operations and Projects

The table lists the main operations and projects to be undertaken by the sub-programme

Operations	Projects
Internal Audit operations	No Projects
External audit operations	
Special Audit assignments	
Treasury and Accounting activities	
Preparation of Financial Reports	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01701002 - Finance	**19,512**	**19,512**	**19,512**	**19,512**
22 - Use of goods and services	19,512	19,512	19,512	19,512

BUDGET SUB-PROGRAMME SUMMARY
PROGRAMME 1: MANAGEMENT AND ADMINISTRATION
SUB-PROGRAMME 1.3:   Human Resource

1.   Budget Sub-Programme Objective

To facilitate the recruitment, replacement, placement, retention and improvement in the capacity and welfare of employees.

2.   Budget Sub-Programme Description

The Human Resource sub-programme identifies human resource needs of the Ministry and provides the requisite personnel by recruiting, training and building the capacity of staff as well as other sector related MDAs and relevant stakeholders (such as private sector) to enhance productivity. This sub-programme is delivered by the HRM Directorate of the Ministry.

This sub-programme develops sector-wide policy on HR Planning, Succession Planning, Training and Development and Performance Management. It also ensures that there is in place an effective and stable management framework consistent with the overall manpower needs of the Sector.

It also facilitates the process of recruitment and placement, employee orientation and induction, retraining, motivation and staff development on a continuing basis for the efficient discharge of their duties. Moreover, it ensures that there is in place an effective and stable HR policy and management framework consistent with the overall manpower needs of the Sector.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Organize workshop on Civil Service Rules and Regulations	Number of Workshops	2	2	4	0	4	4	4	4
Organize HR Forum/ workshop with sector Agencies/Departments to discuss HR issues	Programme undertaken and report generated	2	1	4	0	4	4	4	4
Scheme of Service Training programmes for all categories of staff	Number of staff trained and reports produced	20	21	20	22	20	20	20	20
Workshop organized on Cabinet Memo for the Leadership of the Ministry	Workshop undertaken and report available	2	2	2	0	2	2	2	2
Promotion interviews organized	Promotions interview reports available	24	24	20	16	20	20	20	20
Annual Staff Performance Appraisal Report	Report submitted to OHCS by	31st January	17th February	31st January	-	31st January	31st January	31st January	31st January

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Staff trained and capacity developed	Number of officers trained	20	84	40	81	40	40	40	40
Participation in local and International training/ conference	No. of officers (%) who attended various training/ conferences	20	26	30	31	30	30	30	30

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme.

Operations	Projects
Staff audit	No Project
Human Resource database	
Scheme of service training	
Recruitment, placement and promotions	
Personnel and staff management	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021｜**Currency:** GH Cedi

	2021	2022	2023	2024
01701003 - Human Resource	**162,598**	**162,598**	**162,598**	**162,598**
22 - Use of goods and services	162,598	162,598	162,598	162,598

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 1: MANAGEMENT AND ADMINISTRATION

SUB-PROGRAMME 1.4: Policy, Planning, Budgeting, Monitoring and Evaluation

1.   Budget Sub-Programme Objective

To strengthen the capacity for planning, policy analysis, budgeting, monitoring and evaluation, data collection and analysis for the sector.

2.   Budget Sub-Programme Description

This sub-programme ensures that the sector projects and programmes are in line with national development agenda by developing appropriate policies, programmes and projects. PPBME ensures internal information dissemination, the compilation of the sector budget as well as monitoring and evaluating the effective implementation of policies, programmes and projects of the sector.

It is responsible for the development of comprehensive and sustainable policies, legislations, plans, programmes and resource flow to the sector in collaboration with relevant stakeholders.

It caters for the design and application of monitoring and evaluation systems for purposes of assessing the operational effectiveness of the Ministry, its implementing departments and agencies as well as the activities of other key stakeholders in meeting the sector's short, medium and long-term objectives and targets.

The sub-programme activities include:
- Strengthen capacity for effective policy planning, budgeting, monitoring and evaluation of the sector activities;
- Ensure effective implementation of the sector programmes and projects in the Sector Medium Term Development Plan (SMTDP);
- Prepare, coordinate and manage the approved sector budget;
- Prepare the sector strategic, medium term and action plans; and
- Ensure cohesion and successful implementation of all projects and programmes.
- Implementation of the German Financed E-waste Projects

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Annual monitoring and evaluation report	Annual M&E report produced and disseminated by	31st March	31st March	31st March	Feb 2020	31st March	31st March	31st March	31st March
MDA Annual Action Plan	Annual MESTI Sector plan prepared by	Jan.	Jan.	Jan.	Jan.	Jan.	Jan.	Jan.	Jan.
Performance Reviewed	Performance indicators updated and reported on to NDPC by	July 2018	July 2018	July 2019	Report submitted	July 2020	July 2021	July 2022	July 2023
	Prepare Annual Performance Report to OHCS by	15th Jan.	15th Jan.	15th Jan.	16th Jan.	15th Jan.	15th Jan.	15th Jan.	15th Jan.
	Number of quarterly progress reportsproduced	4	4	4	4	4	4	4	4

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Sector budget Prepared	Sector budget prepared, presented and approved by	Dec 2019	Dec 2019	Dec 2020.	March 2021	Dec. 2021	Dec. 2022	Dec. 2023	Dec. 2022
Annual Budget Performance report	Report submitted by	31st March	31st March	31st March	29th March 2020	31st March	31st March	31st March	31st March
Hand Over Centre (HOC) constructed for E-waste project	HOC constructed by	Commence construction	Pre-design studies on-going -	Commence Construction	Contractor procured	Complete Construction	Operationalize the HOC	Operationalize the HOC	Operationalize the HOC
E-waste types purchased at Agbogbloshie	Tonnes of e-waste purchased	-	-	15	40	50	80	100	100
Implement National Anti-Corruption Action Plan (NACAP)	NACAP report submitted to CHRAJ by	N/A	-	15th Jan.	Jan. 2020	15th Jan.	15th Jan.	15th Jan.	15th Jan.

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme

Operations	Projects
Planning and Policy Formulation	Recycling and Disposal of Waste of Electrical and Electronic Equipment in an Environmentally Sound
Policies and Programme Review Activities	Construction of Handover Center (HOC) for e-waste.
Management and Monitoring Policies, Programmes and Projects	
Evaluation and Impact Assessment Activities	
Budget Preparation	
Budget Performance Reporting	
Implement National Plastic Management Policy	
Develop National policy on E-waste Management.	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01701004 - Policy, Planning, Budgeting, Monitoring an	**14,059,415**	**14,059,415**	**14,059,415**	**14,059,415**
22 - Use of goods and services	3,411,377	3,411,377	3,411,377	3,411,377
31 - Non financial assets	**10,648,038**	**10,648,038**	**10,648,038**	**10,648,038**

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 1:   MANAGEMENT AND ADMINISTRATION

SUB-PROGRAMME 1.5: Statistics, Research, Information and Public Relations

1.   Budget Sub-Programme Objective

To improve and strengthen access to and apply ICT in data management and disseminate sector relevant information to stakeholders and the general public.

2.   Budget Sub-Programme Description

This sub-programme conducts research relevant to the sector to inform policy formulation and disseminates research finding on environment, science and technology research and to act as liaison between the Ministry and its partners/collaborators.

It is responsible for the design, use, maintenance and development of research and statistics as input into a central database for service-wide use. It coordinates all activities relating to information gathering, processing and dissemination for all the Ministry's organizations and stakeholders. Its main functions include the following;

- To protect the good image of the sector, within and outside the country, by disseminating sectoral information on its policies, activities and procedures;

- To create favourable atmosphere for the effective functioning of the sector by promoting and maintaining cordial working relationships with the other directorates in the sector and with its clients and stakeholders;

- To provide a system of feedback to stake-holders, and clients of the sector;

- To create and maintain a data bank of information on the sector for decision-making; and

- To conduct research into sectoral activities with a view to remove bottle-necks and enhancing its service delivery standards.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Dissemination of sector information to the general public	Number of public fora on environment and STI held	30	20	20	27	30	30	30	30
Response to petitions from the general public	Response provided within	20 days	14 days	14 days		20 days	20 days	20 days	20 days
Development and update of database	Number of periodic updates on MESTI's website	30	44	40	31	40	40	45	50

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme

Operations	Projects
Development and management of database	
Software acquisition and development	
Software licensing and support	
Media Relations	
Information, Education and Communication	
Publication, campaigns and programmes	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01701005 - Statistics; Research; Information and Public	**130,078**	**130,078**	**130,078**	**130,078**
22 - Use of goods and services	130,078	130,078	130,078	130,078

BUDGET PROGRAMME SUMMARY

PROGRAMME 2: RESEARCH AND DEVELOPMENT

1.   Budget Programme Objective

To promote and develop Science, Technology and Innovation in all sectors of the economy for socio-economic development.

2.   Budget Programme Description

This programme involves the promotion of nuclear technology, scientific and industrial research. The Council for Scientific and Industrial Research (CSIR) and the Ghana Atomic Energy Commission (GAEC) harness science and technology expertise for sustainable agricultural production, meat and fish preservation, irrigation, good water supply, environmental management, housing, road construction, information packaging and dissemination. The programme also involves the application of space science technology.

In addition, Science and technology is utilized to promote the peaceful use of nuclear science and technology research including health and medical research, training and development, regulation of radioactive materials and installations.

2.7. Budget by Chart of Account

7- MDA Sub-Programme and Natural Account Summary

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021│**Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
01702 - Research And Development	**273,383,111**	**272,946,331**	**272,946,331**	**272,946,331**
01702001 - Scientific And Industrial Research	**186,824,530**	**186,824,530**	**186,824,530**	**186,824,530**
21 - Compensation of employees [GFS]	151,709,941	151,709,941	151,709,941	151,709,941
22 - Use of goods and services	28,949,821	28,949,821	28,949,821	28,949,821
31 - Non financial assets	6,164,767	6,164,767	6,164,767	6,164,767
01702002 - Nuclear Science And Space Science Technology	**86,558,581**	**86,121,801**	**86,121,801**	**86,121,801**
21 - Compensation of employees [GFS]	55,488,801	55,488,801	55,488,801	55,488,801
22 - Use of goods and services	20,149,541	19,712,761	19,712,761	19,712,761
27 - Social benefits [GFS]	532,164	532,164	532,164	532,164
28 - Other expense	1,989,767	1,989,767	1,989,767	1,989,767
31 - Non financial assets	8,398,309	8,398,309	8,398,309	8,398,309

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 2: RESEARCH AND DEVELOPMENT

SUB-PROGRAMME 2.1: Scientific and Industrial Research

1. Budget Sub-Programme Objective

Promote the application of Science, Technology and Innovation in all Sectors of the economy.

2. Budget Sub-Programme Description

CSIR utilises Science and technology expertise for the development of Sustainable agricultural production. Research is conducted to improve the cultivation of high yielding crops and for food preservation (i.e. rice, maize, oil palm, cowpea, plantain, roots and tubers and vegetables). CRI, SARI, PGRRI, OPRI, FRI and SRI undertake such research.

Poultry, Livestock, Fisheries and Aquaculture: The Animal, Food, Industrial and Water Research Institutes under the CSIR develop technologies for increasing meat, egg and fish production to sustain food and nutrition for the population. These Institutes also develop technologies and expertise for meat and fish preservation and management of post-harvest losses.

Water and sanitation: The Water, Industrial and Soil Research Institutes under the CSIR develop technologies for the siting of dams for irrigation and good water supply and management as well as reduction of water pollution and improved sanitation to enhance the health status of communities. These institutes utilize their capabilities for groundwater exploration, watershed management and protection of water bodies.

Rural Electrification and Bio Fuels: The CSIR through the Forest Research Institute of Ghana (FORIG) and Institute of Industrial Research (IIR) develop appropriate processing techniques for efficient utilization of Ghanaian lesser-known wood species. These institutes also promote the use of lesser known species for poles for rural electrification and production of bio fuels for generators.

Housing and Roads: The CSIR through FORIG and Building and Road Research Institute (BRRI) develops technologies for affordable housing delivery. They also provide expertise in road design and construction, and identification and analysis of all accident-prone locations (black spots), on road in the five main cities, namely Accra, Kumasi, Sekondi-Takoradi and Tamale.

Information Packaging and Dissemination, and ICT and STI policy: The CSIR facilitates policy research, packaging and dissemination of scientific information for national development through the Institute of Scientific and Technological Information (INSTI), Science and Technology Policy Research Institute (STEPRI), Commercial Unit at the Head Office (CCID-H/O) and other CSIR Institutes.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Biotechnology : - Germplasm collection, characterizatio n, conservation, and distribution nationwide	Number of Plant Accessions collected and conserved	6,500	7,957	1,500	1,355	2000	2500	2500	2500
	Number. of Plant Accessions distributed nation-wide	9,600	9017	600	732	800	1000	1000	1000
Development and transfer of improved crop varieties	Number. of improved crop varieties of crops developed and disseminated	10	12	14	20	16	20	20	20
Postharvest losses of food commodities reduced.	Number of postharvest technologies developed and transferred/pr omoted.	2	2	15	14	15	15	15	15

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Improved breeds of livestock/poultry/fishes developed	Number. of improved breeds of livestock/poultry/fishes developed	4	-	6	-	8	10	10	12
Landscape management systems or technologies resilient to climate change vulnerabilities in time and space	Number. of technologies for Sustainable management, conservation and utilization of forest resources developed	6	2	8	11	10	12	12	14
Control and elimination of water, air and soil borne diseases	Percentage reduction in rate of Morbidity, Morality and Poverty associated with NTDs.	6-8%	4-6%	8-10%	On-going	10-12%	12-15%	12-15%	15-17%
Development of essential materials and industrial products using local raw materials.	Number of artisans/stake holders trained on products developed from local raw materials	100	50	110	On-going	120	150	150	200
Promotion of renewable Energy systems for both domestic and	Number of Solar or Renewable energy systems promoted and installed	7	2	9	7	12	15	15	20

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
commercial buildings.	Number. of people trained in the promotion of renewable energy systems	1,380	50	100	83	150	200	200	250
Establishment of ICT Centre for the provision of electronics and computer engineering services.	Number of training sessions organized	6	2	8	14	10	12	15	20
	Number. of Software Solutions developed and/or Deployed	6	6	8	7	10	12	15	20
Number of baseline surveys and adoption studies of released crop varieties conducted.	Number of baseline surveys and adoption studies carried out on a crop variety	4	4	5	9	6	8	8	10
New industrial products developed	Number of new industrial/commercial products developed	-	-	10	7	10	10	10	10
Improved planting materials produced and sold	Number and type of planting materials produced	150 000 oil palm germinated seeds	170,000 Oil Palm Germinated Seeds	165,000	4,501,832	170,000	200,000	200,000	210,000

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
		135 000 oil palm seedings	104,450 Oil Palm Seedlings	140,000	50,727	150,000	180,000	180,000	200,000
		2,700 coconut seedlings	4,647 coconut seedlings	5,000	14,252	7,000	8,000	10,000	12,000

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme

Operations	Projects
Development and promotion of the application of science and technology	**Acquisition of Movable and Unmovable Assets**
Food Security and Poverty Reduction	Modernizing Agriculture in Ghana (MAG) Project
Climate Change, Environmental Management & Green Technology	Furniture Testing Machine
Biomedical and Public Health	Solar System Testing Machine
Material Science and Manufacturing	High Performance Computer (HPC)
Energy and Petroleum	
Electronics and ICT	
Science and People	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01702001 - Scientific And Industrial Research	**186,824,530**	**186,824,530**	**186,824,530**	**186,824,530**
21 - Compensation of employees [GFS]	**151,709,941**	**151,709,941**	**151,709,941**	**151,709,941**
22 - Use of goods and services	28,949,821	28,949,821	28,949,821	28,949,821
31 - Non financial assets	**6,164,767**	**6,164,767**	**6,164,767**	**6,164,767**

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 2: RESEARCH AND DEVELOPMENT

SUB-PROGRAMME 2.2: Nuclear and Space Science Technology

1.   Budget Sub-Program Objective

To develop and promote the utilization of nuclear, biotechnology, space science and other related technologies for socio-economic development through research, training and commercialization.

2.   Budget Sub-Program Description

This sub-program involves the promotion of science, technology and innovation through research and development in nuclear science and space science technologies in various sectors of the economy. The activities of this sub-program are carried out by the Ghana Atomic Energy Commission through its six (6) institutes and the Graduate school of Nuclear and Allied Sciences (SNAS). The activities of the institutes and the Graduate School are co-ordinated at the Head office with four hundred and eighty (480) staffs.

National Nuclear Research Institute (NNRI), the Radiation Protection Institute (RPI) and the Biotechnological and Nuclear Agriculture Research Institute (BNARI) were created earlier. Since then, three other institutes; Radiological and Medical Science Research Institute (RAMSRI), Space Science Technology Institute (GSSTI), the Nuclear Power Institute (NPI) in addition to the Graduate School of Nuclear and Allied Sciences (SNAS) have been created by the Commission. These are the Radiological and Medical Sciences Research Institute.

National Nuclear Research Institute (NNRI)

NNRI was established to promote and strengthen Nuclear Science and technology research, and training for the socio-economic development of Ghana. The programmes of the institute are carried out by one hundred and forty-four (144) staffs. Some of the researches and commercial activities carried out in Centres under the Institute include:

- Collaborate with Water Resources Commission to use isotopic techniques in assessing Recharge areas, sources of water and pollution in the 3 Northern Regions and the Central Region. This may be intensified to cover other parts of the country.
- The National Data Centre (NDC) receives and uses data for the verification to provide technical advice and support on matters pertaining to the verification of the Comprehensive Nuclear Test Ban Treaty (CTBT).
- Provides training in the use of a pelletron accelerator and a nuclear reactor to conduct studies and researches to address socio-economic problems.

- The Non-destructive Testing Centre- checks the integrity of mineral processing tanks, distillation columns at the Oil Refinery, and performs thickness gauging for corrosion assessment of LPG Storage Vessels.

Radiation Protection Institute (RPI)

RPI was established to provide an effective national regulatory framework for the protection of people, property, and environment, safety and security of radioactive materials and nuclear installations. The programmes of the institute are carried out by forty-eight (48) staff. Some of their activities include:

- Personnel monitoring by ensuring safe working conditions in the nuclear and related industries. E.g. medical x-ray diagnosis and mining Industries.
- Conducting Safety assessment of Base Stations before and after installation as well as monitoring of Radio frequencies for FM Stations and Mobile Phone companies.
- Transports nuclear waste for registration, processing and storage and also provides technical services to organisations on management of disused radioactive sources across the country.

Biotechnology and Nuclear Agriculture Research Institute (BNARI)

BNARI was established to research, develop and implement activities on safe applications of biotechnology and nuclear agriculture and transfer these technologies to end-users in order to enhance agricultural productivity, health delivery and industrialization. The programmes of the institute are carried out by one hundred and forty-one (141) staff. Some of their activities include:

- Irradiation of food products to reduce postharvest losses and increase shelf-life of agricultural produce.
- Development of integrated pest management (IPM) strategies for pests and vectors of Agricultural, medical and veterinary importance by using the sterile insect technique (SIT) for the control of insect pests.
- Rapid production of improved planting materials of food crops and ornamentals as well as training farmers in the production and use of organic compost.

Radiological and Medical Science Research Institute (RAMSRI)

The RAMSRI was established to carry out medical research, applying nuclear techniques to promote human health and nutrition. The programmes of the institute are carried out by thirty-three (33) staff. Activities include:

- Provide Research-based technical advice for Cancer Management and Treatment Studies for improving complication-free survival rates after radio-therapy.

- Researches into early detection, treatment and management of cancer and other degenerative conditions.

- Conducts research by using radiation and nuclear medicine Technologies to diagnose and manage diseases as well as monitor and evaluate health conditions like tuberculosis and other communicable diseases in Ghana.

School of Nuclear and Allied Science (SNAS)

The SNAS was established as a collaborative venture with the International Atomic Energy Agency (IAEA) and the University of Ghana to train Nuclear Scientists to sustain skills in science in Nuclear Technology for the sub-Region Apart from training Scientist at the Graduate and the PhD levels,

The programmes of SNAS are carried out by thirty-six (36) staff. SNAS collaboratively with the IAEA organises a Post-Graduate Education Course (PGEC) in Radiation Protection for radiological professionals in the sub-region.

Space Science Technology Institute (GSSTI)

The GSSTI is converting a 32-m dish from a communication antenna to a radio telescope at Kuntunse and assessing critical indicators of radio astronomy capabilities. It is planning to acquire a ground receiving station to enable the country capture relevant satellite images for that could be used by the aviation, meteorological, security and environmental protection agencies. The programmes of the institute are carried out by twenty-four (24) staff.

Nuclear Power Institute (NPI)

The Nuclear Power Institute was created to research and facilitate the introduction of nuclear power into the country's energy mix. The programmes of the institute are carried out by twenty-one (21) staff.

The institute continues to organise stakeholder and public sensitisation on adoption of nuclear energy while conducting research to locate candidate sites and to conduct comparative studies on the economic benefits of introducing nuclear power.

3. Budget Sub-Programme Results Statement

The table below indicates the main outputs, its indicators and projections by which the performance of this sub-programme is measured. The past data indicates Budget performance whilst the projections are the Agency's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Conduct Safety assessment of telecommunication base stations/cell sites (Conditional Compliance assessment)	Number of Base Stations Assessed.	400	373	600	809	550	600	700	750
Monitor Telecommunication masts/base stations	Number of masts/base stations monitored	1000	1,301	1,500	1,046	1,300	1,400	1,500	1,800
Monitor Occupational exposures for mine, industrial, medical, educational and research institution workers	Number of workers involved in the use of ionizing radiation monitored	700	632	1,000	1,997	1,200	1,400	1,600	1,800
Complete Production plant for protein bait to control fruit fly menace	Level of completion of Protein bait	100%	75%	100%	75%	80%	90%	100%	-
Radiation contamination assessment of Consumables	Number of samples analysed	700	400	500	166	700	750	800	850

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Conduct studies to select preferred site for the construction of a Nuclear Power Plant	Percentage of field data available from selected sites	40% Selection of preferred candidate sites	100% Completed the selection of candidate sites	30 % Field work performed to identify preferred site	Phase II: 10% completed	75 % Field work performed to identify preferred site	100% Complete identification of Preferred site	-	-
Organize Stakeholder and public sensitization meetings on adoption of nuclear power	Number of Public awareness, programmes organized	25	4	20	10	20	30	30	35
Scientific reports on the environment and human health impact of e-waste.	Number of research reports on the health impact of e-waste management in Ghana	7	4	8	2	10	10	10	12
Training of Welding and NDT professionals.	Number of welders/NDT personnel certified.	45	15	20	2	20	25	30	30
Research towards improving radiotherapy and cancer treatment.	Number of research conducted towards improving cancer treatment.	6	14	10	5	12	12	12	14

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Training and educating professionals	Number of radiation professionals trained	3 PhD 35 MPhil	2 PhD 36 MPhil	5 PhD 35 MPhil	2 PhD 27 MPhil	5 PhD 35 MPhil	5 PhD 40 MPhil	7 PhD 45 MPhil	10 PhD 50 MPhil
National quality assurance audit of diagnostic radiology practices.	Number of facilities audited	20	13	20	-	20	25	25	30

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme

Operations	Projects
Development, promotion and commercialization of nuclear research and technology	Protecting GAEC land - Construction of Fence wall
Monitor RF base stations	Commence 2nd Phase of Radio Astronomy Project
Monitor occupationally exposed workers	Re-Roofing of NNRI and NPI Office buildings
Undertake radiation contamination assessment of Consumables	
Establish Centralized Waste Processing Facility	
Implementation of borehole disposal system	
Radiation contamination assessment of Consumables i.e. food and water	
Conduct quality assessment on diagnostic radiology and radiotherapy equipment	
Improve radiotherapy and cancer treatment research	
Conduct stakeholder and public sensitisation on the Adoption of Nuclear Power	
Conduct siting and feasibility towards introduction of nuclear power – Commencement of Phase 2 activities	

Operations	Projects
Development, promotion and commercialization of nuclear research and technology	Protecting GAEC land - Construction of Fence wall
Monitor RF base stations	Commence 2nd Phase of Radio Astronomy Project
Monitor occupationally exposed workers	Re-Roofing of NNRI and NPI Office buildings
Undertake radiation contamination assessment of Consumables	
Estimate crop yield using earth observation	
Establish Welding and NDT training facility.	
Application of isotopes techniques in sustainability and pollution vulnerability assessment of water resources including major river basins and groundwater.	
Crop production - Multiply five cassava and cherry tomatoes varieties	
Production of pro GARI and Sobolo tea	
GAEC International obligation - **Subscriptions**	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01702002 - Nuclear Science And Space Science Technol	**86,558,581**	**86,121,801**	**86,121,801**	**86,121,801**
21 - Compensation of employees [GFS]	**55,488,801**	**55,488,801**	**55,488,801**	**55,488,801**
22 - Use of goods and services	20,149,541	19,712,761	19,712,761	19,712,761
27 - Social benefits [GFS]	532,164	532,164	532,164	532,164
28 - Other expense	1,989,767	1,989,767	1,989,767	1,989,767
31 - Non financial assets	**8,398,309**	**8,398,309**	**8,398,309**	**8,398,309**

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 2: RESEARCH AND DEVELOPMENT

SUB-PROGRAMME 2.3: Commercialisation of Research

1.   Budget Sub-Programme Objectives

- To commercialize and transfer research results and technologies to end-users in order to enhance agricultural productivity, health delivery and industrialization.
- To generate revenue, to supplement government of Ghana funds for research.

2.   Budget Sub-Programme Description

The CSIR is mandated by ACT 521 to pursue the implementation of scientific research and development and commercialisation of appropriate technologies in partnership with the Private Sector and other stakeholders for national development. Act 588 (2000) mandates the Ghana Atomic Energy Commission to pursue the commercial application of nuclear research in the areas of health, agriculture, industry and commerce.

This sub-programme promotes the commercialisation and application of scientific research in partnership with the Private Sector and other stakeholders for national development.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Nuclear Technologies commercialized	Number of technologies developed	2	3	2	2	2	2	3	3
Nuclear products and services including consultancy and training commercialized	Number of products, services offered	28	32	30	60	40	45	50	55

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme

Operations	Projects
Create public awareness for Scientific and Technological products and services	Establishment of sale centres
Undertake Science and Technology outreach programmes	Purchase of distribution vans
Develop contacts with potential users of S&T products and services	Establishment of product processing centres
Create awareness about the benefit of nuclear energy and potential hazards of radioactive materials and installations	Establishment of sale centres
Create public awareness for Scientific and Technological products and services	

BUDGET PROGRAMME SUMMARY

PROGRAMME 3: ENVIRONMENT PROTECTION AND MANAGEMENT

1.   Budget Programme Objectives

- To ensure better use of ecosystem services and natural resources, for purposes of poverty reduction and sustainable development; and
- To enhance the application of Act 490 and its regulations, to reduce environmental impacts, control environmental degradation and enhance restoration of degraded resources.
- To enhance the implementation of ACT 895, to provide for the regulation and management of activities and practices for the peaceful use of nuclear material or energy, radioactive material or radiation; to provide for the protection of persons and the environment against the harmful effects of radiation hazards; to ensure the effective implementation of the country's international obligations and for related matters.

2.   Budget Programme Description

This programme aims at protecting and improving the environment in Ghana by ensuring that air, land and water are protected by everyone in today's society, so that tomorrow's generation inherit a cleaner and healthier world. In achieving the overall aim of managing and governing the environment this programme outlines activities and programmes that seek to:

- Create awareness to mainstream environment into the development process at the national, regional, district and community levels;
- Ensure that the implementation of environmental policy and planning are integrated and consistent with the country's desire for effective, long-term maintenance of environmental quality;
- Ensure environmentally sound and efficient use of both renewable and non-renewable resources in the process of national development;
- Guide development to prevent, reduce, and as far as possible, eliminate pollution and actions that lower the quality of life;
- Apply the legal processes in a fair and equitable manner to ensure responsible environmental behaviour in the country; and
- Continuously improve EPA's performance to meet changing environmental trends and community aspirations.

The programme is delivered by the Environmental Protection Agency (EPA) and Nuclear Regulatory Authority (NRA) through their Departments and Units in collaboration with various government funded organizations, Development Partners and the Ministry of Environment, Science, Technology and Innovation.

The programme is funded from the Government of Ghana, Internally Generated Funds and Development Partners.

2.7. Budget by Chart of Account

7- MDA Sub-Programme and Natural Account Summary

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
01703 - Environmental Protection And Management	**143,043,184**	**143,043,184**	**143,043,184**	**143,043,184**
01703002 - Environmental Education Information And Commu	**50,693,124**	**50,693,124**	**50,693,124**	**50,693,124**
21 - Compensation of employees [GFS]	50,693,124	50,693,124	50,693,124	50,693,124
01703001 - Environmental Compliance And Enforcement	**76,039,686**	**76,039,686**	**76,039,686**	**76,039,686**
22 - Use of goods and services	50,222,780	50,222,780	50,222,780	50,222,780
27 - Social benefits [GFS]	2,750,000	2,750,000	2,750,000	2,750,000
28 - Other expense	255,000	255,000	255,000	255,000
31 - Non financial assets	22,811,906	22,811,906	22,811,906	22,811,906
01703003 - Enforcement and Compliance of ionizing and non-	**16,310,374**	**16,310,374**	**16,310,374**	**16,310,374**
21 - Compensation of employees [GFS]	10,225,609	10,225,609	10,225,609	10,225,609
22 - Use of goods and services	4,734,725	4,734,725	4,734,725	4,734,725
27 - Social benefits [GFS]	220,000	220,000	220,000	220,000
31 - Non financial assets	1,130,040	1,130,040	1,130,040	1,130,040

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 3: ENVIRONMENTAL PROTECTION AND MANAGEMENT

SUB-PROGRAMME 3.1: Environmental Compliance and Enforcement

1. Budget Sub-Programme Objective

To undertake environmental assessment and ensure compliance with Act 490 and its regulations in order to avoid pollution and environmental degradation as well as stimulate sustainable development.

2. Budget Sub-Programme Description

This sub-programme is coordinated and implemented by the Environmental Protection Agency through the Environmental Quality, Manufacturing Industries, Mining, Natural Resources, Environmental Assessment and Audit, Petroleum, Built Environment and legal Departments as well as Chemicals Control and Management Centre.

This sub-programme is undertaken in collaboration with other stakeholders such as MDAs, MMDAs, Civil Society Organizations and the private sector. The Core areas of this sub-programme are:
- Providing technical advice on assessments;
- Compliance monitoring;
- Support identification and dissemination of best practices;
- Coordinating -activities associated with Environmental Assessment, compliance and enforcement;
- Environmental research and monitoring of air and water quality; and
- Management of chemicals, hazardous wastes (chemical and e-waste), pesticides and ozone depletion.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Improved compliance with sector specific EA guidelines and standards.	Percentage of sectors covered by EA: - oil and gas exploration, - agriculture	100% 70%	100% 67%	100% 75%	100% 68%	100% 80%	100% 85%	100% 88%	100% 90%
Operationalise the National Oil Spill Plan	Number of simulation exercises undertaken	1	2	1	1	1	1	1	1
Give approval (EA and EMP permits) to companies for them to comply with Environmental Assessment (EA) regulations	Number of permits issued	5,612	7,621	6,173	11,506	6790	7,100	8,500	9,000
Sample and analyse level of pollution of effluent quality from industries	Number of industries monitored for effluent quality	75	165	80	141	85	90	120	145
Undertake annual compliance monitoring	Number of Annual compliance monitoring events: Accra Other Regions	4 11	5 11	5 12	5 14	6 13	7 14	8 15	8 15

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Monitoring of environmental indicators - air quality	Number of monitoring locations (Accra + regions)	16 sites	14 sites	18 sites	23 sites	20 sites	22 sites	24 sites	24 sites
Develop register on pesticides and industrial and consumer chemicals for proper handling and labelling	Copy of a completed Register	1	1	1	1	1	1	1	1
Carry out pesticides/ industrial chemicals post registration and licensing/compliance monitoring and surveillance	Number of monitoring undertaken	1	1	1	18	10	10	10	10
Monitor industries to ensure the use of bio-oxo degradable additives in the manufacture of flexible Plastics	Number of industries monitored	29	32	31	0 (due to covid-19)	33	35	36	37
Develop a system that effectively and rapidly responds and deal with chemical related emergencies nationwide	Percentage completion of the system	60%	45%	60%	On-going with Ministry of Health	80%	100%	Implement plan	Implement plan
Incorporate climate change issues into sector medium term plans	Number of sectors with climate change mitigation and adaptation strategies	9	9	10	9	11	12	13	14

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme.

Operations	Projects
Environmental compliance and enforcement	Renovations and purchase of office equipment
Environmental Education and Awareness Creation	Solar equipment at the Head office and Regional offices
Environmental quality monitoring	
Development of adequate legal framework for environmental management	Office equipment & Office supplies
Design and supervision of infrastructural projects	Logistics
Waste management (Source waste segregation, Plastic waste Management, E-waste Management)	Africa Environment Health and Pollution Management Program

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01703001 - Environmental Compliance And Enforceme	**76,039,686**	**76,039,686**	**76,039,686**	**76,039,686**
22 - Use of goods and services	50,222,780	50,222,780	50,222,780	50,222,780
27 - Social benefits [GFS]	2,750,000	2,750,000	2,750,000	2,750,000
28 - Other expense	255,000	255,000	255,000	255,000
31 - Non financial assets	**22,811,906**	**22,811,906**	**22,811,906**	**22,811,906**

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 3. ENVIRONMENTAL PROTECTION AND MANAGEMENT

SUB-PROGRAMME 3.2: Environmental Education, Information and Communication

1.   Budget Sub-Programme Objective

To enhance understanding on environmental issues through awareness creation in the media, and also through environmental education and community-based initiatives.

2.   Budget Sub-Programme Description

The EPA as part of its core mandates as stated in Act 490 is enjoined to create awareness on environmental challenges facing the nation thereby ensuring that the environment is mainstreamed into every development process either at the national, regional, and district or community level. This sub-program is aimed at sensitizing citizens to take charge of their environment in order to promote sustainable use of every natural resource. The core areas of this sub-programme are:

- Stimulate environmental education in formal & non-formal education systems;
- Develop supportive materials for educational institutions;
- Stimulate community environmental initiatives and programmes; and
- Ensure effective use of available environmental information and data.

These activities are coordinated under the auspices of the Environmental Protection Agency with the following departments as the key implementers:

- Education Department;
- Environmental Information and Data Management Department;
- Public Affairs Department;
- Chemicals Control and Management Centre; and
- EPA Training School.

The Media, Academic and Research Institutions collaborate with these departments in executing the above activities.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
E-waste recyclers trained on sustainable management of e-waste	Number of trainings undertaken.	3	6	4	5	5	6	8	10
Stakeholders trained on pesticide regulation and safe/judicious use of pesticides.	Number of training exercise undertaken on safe handling of pesticides	5	3	6	9	7	8	10	12

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme

Operations	Projects
Environmental protection and Education	Computers and accessories
Environmental Education and awareness raising	Vehicles
Ghana Environmental Information System (including automation of the Agency's processes and activities)	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021│**Currency:** GH Cedi

	2021	2022	2023	2024
01703002 - Environmental Education Information And	**50,693,124**	**50,693,124**	**50,693,124**	**50,693,124**
21 - Compensation of employees [GFS]	**50,693,124**	**50,693,124**	**50,693,124**	**50,693,124**

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 3. ENVIRONMENTAL PROTECTION AND MANAGEMENT

SUB-PROGRAMME 3.3 Enforcement and Compliance of Ionizing and Non-Ionizing Radiation

1.   Budget Sub-Programme Objective

To ensure the protection of humans and the environment from the harmful effects of radiation.

2.   Budget Sub-Programme Description

The NRA Act 895, established the Nuclear Regulatory Authority in 2016 to provide for the regulation and management of activities and practices for the peaceful use of nuclear material or energy, radioactive material or radiation;

This sub-programme seeks to provide for the protection of persons and the environment against the harmful effects of radiation hazards; to ensure the effective implementation of the country's international obligations and for related matters. Core functions include;

- Regulate the introduction of radiation sources, nuclear materials, equipment or practices that expose workers, patients, the public and the environment to radiation.

- Issue, modify, suspend or revoke authorization and determine conditions for authorization.

- Regulate research on radiation and nuclear safety and security, and of radioactive waste matters.

- Regulate the use of radioactive materials in the exploration, exploitation and extraction of oil and gas, and the mining and milling of radioactive ores and other ores associated with radioactive and nuclear materials.

- Define the detailed obligations to be placed on persons who possess radiation sources and nuclear materials, including financial conditions.

- Establish and maintain a national register of radiation sources and of persons authorized to carry out any activity or practice related to a source of radiation.

- Collect information, documents and views from private and public organizations or persons as may be necessary and appropriate for the discharge of its functions.

- Collaborate with agencies responsible for emergency to establish plans and procedures for coping with any radiological emergency and abnormal occurrence involving a nuclear material, radiation source or any other radioactive source.

- Ensure that the operators provide training, information and guidance on nuclear safety, security and safeguards and radiation protection of the public.

- Educate the public on nuclear and radiation matters.

- Establish regional and other offices as it may consider necessary for the proper performance of its functions.

- Facilitate the conduct of inspections by designated inspectors of the International Atomic Energy Agency to verify design information, inspections and complementary access as provided for in the safeguards agreement and the additional protocols.

- Collect, collate and provide information to the International Atomic Energy Agency in accordance with the safeguards agreement and any additional protocols to the agreement.

- Exchange information and co-operate with regulatory authorities of other countries and relevant international organizations on matters of nuclear safety, nuclear security and safeguards.

- Collaborate with the Environmental Protection Agency to identify activities and practices that may require Environmental Impact Assessment and develop environmental guidelines for those activities and practices.

- Ensure that the polluter pays principle is applied in the management of nuclear and radioactive waste in the country.

- Review nuclear safety assessment and safety analysis reports from authorized persons;

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Users of radiation complying with provisions of the regulations and guidance documents	Number of users of radiation applying the regulations and guidance documents	200	361	270	115	300	350	400	450
General public and users of radiation sources educated	Number of education events held	300	361	320	115	330	350	360	370
Up-to-date National register of radiation sources and of persons authorized to carry out any activity or practice related to a source of radiation.	Number of new facilities added to the register	100	80	100	110	100	100	100	100
Regulations for the control of ionizing and non-ionizing radiation*	Number of regulations drafted	6	2	6	3	6	6	6	6
Guidance documents for the	Number of regulations reviewed internally	6	1	6	3	6	6	6	6

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
control of ionizing and non-ionizing radiation; and radiation devices available.	Number of regulations ready for Board's approval/approved by Board	6	3	6	4	6	6	6	6
	Number of Guidance documents drafted and reviewed	10	15	10	2	10	17	5	5
Compliance by users of radiation sources and devices to Regulatory Requirements.	Number of facilities inspected and authorised	250	223	270	115	310	350	390	430
	Number of radioactive sources and devices authorised	-	-	700	368	800	900	950	1000
	Number of permits issued	200	151	210	260	220	230	240	250
Non-compliance issues Resolved	Number of enforcement notices issued	25	13	27	11	31	35	39	40

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub-programme

Operations	Projects
Recruit 60 technical and Support staff for the Nuclear Regulatory Authority.	Acquire software for regulatory activities
Conduct regulatory inspections and enforcement of radiation facilities and activities	Acquire 2 vehicles for regulatory activities
Staff capacity development in local and foreign institutions in areas related to management, public administration, and in preparation towards the implementation of Ghana's Nuclear Power Programme	Acquire monitoring and laboratory equipment
Draft regulations and guidance documents	Acquire computers and accessories
Educate key stakeholders and public on radiation matters	
Develop and validate Human Resources documents	
Host/participate in local, regional and international meetings/workshops	
Consultancy support for regulatory work development	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021│**Currency:** Ghanaian Cedi (GHS)

	2021	2022	2023	2024
01703003 - Enforcement and Compliance of ionizing a	**16,310,374**	**16,310,374**	**16,310,374**	**16,310,374**
21 - Compensation of employees [GFS]	**10,225,609**	**10,225,609**	**10,225,609**	**10,225,609**
22 - Use of goods and services	4,734,725	4,734,725	4,734,725	4,734,725
27 - Social benefits [GFS]	220,000	220,000	220,000	220,000
31 - Non financial assets	**1,130,040**	**1,130,040**	**1,130,040**	**1,130,040**

BUDGET PROGRAMME SUMMARY

PROGRAMME 4: SPATIAL PLANNING AND HUMAN SETTLEMENT

1. Budget Programme Objective

To promote efficient and effective planning and management of human settlements and ensure compliance with guidelines, standards and regulations to support socio-economic development.

2. Budget Programme Description

This programme relates to promoting orderly development of human settlements through preparation and management of the requisite spatial plans and backed by adequate research and capacity building. Key interventions under this programme relate to:

- Planning and management of physical development and growth of human settlements in the country. This is to ensure that all organised human activities within our cities, towns and villages are undertaken in a planned manner and managed properly;

- Preparation of spatial and land use plans. This involves preparation of Spatial Development Frameworks, Structure and Local Plans to help distribute people and activities in space and human settlements of various scales;

- Monitoring settlement growth and controlling development to ensure that human settlements function as healthy places for residence, work and recreation. This is facilitated through efficient and effective development permitting regimes;

- Undertaking continuous research with the aim of improving national planning, zoning guidelines and standards, as well as planning policy and legislation;

- Building capacity for effective planning and management of human settlements; and

- Ensuring compliance with planning regulations on human settlements and land use plans through public education and awareness creation.

2.7. Budget by Chart of Account

7- MDA Sub-Programme and Natural Account Summary

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021│**Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
01704 - Spatial Planning And Human Settlement	**8,554,963**	**6,067,450**	**6,067,450**	**6,067,450**
01704001 - Human Settlement and Land Use Research and Pol	**8,554,963**	**6,067,450**	**6,067,450**	**6,067,450**
21 - Compensation of employees [GFS]	7,858,115	5,370,602	5,370,602	5,370,602
22 - Use of goods and services	696,848	696,848	696,848	696,848

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 4: SPATIAL PLANNING AND HUMAN SETTLEMENT

SUB-PROGRAMME 4.1: Human Settlements and Land Use Research and Policy

1.   Budget Sub-Programme Objectives

- To undertake research and formulate appropriate policies aimed at enhancing the planning and management of land use and human settlements in Ghana.
- To collect baseline information on land use and human settlement development trends to facilitate project impact monitoring.

2.   Budget Sub-Programme Description

This sub-programme focuses on data gathering and appropriate research and policy required to enhance land use planning, urbanization management and general human settlement development. Key interventions under this sub-programme relate to:

- Data gathering and research on human settlements and urban development;
- Development and revision of zoning guidelines and planning standards;
- Preparation of manuals for the preparation of spatial plans;
- Review of permitting processes with the view to enhance turn-around times and client services;
- Formulation of human settlement policy;
- Review and passage of requisite legislation on spatial planning; and
- Institutional reforms for town and country planning in Ghana.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
National zoning regulations and planning standards published and Distributed (New /revised edition from 2021)	Number. of published guidelines on zoning regulations and planning standards distributed	300	0	300	0	300	50	50	50
Reviewed Manuals for spatial plan completed (Revised editions from 2021)	Number of spatial planning manuals distributed	300	0	300	0	300	50	50	50
Development permitting procedures and business manual	Number of permitting guides and business manual distributed	300	0	350	0	100	100	100	100
Staff recruited for LUSPA Functional Regional Spatial Planning Committees established.	Number of Physical Planners recruited	100	132	50	132	-	25	25	25
	Number of RSPCs inaugurated	10	10	6	16	-	-	-	-
Head office complex of	% completion level of	40%	0 %	40%	0%	30%	60%	90	100

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
LUSPA completed	office building								
Training on permitting guidelines	Number of (MMDAs) DSPCs with training on permitting guidelines	-	-	29	29	231	-	-	-
Training on the Land use and spatial Regulations (LI 2384)	Number of MMDAs trained on LI 2384	-	-	16	1	150	110	-	-
Human Settlement Policy	Human Settlement Policy (% Level of completion)	-	-	1	0	80	100	-	-

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken under the programme

Operations	Projects
Revise the National zoning regulations and planning standards	Construction of LUSPA Office Complex
Organize Monitoring Visits to 16 RCCs and 260 MMDAs	
Formulate Human Settlement Policy	
Train MMDAs on the Land use and spatial Planning Regulations (LI 2384)	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01704001 - Human Settlement and Land Use Research	**8,554,963**	**6,067,450**	**6,067,450**	**6,067,450**
21 - Compensation of employees [GFS]	**7,858,115**	**5,370,602**	**5,370,602**	**5,370,602**
22 - Use of goods and services	696,848	696,848	696,848	696,848

BUDGET SUB-PROGRAMME SUMMARY

BUDGET PROGRAMME 4: SPATIAL PLANNING AND HUMAN SETTLEMENT

SUB-PROGRAMME 4.2: Geographic Information Systems Development

1.   Budget Sub-Programme Objective

To enhance efficiency in land use planning and human settlement management.

2.   Budget Sub-Programme Description

This sub-programme is about upgrading and expanding the application of the Land Use Planning and Management Information System (LUPMIS) and integrating it into the National Spatial Data Infrastructure (NSDI) of Ghana. The sub-programme also looks at intensive and coordinated capacity building to ensure that human settlement planning and management becomes efficient and clients are well served. The main elements of this sub-programme are:

- Upgrading of LUPMIS;
- Integration of the LUPMIS with the NSDI;
- Development of additional GIS applications for enhanced spatial planning and management;
- Training in the application of LUPMIS for stakeholders at various learning levels e.g. advanced, intermediate and basic training.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

| Main Outputs | Output Indicator | Past Years | | | | Projections | | | |
| | | 2019 | | 2020 | | Budget Year 2021 | Budget Year 2022 | Budget Year 2023 | Budget Year 2024 |
		Target	Actual	Target	Actual				
GIS training organized for all MMDAs	Number of MMDAs (stakeholders) with GIS Training Received (Reports available)	254 MMDAs	260 MMDAs trained on QGIS	260	0	260	260	260	260

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken under the programme

Operations	Projects
Organize GIS (QGIS) training on spatial plan preparation	

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 4: SPATIAL PLANNING AND HUMAN SETTLEMENT

SUB-PROGRAMME 4.3: Spatial Plan Preparation

1.   Budget Sub-Programme Objectives

- To implement the new spatial planning model involving preparation of spatial development frameworks, structure and local plans;
- To integrate spatial planning into the national and local development planning process facilitated by NDPC;
- To promote orderliness in the development of human settlements as places of residence, work and recreation.

2.   Budget Sub-Programme Description

This sub-programme looks at the logical model for spatial planning and development of urban and rural settlements. The main levels of spatial plans required ensuring an orderly and coordinated delivery of infrastructure and services are:

- Preparation of Spatial development frameworks for the national as well as the ten regions and some sub-regional enclaves;
- Preparation of structure plans for all major settlements in the country;
- Preparation of local plans for all developing sections of towns and villages;
- Building capacity for preparation of spatial plans

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Ministry's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Regional Spatial Development Frameworks	Number of RSDF's prepared	1 Central Region	0	1	0	2	1	1	1
Slum and housing study reports	Number of slum and housing studies undertaken	0	0	0	0	2	2	2	2
District Spatial Development Frameworks	Number of District Spatial Development Frameworks	50	0	20	1	2	3	3	2
Structure Plans for major settlements prepared for MMDAs	Number of Structure Plans prepared (for MMDAs)	50	0	20	2	2	3	3	3
Monitoring and Evaluation visits on RSPCs and MMDAs	Number of M & E visits to RSPAs	10	16	16	0	16	16	16	16
	Number of M & E visits to MMDAs	254	110	100	0	260	260	260	260

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Regional Spatial Development Frameworks	Number of RSDFs prepared	-	-	3	0	2	1	1	1
Information on Spatial plans (Structure and Local plan data from MMDAS available at LUSPA Head office	Database on Spatial Plans from MMDAs collected (Number of spatial plans data gathered)	-	-	-	-	Spatial Database on spatial plans commenced	Database updated	Database updated	Database updated
Information on Street Naming and Property Address System available at LUSPA head office	Database on Street Naming and Property Addressing available (Number of Street Shapes and Property addresses collected	-	-	-	166,000 addresses available	Updated database on SNPA	Updated database on SNPA	Updated database on SNPA	Updated database on SNPA
Report on topical urban planning related issues	Reports on urban planning research available on LUPSA's website (from 16 Regional Offices and Head office)	-	-	-	-	17	17	17	17

4. Budget Sub-Programme Operations and Projects

The table lists the main operations and projects to be undertaken under the programme

Operations	Projects
Land use and spatial planning	**Acquisition of Immovable and Movable Assets**
Set up the Land Use Planning and Development Fund	
Preparation of RSDFs, DSDFs, structure plans and local plans.	
Undertaking monitoring and evaluation exercise of the RSPA and MMDAs regarding spatial planning and management	
Undertake public awareness and education programmes on radio and television regarding planning education	

BUDGET PROGRAMME SUMMARY
PROGRAMME 5: BIOTECHNOLOGY DEVELOPMENT

1. Budget Programme Objectives

- To promote public awareness, participation and education concerning the activities of the Authority
- To liaise with any other agency or international organisations concerned with biotechnology and biosafety
- To receive, process, respond to and to make decisions on biosafety applications.

2. Budget Programme Description

The Biotechnology Development programme ensures an adequate level of protection in the field of safe development transfer, handling and use of genetically modified organisms resulting from biotechnology that may have an adverse effect on health and the environment. This programme is responsible for:

- Receiving, processing, responding to and to make decisions on biosafety applications;
- Establishing administrative mechanisms to ensure the appropriate handling and storing of documents and data in connection with the processing of applications and any other matters;
- Acting as the national focal point responsible for liaising with any other agency or international organisations concerned with biotechnology and biosafety; and
- Promoting public awareness, participation and education concerning the activities of the Authority.

2.7. Budget by Chart of Account

7- MDA Sub-Programme and Natural Account Summary

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021│**Currency:** GH Cedi
V_2021_Full_year

	2021	2022	2023	2024
01705 - Biosafety Development	**418,109**	**418,109**	**418,109**	**418,109**
01705001 - Biotechnology Regulation	**418,109**	**418,109**	**418,109**	**418,109**
22 - Use of goods and services	413,609	413,609	413,609	413,609
27 - Social benefits [GFS]	4,500	4,500	4,500	4,500

BUDGET SUB-PROGRAMME SUMMARY

PROGRAMME 5: BIOTECHNOLOGY DEVELOPMENT

SUB-PROGRAMME 5.1: Biosafety Regulation

1.   Budget Sub-Programme Objectives

- To effectively regulate the production and transfer of genetically modified organisms (GMOs).
- To educate the general public on biosafety issues.

2. Budget Sub-Programme Description

This sub-programme looks at regulating agencies and organisations that apply the principles of biosafety. This sub-programme is also responsible for implementing the Biosafety Act.

Major Operations to be undertaken include, to:

- Regulate the production and transfer of genetically modified organisms; and
- Educate the general public on biosafety issues.

3. Budget Sub-Programme Results Statement

The table indicates the main outputs, its indicators and projections by which the Ministry measures the performance of this sub-programme. The past data indicates Budget performance whilst the projections are the Authority's estimate of future performance.

Main Outputs	Output Indicator	Past Years				Projections			
		2019		2020		Budget Year 2021	Indicative Year 2022	Indicative Year 2023	Indicative Year 2024
		Target	Actual	Target	Actual				
Passage of Biosafety Regulations	Regulations submitted to parliament for passage	1	1	--	-	--	1	1	1
Biosafety public education materials	Number of materials	4	2	4	8	4	4	4	2
Biosafety staff trained on biosafety guidelines	Number of trainings conducted on Biotechnology and Biosafety guidelines.	4	4	6	5	6	5	5	5
Ensuring compliance with Biosafety guidelines	Number of permits issued.	2	2	2	1	2	2	2	2

4. Budget Sub-Programme Operations and Projects

The table lists the main Operations and projects to be undertaken by the sub- programme.

Operations	Projects
Development and Promotion of The Application of Science and Technology	**Acquisition of Immovable and Movable Assets**
Public education and awareness	Renovation of office building
Biosafety Monitoring and Inspection	
Training	
Development of Guidelines and application forms	

2.8. Budget by Chart of Account

8 - Sub-Programme and Natural Account

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Funding: All Source of Funding
Year: 2021 | **Currency:** GH Cedi

	2021	2022	2023	2024
01705001 - Biotechnology Regulation	**418,109**	**418,109**	**418,109**	**418,109**
22 - Use of goods and services	413,609	413,609	413,609	413,609
27 - Social benefits [GFS]	4,500	4,500	4,500	4,500

1.6. Appropriation Bill
Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Year: 2021 | **Currency:** GH Cedi
2021 Full Year Budget

	GoG				IGF				Funds / Others			Donors			Grand Total
	Compensation of employees	Goods and Services	Capex	Total	Compensation of employees	Goods and Services	Capex	Total	Statutory	ABFA	Others	Goods and Services	Capex	Total	
017 - Ministry of Environment Science, Technology and Innovation	227,191,633	11,145,653	5,500,000	243,837,286	53,703,162	95,091,543	33,112,353	181,907,058				16,053,993	16,040,707	32,094,700	457,839,044
01701 - Headquaters	3,176,291	8,125,979	5,500,000	16,802,270								3,200,000	10,648,038	13,848,038	30,650,308
0170101 - Finance and Administration	3,176,291	796,729		3,973,021											3,973,021
0170101001 - Admin Office	3,176,291	796,729		3,973,021											3,973,021
0170102 - Science and Technology Directorate		6,695,117	5,500,000	12,195,117											12,195,117
0170102001 - Science and Technology Office		6,695,117	5,500,000	12,195,117											12,195,117
0170103 - Policy, Planning, Monitoring and Evaluation		211,377		211,377								3,200,000	10,648,038	13,848,038	14,059,415
0170103001 - PPME Office		211,377		211,377								3,200,000	10,648,038	13,848,038	14,059,415
0170104 - RSIM Directorate		130,078		130,078											130,078
0170104001 - RSIM Office		130,078		130,078											130,078
0170105 - Human Resource Directorate		162,598		162,598											162,598
0170105001 - Human Resource Office		162,598		162,598											162,598
0170106 - Environment Directorate		130,078		130,078											130,078
0170106001 - Environment Office		130,078		130,078											130,078
01702 - Environmental Protection Agency					50,693,124	53,227,780	22,811,906	126,732,810							126,732,810
0170201 - Head Office					50,693,124	53,227,780	22,811,906	126,732,810							126,732,810
0170201001 - Gen. Admin Office					50,693,124	53,227,780	22,811,906	126,732,810							126,732,810
01703 - Town and Country Planning Department (T.C.P.D)	8,553,644	696,848		9,250,491											9,250,491
0170301 - Greater Accra Region	374,959			374,959											374,959
0170301001 - Greater Accra Regional Office	374,959			374,959											374,959
0170302 - Volta Region	83,789			83,789											83,789
0170302001 - Volta Regional Office	83,789			83,789											83,789
0170303 - Eastern Region	156,167			156,167											156,167
0170303001 - Eastern Regional Office	156,167			156,167											156,167
0170304 - Central Region	745,293			745,293											745,293
0170304001 - Central Regional Office	745,293			745,293											745,293

1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Year: 2021 | **Currency:** GH Cedi
2021 Full Year Budget

	GoG						IGF					Funds / Others			Donors			Grand Total
	Compensation of employees	Goods and Services	Capex	Total		Compensation of employees	Goods and Services	Capex	Total		Statutory	ABFA	Others	Total	Goods and Services	Capex	Total	
0170305 - Western Region	451,675			451,675														451,675
0170305001 - Western Regional Office	451,675			451,675														451,675
0170306 - Ashanti Region	210,152			210,152														210,152
0170306001 - Ashanti Regional Office	210,152			210,152														210,152
0170307 - Bono Regional Office	464,328			464,328														464,328
0170307001 - Bono Regional Office	464,328			464,328														464,328
0170308 - Northern Region	638,679			638,679														638,679
0170308001 - Northern Regional Office	638,679			638,679														638,679
0170309 - Upper East Region	338,359			338,359														338,359
0170309001 - Upper East Regional Office	338,359			338,359														338,359
0170310 - Upper West Region	449,150			449,150														449,150
0170310001 - Upper West Regional Office	449,150			449,150														449,150
0170311 - Head Office	3,242,530	696,848		3,939,378														3,939,378
0170311001 - Admin Office	3,242,530	696,848		3,939,378														3,939,378
0170312 - Oti Region	229,022			229,022														229,022
0170312001 - Oti Regional Office	229,022			229,022														229,022
0170313 - Bono East Region	316,962			316,962														316,962
0170313001 - Bono East Regional Office	316,962			316,962														316,962
0170314 - Ahafo Region	272,075			272,075														272,075
0170314001 - Ahafo Regional Office	272,075			272,075														272,075
0170315 - Savannah Region	189,584			189,584														189,584
0170315001 - Savannah Regional Office	189,584			189,584														189,584
0170316 - North East Region	209,966			209,966														209,966
0170316001 - North East Regional Office	209,966			209,966														209,966
0170317 - Western North	180,954			180,954														180,954
0170317001 - Western North Regional Office	180,954			180,954														180,954

1.6. Appropriation Bill
Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Year: 2021 | **Currency:** GH Cedi
2021 Full Year Budget

	GoG				IGF				Funds / Others			Donors			Grand Total
	Compensation of employees	Goods and Services	Capex	Total	Compensation of employees	Goods and Services	Capex	Total	Statutory	ABFA	Others	Goods and Services	Capex	Total	
01704 - Ghana Atomic Energy Commission (G.A.E.C)	54,215,656	696,848		54,912,503	1,445,501	17,004,624	4,998,309	23,448,433				4,970,000	3,400,000	8,370,000	86,730,937
0170401 - Head Office	30,558,206	426,848		30,985,054	1,043,458	10,961,317	3,100,241	15,105,016							46,090,069
017040101 - Admin Office	30,558,206	426,848		30,985,054	1,043,458	10,961,317	3,100,241	15,105,016							46,090,069
0170402 - National Nuclear Research Institute (N.N.R.I.)	4,901,180	40,000		4,941,180	222,633	2,313,931	702,505	3,239,069				1,000,000	1,500,000	2,500,000	10,680,249
017040201 - N.N.R.I. Office	4,901,180	40,000		4,941,180	222,633	2,313,931	702,505	3,239,069				1,000,000	1,500,000	2,500,000	10,680,249
0170403 - Biotechnology and Nuclear Research Institute (B.N.R.I)	4,321,661	50,000		4,371,661		472,546	182,654	655,200				800,000	400,000	1,200,000	6,226,861
017040301 - B.N.R.I Office	4,321,661	50,000		4,371,661		472,546	182,654	655,200				800,000	400,000	1,200,000	6,226,861
0170404 - Radiation Protection Institute (R.P.I)	2,260,230	40,000		2,300,230	179,410	1,555,277	447,995	2,182,682							4,482,912
017040401 - R.P.I. Office	2,260,230	40,000		2,300,230	179,410	1,555,277	447,995	2,182,682							4,482,912
0170405 - School of Nuclear and Allied Sciences	1,557,209	30,000		1,587,209		1,569,073	541,309	2,110,382							3,697,591
017040501 - School of Nuclear and Allied Sciences Office	1,557,209	30,000		1,587,209		1,569,073	541,309	2,110,382							3,697,591
0170406 - Radiological and Medical Sciences Research Institute	1,554,944	30,000		1,584,944		13,860	6,682	20,542							1,605,486
017040601 - Radiological and Medical Sciences Research Institute Office	1,554,944	30,000		1,584,944		13,860	6,682	20,542							1,605,486
0170407 - Nuclear Power Institute	7,927,444	30,000		7,957,444											7,957,444
017040701 - Nuclear Power Institute ffice	7,927,444	30,000		7,957,444											7,957,444
0170408 - Ghana Space and Tech. Inst.	1,134,781	50,000		1,184,781		118,620	16,924	135,544				3,170,000	1,500,000	4,670,000	5,990,325
017040801 - Ghana Space and Tech.Inst Office	1,134,781	50,000		1,184,781		118,620	16,924	135,544				3,170,000	1,500,000	4,670,000	5,990,325
01750 - Council for Scientific and Industrial Research (CSIR)	150,175,404	696,848		150,872,253	1,534,537	20,368,979	4,172,098	26,075,615				7,883,993	1,992,669	9,876,662	186,824,530
0175001 - Head Office	13,686,972	77,093		13,764,065	141,630	2,261,295	457,679	2,860,604				864,874	218,596	1,083,470	17,708,139
017500101 - General Administration	13,686,972	77,093		13,764,065	141,630	2,261,295	457,679	2,860,604				864,874	218,596	1,083,470	17,708,139
0175002 - Crops Research Institute	13,582,215	46,480		13,628,695	95,782	1,356,502	278,279	1,730,562				525,862	132,911	658,773	16,018,030
017500201 - Admin Office	13,582,215	46,480		13,628,695	95,782	1,356,502	278,279	1,730,562				525,862	132,911	658,773	16,018,030
0175003 - Animal Research Institute	10,786,584	41,184		10,827,768	50,727	1,202,034	246,579	1,499,339				465,944	117,767	583,711	12,910,818
017500301 - Admin Office	10,786,584	41,184		10,827,768	50,727	1,202,034	246,579	1,499,339				465,944	117,767	583,711	12,910,818
0175004 - Soil Research Centre	1,576,669	15,400		1,592,069	84,887	449,491	92,203	626,581				174,236	44,038	218,274	2,436,925
017500401 - Admin Office	1,576,669	15,400		1,592,069	84,887	449,491	92,203	626,581				174,236	44,038	218,274	2,436,925

1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Year: 2021 | **Currency:** GH Cedi
2021 Full Year Budget

	GoG				IGF				Funds / Others			Donors			Grand Total
	Compensation of employees	Goods and Services	Capex	Total	Compensation of employees	Goods and Services	Capex	Total	Statutory	ABFA	Others	Goods and Services	Capex	Total	
0175005 - Building , Road and Research Institute	11,647,603	45,922		11,693,525	103,103	1,340,339	274,941	1,718,383				519,555	131,317	650,872	14,062,780
0175005001 - Admin Office	11,647,603	45,922		11,693,525	103,103	1,340,339	274,941	1,718,383				519,555	131,317	650,872	14,062,780
0175006 - Council for Scientific and Industrial Research (CSIR)	9,443,045	45,434		9,488,480	102,008	1,326,101	272,021	1,700,130				514,036	129,922	643,958	11,832,568
0175006001 - Admin Office	9,443,045	45,434		9,488,480	102,008	1,326,101	272,021	1,700,130				514,036	129,922	643,958	11,832,568
0175007 - Institute of Industrial Research	7,842,884	40,278		7,883,162	90,430	1,175,593	241,147	1,507,171				455,695	115,176	570,871	9,961,204
0175007001 - Admin Office	7,842,884	40,278		7,883,162	90,430	1,175,593	241,147	1,507,171				455,695	115,176	570,871	9,961,204
0175008 - Water Research Institute	13,640,376	48,640		13,689,016	109,205	1,419,661	291,167	1,820,033				550,303	139,088	689,391	16,198,440
0175008001 - Admin Office	13,640,376	48,640		13,689,016	109,205	1,419,661	291,167	1,820,033				550,303	139,088	689,391	16,198,440
0175009 - Oil Palm Research Institute	9,218,404	45,832		9,264,235	104,354	1,356,610	278,316	1,739,280				525,862	132,911	658,773	11,662,289
0175009001 - Admin Office	9,218,404	45,832		9,264,235	104,354	1,356,610	278,316	1,739,280				525,862	132,911	658,773	11,662,289
0175010 - Savana Agricultural Research Institute	13,674,228	46,410		13,720,638	104,198	1,354,576	277,862	1,736,636				525,074	132,712	657,786	16,115,060
0175010001 - Admin Office	13,674,228	46,410		13,720,638	104,198	1,354,576	277,862	1,736,636				525,074	132,712	657,786	16,115,060
0175011 - Science & Tech Policy Research Institute	4,296,598	30,174		4,326,772	67,744	880,678	180,652	1,129,074				341,377	86,283	427,659	5,883,505
0175011001 - Admin Office	4,296,598	30,174		4,326,772	67,744	880,678	180,652	1,129,074				341,377	86,283	427,659	5,883,505
0175012 - Forestry Research Institute of Ghana	10,838,107	42,438		10,880,545	95,280	1,238,644	254,081	1,588,005				480,135	121,354	601,489	13,070,039
0175012001 - Admin Office	10,838,107	42,438		10,880,545	95,280	1,238,644	254,081	1,588,005				480,135	121,354	601,489	13,070,039
0175013 - Plant Genetic Resource Research Institute	5,764,282	35,191		5,799,473	79,009	1,027,118	210,691	1,316,819				398,142	100,630	498,771	7,615,063
0175013001 - Admin office	5,764,282	35,191		5,799,473	79,009	1,027,118	210,691	1,316,819				398,142	100,630	498,771	7,615,063
0175014 - Institute of Science and Technology Information	4,340,662	38,118		4,378,779	85,580	1,112,542	228,214	1,426,336				431,254	108,999	540,253	6,345,369
0175014001 - Institute of Science and Technology Information Office	4,340,662	38,118		4,378,779	85,580	1,112,542	228,214	1,426,336				431,254	108,999	540,253	6,345,369
0175015 - Soil Research Institute	8,291,566	53,448		8,345,014	120,000	1,498,835	320,000	1,938,835				604,702	152,838	757,540	11,041,389
0175015001 - Admin Office	8,291,566	53,448		8,345,014	120,000	1,498,835	320,000	1,938,835				604,702	152,838	757,540	11,041,389
0175016 - Ghana Grains and Development Project	9,526,639	44,807		9,571,446	100,600	1,368,961	268,266	1,737,826				506,941	128,129	635,069	11,944,342
0175016001 - Admin Office	9,526,639	44,807		9,571,446	100,600	1,368,961	268,266	1,737,826				506,941	128,129	635,069	11,944,342
0175017 - Roots and Tuber Project	2,018,571			2,018,571											2,018,571
0175017001 - Admin Office	2,018,571			2,018,571											2,018,571

1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
Year: 2021 | **Currency:** GH Cedi
2021 Full Year Budget

	GoG				IGF				Funds / Others			Donors			Grand Total
	Compensation of employees	Goods and Services	Capex	Total	Compensation of employees	Goods and Services	Capex	Total	Statutory	ABFA	Others	Goods and Services	Capex	Total	
01751 - National Biosafety Authority (NBA)	**875,029**	**464,565**		**1,339,594**											**1,339,594**
0175101 - General Admin	875,029	464,565		1,339,594											1,339,594
0175101001 - Admin Office	875,029	464,565		1,339,594											1,339,594
01752 - Nuclear Regulatory Authority	**10,195,609**	**464,565**		**10,660,174**	**30,000**	**4,490,160**	**1,130,040**	**5,650,200**							**16,310,374**
0175201 - Gen. Admin	10,195,609	464,565		10,660,174	30,000	4,490,160	1,130,040	5,650,200							16,310,374
0175201001 - Admin Office	10,195,609	464,565		10,660,174	30,000	4,490,160	1,130,040	5,650,200							16,310,374

PUBLIC INVESTMENT PLAN (PIP) FOR ON-GOING PROJECTS FOR THE MTEF (2021-2024) - GH¢

MDA: Ministry of Environment Science, Technology and Innovation

Funding Source: GOG

Budget Ceiling:

#	Code	Contract	Allotment Based on the MTEF (2021-2024)			
			2021 5,500,000.00	**2022** 6,006,000.00	**2023** 6,198,192.00	**2024** 6,768,425.66
1	0119031	Renovation of Regional Office Block at Bolgatanga	243,558.66	-	-	-
2	1619002	Renovation of Bungalow No. 17 at Obuasi	275,813.17	-	-	-
3	1619003	Renovation of Bungalow No. 24 at Obuasi	357,016.27	-	-	-
4	0119034	Renovation of Regional Office Block at Ho.	428,906.55	-	-	-
5	1619001	Renov. of Regional Director's Bung and Const. of Fence Wall at Tamale	457,934.96	-	-	-
6	0119032	Renovation of Area Office Block at Obuasi	524,819.62	-	-	-
7	0119030	Renovation of Regional Office Block at Tamale	587,736.63	-	-	-
8	0119033	Const. of CIPSEG Centre Fence Wall & Conference Hall/Off Blk at Tamale	926,305.51	-	-	-

This data does not include Non-Infrastructure CAPEX. Ie. vehicles, computers, etc

PUBLIC INVESTMENT PLAN (PIP) FOR ON-GOING PROJECTS FOR THE MTEF (2021-2024) - GH¢

MDA: Ministry of Environment Science, Technology and Innovation
Funding Source: DP
Budget Ceiling: -

#	Code	Contract	Funding	Allotment Based on the MTEF (2021-2024)			
				14,640,706.73 2021	**18,439,150.65** 2022	**6,830,139.92** 2023	**-** 2024
1	2317005	2317005 - Mainstreaming Biodiversity into the Heart of Gov't Decision	Government Of Canada	591,267.44	-	-	-
2	2317008	2317008 - Modernization for Agrcultural in Ghana (MAG)	Government Of Canada	9,616,807.62	-	-	-
3	1317002	1317002 - Recyc&Disp of Waste of Elect'l& Elect'n Equip. Pj. & Env'lly sound way	Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	4,432,631.67	18,439,150.65	6,830,139.92	-

REPUBLIC OF GHANA