



REPUBLIC OF GHANA

MEDIUM TERM EXPENDITURE FRAMEWORK (MTEF)

FOR 2020-2023

***MINISTRY OF ENVIRONMENT,
SCIENCE, TECHNOLOGY AND
INNOVATION***

***PROGRAMME BASED BUDGET ESTIMATES
For 2020***



***MINISTRY OF ENVIRONMENT,
SCIENCE, TECHNOLOGY AND
INNOVATION***



The MESTI MTEF PBB Estimates for 2020 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: 2020 | Currency: Ghanaian Cedi (GHS)

Version 1

	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	ABFA	Others	Goods and Services	31 - Non financial assets	Total		
01701 - Management And Administration	2,941,011	21,386,688	35,000,000	59,327,699								9,671,235	6,322,860	15,994,095	75,321,794	
01701001 - General Administration	2,941,011	20,790,413	35,000,000	58,731,424								8,765,000	3,000,000	11,765,000	70,496,424	
01701002 - Finance		166,402		166,402											166,402	
01701003 - Human Resource		138,669		138,669											138,669	
01701004 - Policy, Planning, Budgeting, Monitoring and Evaluation		180,269		180,269								906,235	3,322,860	4,229,095	4,409,364	
01701005 - Statistics; Research; Information and Public Relations		110,935		110,935											110,935	
01702 - Research And Development	189,250,982	1,188,590		190,439,571	1,534,686	33,657,902	9,569,916	44,762,503				19,942,549	200,000	20,142,549	255,344,624	
01702001 - Scientific And Industrial Research	139,051,301	594,295		139,645,596	1,534,686	21,560,354	4,385,253	27,480,293				19,387,549		19,387,549	186,513,438	
01702002 - Nuclear Science And Space Science Technology	50,199,681	594,295		50,793,976		12,097,547	5,184,663	17,282,210				555,000	200,000	755,000	68,831,186	
01703 - Environmental Protection And Management	9,440,379	396,197		9,836,576	43,425,230	47,477,205	22,477,374	113,379,809							123,216,385	
01703001 - Environmental Compliance And Enforcement						46,765,632	21,155,881	67,921,513							67,921,513	
01703002 - Environmental Education Information And Communication								43,425,230							43,425,230	
01703003 - Enforcement and Compliance of ionizing and non-ionizing radiation	9,440,379	396,197		9,836,576		711,573	1,321,493	2,033,066							11,869,642	
01704 - Spatial Planning And Human Settlement Research and Policy	19,595,297	594,295		20,189,592											20,189,592	
01704001 - Human Settlement and Land Use Research and Policy	19,595,297	594,295		20,189,592											20,189,592	
01705 - Biosafety Development	810,212	396,197		1,206,409								145,076		145,076	1,351,485	
01705001 - Biotechnology Regulation	810,212	396,197		1,206,409								145,076		145,076	1,351,485	
Grand Total	222,037,880	23,961,967	35,000,000	280,999,847	44,959,916	81,135,107	32,047,290	158,142,313				29,758,860	6,522,860	36,281,720	475,423,880	

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;



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- 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	2018	14	2019	14	2023	18
	Number of sectors with climate change mitigation and adaptation strategy priorities integrated	2018	8	2019	8	2023	12
Amount of Green House Gases in the atmosphere	Metric Tonnes	2018	54.5 MT	2019	56.1 MT	2023	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	2018	9,277	2019	5,100	2023	8,500
Research adaptation by industries (SDG Target 9.b)	Number of research findings adopted by industry	2018	95	2019	120	2023	154
	Number of businesses /industries assisted to adopt R&D in production	2018	22	2019	35	2023	60
	Rate of adoption of improved locally-packaged technologies my MSMEs (%)	2018	30	2019	40	2023	60



5. SUMMARY OF KEY ACHIEVEMENTS IN 2019

Management and Administration Programme

The Ministry, under the GIZ/MESTI E-Waste Technical Cooperation, commissioned a training center, a health post and football pitch at Old Fadama (Agbogbloshie) to enhance sound dismantling of Waste of Electrical and Electronic Equipment (WEEE).



Site before Reconstruction



Site after Reconstruction (New Training Facility & Health Post)



Newly constructed Football Pitch



Dismantling of E-waste at Training Facility

The Sustainable Land and Water Management Project (SLWMP), supported 12,421 farmers with farm inputs to implement various SLWM technologies within the 12 project Districts (Mamprugu Moaduri, West Mamprusi, West Gonja and Sawla Tuna-Kalba, Talensi, Bawku West, Builsa South and Kassena Nankana West, Wa East, Daffiama-Bussie Issa, Sissala East and Sissala West).



Use of A-frame to construct bunds on fields
5 | 2020 BUDGET ESTIMATES



Compost Preparation



The SLWMP has constructed eight (8) dugouts in some project areas (Mole National Park, Fringe communities of the Gbele Resource Reserve (GRR) and within some agricultural landscapes).



Dugouts in Some Project Areas

The Ministry is implementing the Adaptation Fund Project to address the risks associated with climate change in the Five (5) Northern Regions. Some achievements of the project (Increased Resilience to Climate Change in Northern Ghana through the Management of Water Resources and Diversification of Livelihoods) include:

- Hundred (100) boreholes constructed and installed with hand pumps
- Over fifty (50) acres of buffer zones created (62,500 tree seedlings were planted in 50 communities) to protect existing water resources like dams/dugouts/ rivers
- Ten (10) Dams rehabilitated in ten (10) communities. The progress of work on 4 is far advanced and near completion.
- 46 local NGOs based in the Northern, Upper East, Upper West, and Savannah Regions were funded with a total sum of **USD 785,000** in 3 tranches to date to implement Alternative livelihood activities in the Adaptation Fund Project communities in the areas of:
 - Dry Season Gardening (17 NGOs);
 - Bee Keeping activities (8 NGOs);
 - Agro-Processing Schemes (12 NGOs);
 - Fish Farming (3 NGOs)
 - Tree Seedling Establishment (5 NGOs); and
 - Integrating cultural values (1 NGO).



Hon. Minister inspecting borehole in Chache, Bole



Working Visit to Tree seedlings nursery by District Adaptation Comm.





Hon. Minister breaking ground for construction of dam, Kakiase



Grinding Machine at Agro-processing center



Beneficiary of dry season gardening initiative



Project beneficiaries harvest fish

H.E. the President, in February, 2019, established the Presidential Advisory Council on Science, Technology and Innovation (PACSTI) by inaugurating a 9- Member Council chaired by Eminent Scientist, Prof. Edward Ayensu.

The Ghana Innovation & Research Commercialization Center (GIRC-CENTER) has been established at CSIR-INSTI and is to be launched by the end of the year. A Framework Development Workshop for stakeholders was organized in April this year to spear-head the operationalization of the center.



H.E The President with the PACSTI Members



Participants at GIRC framework development workshop



The Ministry commenced Feasibility Studies with Technical support and expertise from the Technology Innovation Agency (TIA) of South Africa on host institutions for the establishment of Strategic Technology Centers across the country within the next 4 years. The centers will focus on the following;

- Agriculture & Food Processing
- Environment, Waste Management & Circular Economy
- Bio-Fuels, Green Energy & Energy Storage Systems
- Health & Pharmaceuticals
- ICT, AI, Robotics, Micro-Controllers & Processors and Software Engineering
- Mines and Minerals processing
- Material Science and Physical Metallurgy
- Manufacturing, based on Precision Machining & Digital Manufacturing

Renovation works have been completed on the CSIR-INSTI block for the establishment of a High-Performance Computing (HPC) Centre including HPC Server and monitoring rooms.

The Centre is to provide opportunity for both academic and private institutions to analyze, model and simulate big data to help address both research and industrial challenges in areas such as health, environment, security, agriculture and natural resource management.



The two Racks of HPC received for the Centre

The draft National Space Science Policy was developed and is currently under review by stakeholders. The Policy is uniquely developed to focus on key strategies that will ensure that space science and technology are used to address our immediate national challenges as well as future development of the country.

The second engineering phase the Ghana Radio Astronomy Observatory has commenced with the building of Environmental Monitoring systems and installation of new drive motors. The facility will provide data for weather monitoring to Ghana Meteorological Agency.

A Ground Receiving Satellite Station is being established at Kuntunse to access earth observation satellite data for application by national institutions such as Ghana Armed Forces, Ghana Immigration Service, Ghana Police Service, EPA, LUSPA, MoA, MoRH, Railways, Lands Commission etc and private sector.





Ghana Radio Astronomy Observatory

Research and Development Programme

The Ghana Atomic Energy Commission (GAEC) in collaboration with the University of Cape Coast produced the Yellow flesh cassava which helps prevent blindness.



Yellow flesh cassava being shown to participants at an exhibition

GAEC monitored 762 (out of 1,000) telecommunication masts and assessed 302 (out of 500) base stations for compliance. In addition, 450 (out of 1,500) occupationally exposed workers involved in ionizing radiation were monitored.



Monitoring of Telecommunication Masts



Professional development training in radiation protection



Laboratory facilities were commissioned by the Vice President of the Republic of Ghana, His Excellency Dr. Mahamudu Bawumia at the Radiological and Medical Sciences Research Institute (RAMSRI-GAEC). The Radon Monitoring Laboratory was also Commissioned by the Deputy Minister for Environment, Science, Technology and Innovation, Hon. Patricia Appiagyei.



Commissioning of RAMSRI Lab facility



Commissioning of Radon Monitoring Lab.

Two varieties (2) super colourful varieties of sweet potatoes developed and released., Seven improved stress-tolerant Cowpea lines and 2 high yielding and stress-tolerant Groundnut lines both developed at the end of 2018 have received approval for cultivation and release in 2019. One improved soya bean variety christened “*Favour*” has been approved for release.

SWEET POTATOES

1. *CRI-AGRA* & 2. *CRI KOFI ANNAN*



Favour Soya Bean



Accessions of 626 plants were collected and conserved, which is aimed at conserving Ghana's indigenous biological diversity for future generations and also for re-vegetation in the unlikely event of any natural disasters.

Germplasms of 460 various food and cash crops were distributed throughout the country, eleven (11) crop species were selected for regeneration and three hundred and eighty-eight (388) germplasm conserved in the field and 300 by in-vitro conservation, and finally 73 characterized and 191 evaluated.

Four (4) tree species, based on its drought tolerance, have been identified and selected for the rehabilitation of degraded sites. These are; *Albizia Spp*, *Celtis Spp*, *Khaya authothea*, and *Triplochiton secleroxylon*. Seedling raising methods of *Khaya species* and Odum (*Milicia regia*) species have also been improved for dissemination to other nurseries. The Millet washing machine was developed and has been adopted by processors.

On-going research on Schistosomiasis in some communities in the Atwima Nwabiagya District of the Ashanti Region and Ajumako- Eyan-Esiam in the Central region showed about 20% reduction in the prevalence of schistosomiasis infections with very minimal incidence of infection. Effective monitoring of the disease could lead to local elimination of the disease.

However, the situation was different in some endemic communities in Ga South Municipality of Greater Accra Region, where after two years of community-based praziquantel treatment, recent results showed a relatively high prevalence of *schistosoma mansoni* in some communities, with one community having as high as 73% prevalence of infection.

Overhead water storage systems have been installed for water storage, treatment and supply to *Schistomiasis* infected communities to assist reduce the prevalence of the disease.

Polymer/clay/bitumen product has been developed to replace conventional bitumen for road construction and repair works in Ghana and field application has begun in 2019.

Studies on recycling common waste plastics by modifying it with aggregate for road construction and repair has been completed and field application has begun in 2019

The CSIR trained 50 Artisans through the training-of-trainers (ToT) concept on installation and maintenance of renewable energy systems. Selected 5 Artisans each from the former ten (10) regions of Ghana.

Ninety (90) research findings or outputs were adopted by industry or private sector players. Additionally, twenty (20) businesses or industries were assisted to adopt R&D in production and services whereas there was 30% adoption rate of improved locally-packaged technologies by MSMEs



Environmental Protection and Management

The Environmental Protection Agency (EPA) developed Draft Pesticides Guidelines on efficacy trial evaluation, while the draft Bill on Industrial and Consumer Chemicals Regulations was submitted to the Attorney General's Department for further review.

As part of efforts to operationalize Act 917 and L.I 2250, the EPA provided training for 150 participants comprising of scrap dealers, officers of Ghana Shippers Authority and EPA staff. Stakeholder consultations were also held with the various trade associations to discuss effective ways of implementing Act 917. Eco-levy collection is ongoing as part of the process.

The EPA held six (6) Public Hearings on various undertakings due to their sensitive nature. This includes;

- 3 on mining activities
- 2 on siting of fuel service stations
- 1 on siting of telecommunication masts



Community Sensitization at Sentie, Kassena



School Environmental education in pictures

Three thousand, six hundred and fifty-six (5,100) Environmental Assessment permits were issued for various projects. In addition, twenty-six thousand, sixty-eight (26,068) chemical licenses were issued by the EPA.

Out of five thousand, six hundred and forty-three (5,643) undertakings monitored by the EPA in line with L.I 1652, only 1,888 were compliant while 3,755 were non-compliant. Additionally, out of 107 industries monitored for effluent quality in the Accra/Tema region, most of the results were higher than the EPA recommended guideline levels 50mg/l, 75NTU and 1500 μ S/Cm.





Off-shore Monitoring

The results at 14 sites monitored for Air Quality indicated that PM10 levels were above the EPA 24-hour level of 70µg/m³. On the other hand, the State of the Environment (SoE) 2016 Report was launched and distributed under the auspices of the Hon. Minister, (MESTI).



Effluent Quality monitoring



Air Quality monitoring at Shangri-La Hotel, Airport

Seventy-five (75) Village Advisory Services and 100 pesticide dealers were trained on pesticide regulation and safe/judicious use of pesticides. In addition, 50 journalists were trained on responsive and persuasive environmental reporting, while another 38 editors were also trained on the topic ‘Demystifying Environmental Issues: “The Role of Media Editors”’.

The Nuclear Regulatory Authority (NRA) in collaboration with the International Nuclear Security of United States Department of Energy (INS/DOE) conducted a National Threat Assessment and developed a Design Basis Threat.



Workshop on Design Basis Threat and Development, Accra, 12 - 16 August, 2019



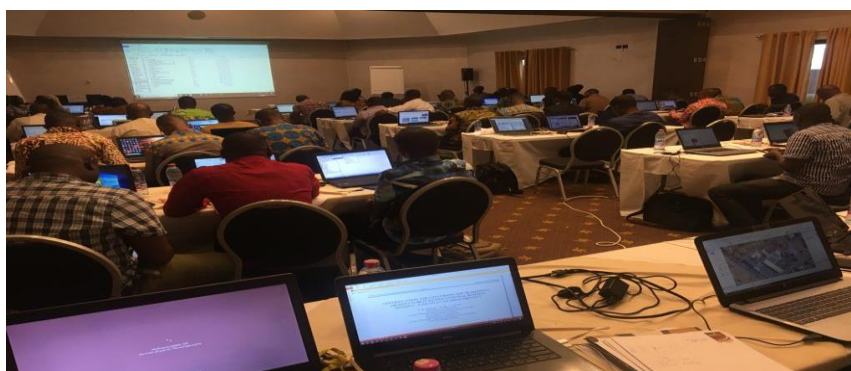
A **1.2 Million Euro** European Commission Instrument for Nuclear Safety Cooperation (INSC) Technical Support Project was approved to help strengthen the regulatory framework of the NRA. The contract is expected to be signed by the end of September and Inception Meeting held by the end of November, 2020.

The NRA facilitated the implementation of Convention on Nuclear Safety (National Report Submitted for 8th Review Meeting) and Joint Convention. Additionally, The NRA prepared an MoU with Canadian Nuclear Safety Commission (CNSC) that would be signed during the 63rd IAEA General Conference scheduled for 16th to 20th September, 2019.

Human Settlements and Spatial Planning

The Legislative Instruments (LIs) for the Land Use and Spatial Planning Act, 925 (2016) has been passed and fully operational now.

All the 260 MMDAs in the country have received the Geographic Information System (GIS) training with funding support from the Inter-Ministerial Coordination Council on Decentralization (IMCCD). The pictures below show on-going GIS training sessions organised at the regional level.



GIS training in Eastern Region

The Regional Spatial Committees of the Greater Accra Region and Eastern region have been inaugurated and fully functional.

The final draft of the Scheme of Service for the Authority has been presented and duly approved by the LUSPA board awaiting final approval of the Public Services Commission. In addition, the interview process for the recruitment of 132 Physical Planners and 56 Technical Officers commenced in August and the process is on-going.

Biosafety Development Programme

The NBA through the Ministry, submitted the Biosafety Regulations to parliament for passage. The Authority also conducted biosafety emergency response training for stakeholders.

Additionally, the Authority's scheme of service was approved and embossed by the Public Services Commission (P.S.C). Finally, the Authority organised a workshop on guidelines on



GMO food labelling. The Authority has also secured equipment for the GMO detection Laboratory.



Samples of Laboratory Equipment procured for the GMO detection Laboratory

6. EXPENDITURE TRENDS FOR THE MEDIUM-TERM

The Ministry over the 2018 and 2019 fiscal years was allocated a total amount of GH¢361,978,374.00 and GH¢417,954,342 respectively, comprising of funds from GoG, IGF and Development Partners (DPs). The Compensation budget for both years were GH¢211,772,898.00 and GH¢233,933,250 respectively, representing a 10% increase in 2019. It is however worth mentioning that the 2019 Compensation budget was revised downwards to **GH¢190,812,717** during the Midyear review.

The budget allocation for Goods and Services, on the other hand, reduced by 48% from GH¢4,412,000.00 in 2018 to GH¢2,989,880 in 2019. The Ministry also recorded a 5% reduction in its approved CAPEX budget from GH¢4,000,000.00 in 2018 to GH¢3,800,000 in 2019. The IGF budget allocations increased from GH¢80,630,147.00 in 2018 to GH¢147,119,650 in 2019. Approved expected revenues from Development Partners (DP) reduced from GH¢61,163,259.00 in 2018 to GH¢30,111,562 in 2019.

As at October 2019, total expenditure for the Environment, Science, Technology and Innovation Sector stood at **GH¢309,900,022.00**. Out of the total amount, Compensation of Employees stood at **GH¢168,678,520**, **Goods and Services** stood at **GH¢4,421,795.00** whilst CAPEX stood at GH¢1,018,934.00. Additionally, expenditure related to IGF and DPs stood at **GH¢85,319,181** and **GH¢50,461,592** respectively.

It should be stated that the Goods and Services amount recorded above includes an amount of **GH¢2,711,074.00** which represents releases from the Ministry of Finance to support the Ministry fulfil its international financial obligations to the



International Atomic Energy Agency, the Comprehensive Nuclear Test Ban Treaty Organization. The amount also catered the siting and environmental work task to support the Nuclear Power Programme undertaken by the Ghana Atomic Energy Commission (GAEC).

The total expenditure under Capital Expenditure covers the supply movable and immovable assets including equipment for the Genetically Modified Organisms (GMO) detection Laboratory and Radiological and Medical Research Institute (RAMSRI) Laboratory.

The budget performance of the Ministry and its Agencies for the period (January-October, 2019) under review is as follows:

ECONOMIC CLASSIFICATION	APPROVED BUDGET (A)	REVISED BUDGET (A) (GHS)	AMOUNT RELEASED AS AT OCT. 2019 (B)	AMOUNT UTILISED (C)	VARIANCE (A-B)	PERCENTAGE UTILISATION
GOG						
Compensation	233,933,250	190,812,717	168,678,520	168,678,520	22,134,197	88%
Goods & Services	2,989,880	2,989,880	4,681,205	4,421,795	1,431,915	157%
CAPEX	3,800,000	3,800,000	1,678,161	1,018,161	2,121,839	27%
Sub-total	240,723,130	197,602,597	175,037,886	174,119,249	23,483,348	87%
RETAINED IGF						
Compensation	43,720,653	43,720,653	25,115,326	25,115,326	18,605,327	57%
Goods & Services	64,930,746	64,930,746	56,533,398	52,745,254	8,397,348	81%
CAPEX	38,468,251	38,468,251	6,559,027	7,458,601	31,909,224	19%
Sub-total	147,119,650	147,119,650	88,207,751	85,319,181	58,911,899	58%



DEVELOPMENT PARTNERS						
Goods & Services	14,307,276	14,307,276	57,832,326	50,461,592	- 43,525,050	168%
CAPEX	15,804,286	15,804,286	-	-	15,804,286	0%
Sub-total	30,111,562	30,111,562	57,832,326	50,461,592	- 27,720,764	168%
Grand-Total	417,904,342.00	374,833,809	321,077,963	309,900,022	56,541,056	83%





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: 2020 | **Currency:** GH Cedi

Version 1

	2020	2021	2022	2023
Programmes - Ministry of Environment Science, Technology	475,423,880	475,256,408	475,256,408	475,256,408
01701 - Management And Administration	75,321,794	75,321,794	75,321,794	75,321,794
01701001 - General Administration	70,496,424	70,496,424	70,496,424	70,496,424
21 - Compensation of employees [GFS]	2,941,011	2,941,011	2,941,011	2,941,011
22 - Use of goods and services	29,555,413	29,555,414	29,555,414	29,555,414
31 - Non financial assets	38,000,000	38,000,000	38,000,000	38,000,000
01701002 - Finance	166,402	166,402	166,402	166,402
22 - Use of goods and services	166,402	166,402	166,402	166,402
01701003 - Human Resource	138,669	138,669	138,669	138,669
22 - Use of goods and services	138,669	138,669	138,669	138,669
01701004 - Policy, Planning, Budgeting, Monitoring and Evalu	4,409,364	4,409,364	4,409,364	4,409,364
22 - Use of goods and services	1,086,504	1,086,504	1,086,504	1,086,504
31 - Non financial assets	3,322,860	3,322,860	3,322,860	3,322,860
01701005 - Statistics; Research; Information and Public Relati	110,935	110,935	110,935	110,935
22 - Use of goods and services	110,935	110,935	110,935	110,935
01702 - Research And Development	255,344,624	255,344,624	255,344,624	255,344,624
01702001 - Scientific And Industrial Research	186,513,438	186,513,438	186,513,438	186,513,438
21 - Compensation of employees [GFS]	140,585,987	140,585,987	140,585,987	140,585,987
22 - Use of goods and services	41,542,198	41,542,198	41,542,198	41,542,198
31 - Non financial assets	4,385,253	4,385,253	4,385,253	4,385,253
01702002 - Nuclear Science And Space Science Technology	68,831,186	68,831,186	68,831,186	68,831,186
21 - Compensation of employees [GFS]	50,199,681	50,199,681	50,199,681	50,199,681
22 - Use of goods and services	11,985,759	11,985,759	11,985,759	11,985,759



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: 2020 | **Currency:** GH Cedi

Version 1

	2020	2021	2022	2023
27 - Social benefits [GFS]	619,448	619,448	619,448	619,448
28 - Other expense	641,635	641,635	641,635	641,635
31 - Non financial assets	5,384,663	5,384,663	5,384,663	5,384,663
01703 - Environmental Protection And Management	123,216,385	123,216,385	123,216,385	123,216,385
01703001 - Environmental Compliance And Enforcement	67,921,513	67,921,513	67,921,513	67,921,513
22 - Use of goods and services	44,995,632	44,995,632	44,995,632	44,995,632
27 - Social benefits [GFS]	1,450,000	1,450,000	1,450,000	1,450,000
28 - Other expense	320,000	320,000	320,000	320,000
31 - Non financial assets	21,155,881	21,155,881	21,155,881	21,155,881
01703002 - Environmental Education Information And Commu	43,425,230	43,425,230	43,425,230	43,425,230
21 - Compensation of employees [GFS]	43,425,230	43,425,230	43,425,230	43,425,230
01703003 - Enforcement and Compliance of ionizing and non-	11,869,642	11,869,642	11,869,642	11,869,642
21 - Compensation of employees [GFS]	9,440,379	9,440,379	9,440,379	9,440,379
22 - Use of goods and services	1,052,770	1,052,770	1,052,770	1,052,770
27 - Social benefits [GFS]	55,000	55,000	55,000	55,000
31 - Non financial assets	1,321,493	1,321,493	1,321,493	1,321,493
01704 - Spatial Planning And Human Settlement	20,189,592	20,022,120	20,022,120	20,022,120
01704001 - Human Settlement and Land Use Research and Pol	20,189,592	20,022,120	20,022,120	20,022,120
21 - Compensation of employees [GFS]	19,595,297	19,427,825	19,427,825	19,427,825
22 - Use of goods and services	594,295	594,295	594,295	594,295
01705 - Biosafety Development	1,351,485	1,351,485	1,351,485	1,351,485
01705001 - Biotechnology Regulation	1,351,485	1,351,485	1,351,485	1,351,485
21 - Compensation of employees [GFS]	810,212	810,212	810,212	810,212



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: 2020 | **Currency:** GH Cedi

Version 1

	2020	2021	2022	2023
22 - Use of goods and services	534,273	534,273	534,273	534,273
27 - Social benefits [GFS]	7,000	7,000	7,000	7,000

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.





2.6 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: 2020 | **Currency:** GH Cedi

Version 1

	2020	2021	2022	2023
01701 - Management And Administration	75,321,794	75,321,794	75,321,794	75,321,794
01701001 - General Administration	70,496,424	70,496,424	70,496,424	70,496,424
21 - Compensation of employees [GFS]	2,941,011	2,941,011	2,941,011	2,941,011
22 - Use of goods and services	29,555,413	29,555,414	29,555,414	29,555,414
31 - Non financial assets	38,000,000	38,000,000	38,000,000	38,000,000
01701002 - Finance	166,402	166,402	166,402	166,402
22 - Use of goods and services	166,402	166,402	166,402	166,402
01701003 - Human Resource	138,669	138,669	138,669	138,669
22 - Use of goods and services	138,669	138,669	138,669	138,669
01701004 - Policy, Planning, Budgeting, Monitoring and Evalu	4,409,364	4,409,364	4,409,364	4,409,364
22 - Use of goods and services	1,086,504	1,086,504	1,086,504	1,086,504
31 - Non financial assets	3,322,860	3,322,860	3,322,860	3,322,860
01701005 - Statistics; Research; Information and Public Relati	110,935	110,935	110,935	110,935
22 - Use of goods and services	110,935	110,935	110,935	110,935

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.

It implements national priority projects such as mainstream STI into National Development Agenda, promote STI Culture in Ghana, build STI Infrastructure Capacity through the establishment of a foundry and Compute Numerical Control (CNC) machine tooling centres to kick-start the promotion and production of machine parts, as well as supporting the operationalization of the High-Performance Computing Centre (HPCC).

The sub-programme considers the development of Human Capital for STI development grant awards, and establishment of an effective National Innovative System by supporting the operationalization of the Ghana Innovation and Research



Commercialization (GIRC) Centre. In addition, this sub-programme will develop indigenous knowledge and Technologies, promote International Cooperation and Linkages, develop National capacity for Space Science and Technologies, as well as through the and financing of the STI Implementation Programme which seek to create jobs, reduce poverty and make science, technology and innovation accessible to all economic sector players.

The sub-programme also ensures the construction of a recycling plant at Old Fadama (Agboglobshie) under the national E-waste project, as well as Hand over Centres (HOC) under the German financed E-waste project. This sub-programme will ensure cohesion and successful implementation of the environment and STI related programmes and projects in the Sector Medium Term Development Plan. Additionally, implementation of Adaptation Fund Project and the Sustainable Land and Water Management Project (SLWMP) in the five (5) Northern Regions will be continued under this sub-programme.

It considers the development of a National Plastic Management Policy and implementation plan, Oil and Gas Environment Policy, National Biodiversity Policy, as well as implementation of Climate Change and Green Economy related activities.

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)
- Develop Human Capital for STI Development (provide grants to STI students/professional associations)
- Support the operationalization of the GIRC Centre)
- Develop Indigenous Knowledge and Technologies (develop National database on indigenous technologies and knowledge)
- Promote International Cooperation and Linkages (support Ghana-South Africa Bilateral, support the implementation of EU H2020 project and attend STI conferences)
- Develop National Capacity for Space Science and Technologies
- Finance the STI Implementation Programme (collaborate with Ministry of Education to establish the National Research Fund)



- Enhance the management of Electronic/Electrical Waste by constructing two Hand over Centres (HOC), as well as constructing a recycling plant at Old Fadama (Agboglobshie).
- Continue implementation of adaptation fund project in the 3 Northern Regions
- Continue implementation of Sustainable Land and Water Management Project (SLWMP)
- Develop National Plastic Management Policy and implementation plan
- Develop and implement Oil and Gas Environment Policy
- Implement Climate Change and Green Economy related activities
- Prepare and implement Biodiversity Policy to enhance Biological Diversity conservation and use of our natural resources
- 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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		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)	10,000	10,998.7	14,000	15,257.85	15,000	-	-	
Land users adopting Sustainable Land and Water Management Practices as a result of the SLWMP	No. of farmers adopting the practices	20,000	26,696	28,000	37,432	30,000	-	-	



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Direct SLWMP beneficiaries	Number of farmers	45,000	48,498	52,000	57,595	60,000	-	-	
	% of which are women	40%	55.5%	40%	54.6%	40%	-	-	
Oil and Gas environment policy developed	Policy document submitted to Cabinet by	Dec., 2018	Final Draft Policy	Final Draft Policy Document developed	Zero +7 Policy Document developed -Draft implementation Plan developed -Draft communication strategy developed	Finalise draft and implement the EMPOGI	-	-	-
Develop legislation for Chemical Weapon Convention	Policy document submitted to Cabinet by	Draft legislation	Draft legislation submitted to MEST/IE PA by AG's Dep't for review	Final Draft legislation for CWC developed	Draft legislation reviewed by MEST/IE PA and further drafting instructions given to AG's Dep't	Finalisation of the legislation - Sensitization on the legislation -develop an implementation Plan	-	-	-
National Biodiversity policy developed	Policy document submitted to Cabinet by	Draft Policy	Final Draft National Biodiversity Policy developed	Implementation Plan for Biodiversity Policy developed	Implementation Plan for National Biodiversity Policy developed	Review of the NBP and IP in line with Post-2020 Biodiversity Framework	Implement NBP	Implement NBP	Implement NBP



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Nationally Determined Contributions (NDC) Implementation & Investment plan	NDC Implementation & Investment plan by	Prepare draft Master Plan	98%	31st March	100% completed	Revision of Emission Baseline Targets for NDC implementation & Investment plan -	-	-	-
Building STI infrastructure Capacity	Number of machine tool centers established	-	-	-	-	1	1	1	1
	Number of Foundries established	-	-	-	-	1	1	1	1
	National HPC Center Established	Renovate Office Building to host HPC	Renovation completed	Install HPC equipment	HPC equipment received and installation yet to be completed	HPC Center launched and Operational	2 more HPCs acquired and installed at the Center	-	-
Establish an Effective National Innovative System	GIRC-Center established.	Renovate Office Building to host GIRC-Center	Renovation works completed	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	-	-	-
	No. of Strategic Technology Centers Established	-	-	-	-	1	1	1	1
Mainstreaming STI Into National Development Agenda	Number of STI Investment / Development	0	0	1	0	1	0	1	1



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
	Plans/Proposals developed.								
	STI Roadmap for the SDGs developed	National STI Policy adopted	National STI Policy approved by Cabinet	STI Roadmap for the SDGs initiated	Ghana selected by UN to initiate the STI Roadmap for the SDGs	STI Roadmap for the SDGs prepared	STI Roadmap Implemented	STI Roadmap Implemented	STI Roadmap Implemented
Promoting STI Culture in Ghana	Number of STI celebrations organized	1	1	1	1	1	1	1	1
Strengthening STI Advisory System for Policy Makers	Inter-Ministerial Coordinating Committee established	-	-	-	-	Framework for establishment of Inter-Ministerial Coordinating Committee developed	Inter-ministerial coordinating Committee established and operational	-	-
Financing the STI Implementation Programme	National Research Fund established and operationalized	STI Policy Developed	STI Policy approved by Cabinet	National Research Fund Bill Pass	National Research Fund Bill prepared	National Research fund 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
Environmental policy integration and management	Maintenance, rehabilitation, refurbishment and upgrading of existing facilities
Climate change policy and programmes	Establishment of Foundries
Green Economy activities	Sustainable Land and Water Management Project
Natural Resource and Environmental Governance Activities	Adaptation Fund Project
Development and promotion of the application of science and technology	Marine Litter and Microplastics
Support Operationalization of GIRC Center	
Support Operationalization of HPC Center	
Development of Plastic Management Policy	





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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01701001 - General Administration	70,496,424	70,496,424	70,496,424	70,496,424
21 - Compensation of employees [GFS]	2,941,011	2,941,011	2,941,011	2,941,011
22 - Use of goods and services	29,555,413	29,555,414	29,555,414	29,555,414
31 - Non financial assets	38,000,000	38,000,000	38,000,000	38,000,000

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Internal Audit reports	Number of audit reports submitted per year	4	4	4	2	4	4	4	4
	Number of ARIC meetings held	4	3	4	2	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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01701002 - Finance	166,402	166,402	166,402	166,402
22 - Use of goods and services	166,402	166,402	166,402	166,402

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Organize workshop on Civil Service Rules and Regulations	Number of Workshops	2	-	2	2	4	4	4	4
Organize HR Forum/ workshop with sector Agencies/Departments to discuss HR issues	Programme undertaken and report generated	2	-	2	4	4	4	4	4
Scheme of Service Training programmes for all categories of staff	Number of staff trained and reports produced	15	13	20	20	20	20	20	20
Workshop organized on Cabinet Memo for the Leadership of the Ministry	Workshop undertaken and report available	2	-	2	2	2	2	2	2
Promotion interviews organized	Promotions interview reports available	15	19	24	24	20	20	20	20
Annual Staff Performance Appraisal Report	Report submitted to OHCS by	31 st January	16 th January	31 st January	16 th January	31 st January	31 st January	31 st January	31 st January
Staff trained and capacity developed	Number of officers trained	2	2	20	84	40	40	40	40



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Participation in local and International training/conference	No. of officers (%) who attended various training/conferences	30	45	20	20	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: 2020 | Currency: GH Cedi

	2020	2021	2022	2023
01701003 - Human Resource	138,669	138,669	138,669	138,669
22 - Use of goods and services	138,669	138,669	138,669	138,669

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Annual monitoring and evaluation report	Annual M&E report produced and disseminated by	31 st March	31 st March	31 st March	-	31 st March	31 st March	31 st March	31 st 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	15 th Jan.	15 th Jan.	15 th Jan.	16 th Jan.	15 th Jan.	15 th Jan.	15 th Jan.	15 th Jan.
	Number of quarterly progress	4	2	4	3	4	4	4	4



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
	reports produced								
Sector budget Prepared	Sector budget prepared, presented and approved by	Dec.	Dec. 2017	Dec. 2018	-	Dec. 2019	Dec. 2020	Dec. 2021	Dec. 2022
Annual Budget Performance report	Report submitted by	31st March	31 st March	31 st March	29 th March 2019	31 st March	31 st March	31 st March	31 st March
Hand Over Centre (HOC) constructed for E-waste project	HOC constructed by	-	-	Dec. 2019	Pre-design studies ongoing	HOC Constructed and Operational	-	-	-
Implement National Anti-Corruption Action Plan (NACAP)	NACAP report submitted to CHRAJ by	N/A	-	15th Jan.	Jan. 2019	15 th Jan.	15 th Jan.	15 th Jan.	15 th 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	
Management and Monitoring Policies, Programmes and Projects	
Evaluation and Impact Assessment Activities	
Budget Preparation	
Budget Performance Reporting	





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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01701004 - Policy, Planning, Budgeting, Monitoring an	4,409,364	4,409,364	4,409,364	4,409,364
22 - Use of goods and services	1,086,504	1,086,504	1,086,504	1,086,504
31 - Non financial assets	3,322,860	3,322,860	3,322,860	3,322,860

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Dissemination of sector information to the general public	Number of public fora on environment and STI held	5	10	30	20	30	30	30	30
Response to petitions from the general public	Response provided within	20 days		20 days	14 days	20 days	20 days	20 days	20 days
Development and update of database	Number of periodic updates on MESTI's website	24	34	30	40	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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01701005 - Statistics; Research; Information and Public	110,935	110,935	110,935	110,935
22 - Use of goods and services	110,935	110,935	110,935	110,935

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.





2.6 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: 2020 | **Currency:** GH Cedi

Version 1

	2020	2021	2022	2023
01702 - Research And Development	255,344,624	255,344,624	255,344,624	255,344,624
01702001 - Scientific And Industrial Research	186,513,438	186,513,438	186,513,438	186,513,438
21 - Compensation of employees [GFS]	140,585,987	140,585,987	140,585,987	140,585,987
22 - Use of goods and services	41,542,198	41,542,198	41,542,198	41,542,198
31 - Non financial assets	4,385,253	4,385,253	4,385,253	4,385,253
01702002 - Nuclear Science And Space Science Technology	68,831,186	68,831,186	68,831,186	68,831,186
21 - Compensation of employees [GFS]	50,199,681	50,199,681	50,199,681	50,199,681
22 - Use of goods and services	11,985,759	11,985,759	11,985,759	11,985,759
27 - Social benefits [GFS]	619,448	619,448	619,448	619,448
28 - Other expense	641,635	641,635	641,635	641,635
31 - Non financial assets	5,384,663	5,384,663	5,384,663	5,384,663

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Biotechnology : - Germplasm collection, characterization, conservation and distribution nationwide	Number of Plant Accessions collected and conserved	4,382	5267	1,000	616	1500	2000	2500	2500
	Number. of Plant Accessions distributed nation Wide	7,117	7500	500	427	600	800	1000	1000
Development and transfer of improved crop varieties	Number. of improved crop varieties of crops developed and disseminated	8 crop varieties	6 (3 sweet potato and 3 cowpea)	10	12	14	16	20	20
Postharvest losses of cereals and legumes reduced	Percentage reduction in postharvest losses in cereals and legumes	2-4%	2%	4-6%	-	6-8%	8-10%	10 – 12%	10-12%
Improved breeds of livestock/poultry/fishes developed	Number. of improved breeds of livestock/pou	4	0	4	-	6	8	10	10



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
	ltry/fishes developed								
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	4	6	1	8	10	12	12
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%	6-8%	-	8-10%	10-12%	12-15%	12-15%
Development of essential materials and industrial products using local raw materials.	Number of artisans/stake holders trained on products developed from local raw materials	90	90	100	25	110	120	150	150
Promotion of renewable Energy systems for both domestic and commercial buildings.	Number of Solar or Renewable energy systems promoted and installed	6	5	7	2	9	12	15	15
	Number. of people trained in the promotion of renewable energy systems	2,000	1,723	1,380	50	100	150	200	200



Establishment of ICT Centre for the provision of electronics and computer engineering services.	Number of training sessions organized	4	2	6	-	8	10	12	15
		2	1	6	4	8	10	12	15
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	3	0	4	2	5	6	8	8
Production and sale of improved planting materials.	Number and type of improved planting materials produced	140 000 Oil Palm germinated seeds	135 000 Oil Palm germinated seeds	150 000 oil palm germinated seeds	33,000 Oil Palm Germinated Seeds	165,000	170,000	200,000	200,000
		130 000 oil palm seedlings	125 000 Oil Palm seedlings	135 000 oil palm seedlings 2,700 coconut seedlings	104,450 Oil Palm Seedlings 4,647	140,000	150,000	180,000	180,000



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	
Biomedical and Public Health	
Material Science and Manufacturing	Furniture Testing Machine
Energy and Petroleum	Solar System Testing Machine
Electronics and ICT	High Performance Computer (HPC)
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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01702001 - Scientific And Industrial Research	186,513,438	186,513,438	186,513,438	186,513,438
21 - Compensation of employees [GFS]	140,585,987	140,585,987	140,585,987	140,585,987
22 - Use of goods and services	41,542,198	41,542,198	41,542,198	41,542,198
31 - Non financial assets	4,385,253	4,385,253	4,385,253	4,385,253

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Safety assessment of telecommunication base stations/cell sites (Conditional Compliance assessment) conducted	Number of Base Stations Assessed.	500	356	400	302	500	550	600	700
Telecommunication masts/base stations Monitored	Number of masts/base stations monitored	1,000	412	1000	762	1200	1300	1400	1500
Occupational exposures for mine, industrial, medical, educational and educational research institution workers monitored.	Number of occupationally exposed workers involved in ionizing radiation monitored	500	250	700	450	1000	1200	1400	1600
Consumable water by Gross alpha-beta and Gamma activity contamination measurement assessed	Number of samples analysed	600	448	700	435	700	700	750	800



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Siting and feasibility studies towards introduction of nuclear energy in Ghana conducted.	Level of siting and feasibility studies completed	25%	25% Feasibility studies	60% Selection of preferred candidate sites	100% Completed the selection of candidate sites (100%)	30 % Field work performed to identify preferred site	75 % Field work performed to identify preferred site	100% Complete identification of Preferred site	-
Stakeholder and public sensitisation meetings on adoption of nuclear power organised	Number of Public awareness, knowledge and acceptance of nuclear power programme organized	15	10	10	4	20	20	30	30
Stakeholder and public sensitisation meetings on adoption of nuclear power organised	Number of Public awareness, knowledge and acceptance of nuclear power programme organized	15	10	10	4	20	20	30	30
Field established for release of four varieties of cherry tomatoes	Number of varieties released to farmers	4	3	4	-	5	5	3	3
Production plant for protein bait to control fruit fly	Level of completion of Protein bait	100%	75%	100%	75%	100%	-	-	-



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
menace completed.									
Outreach programmes to establish Astronomy Clubs in educational institutions organised	Number of established clubs in senior high schools.	15	12	10	6	8	8	8	5
Scientific assessment of the environment and human health impact of e-waste conducted.	Number of research reports on the health impact of e-waste management in Ghana	5	5	7	4	8	10	10	10
Welding and NDT professionals trained.	Number of welders/NDT personnel certified.	30	30	45	15	20	20	25	30
Research conducted to improve radiotherapy and cancer treatment.	Number of researches conducted towards improving cancer treatment.	5	5	6	14	10	12	12	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
Development, promotion and commercialization of nuclear research and technology	Acquisition of vehicles and refurbish laboratories for institutes
Use of GIF for management of postharvest losses.	Revamping the physical infrastructure and acquiring a new Cobalt-60 source
Organize workshops and training food processors and farmers	Revamping the laboratories to enhance research, increase production and commercialization, and promote sensitization and training
Flying of aircraft for remote sensing	Establishment of Ghana Radio Astronomy Project
Workshops and training	Upgrade of NDT laboratory for training and certification
Training of professionals on determination of leakages and integrity of welds using Non-Destructive Testing (NDT) techniques.	Construction of welding training facility
Groundwater sustainability and quality assessment to ascertain suitability for irrigation in the three northern regions	Reroofing of RP Baffour building
Initiate capacity building for the transformation of NPI into the technical support organization to be able to support the owner operator.	Re-Roofing of NPI Office Building
Present an addendum to the current LI on national participation in the energy sector	Construction of Fence wall around GAEC
Monitoring of safety of telecommunication masts to ensure public safety	Construct the country's and world's first radioactive waste bore-hole disposal facility in Ghana to ensure public and environmental safety
Monitoring of occupational exposures for mine, industrial, medical, educational and educational research institution workers	Research and Development on Radon gas and NORM in Ghana
Development, promotion and commercialization of nuclear research and technology – for nuclear safety and security and radiation protection	Acquisition of vehicles
GAEC International obligation (Subscriptions)	
Payment of recurrent expenses – <i>electricity and water bills</i>	





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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01702002 - Nuclear Science And Space Science Technol	68,831,186	68,831,186	68,831,186	68,831,186
21 - Compensation of employees [GFS]	50,199,681	50,199,681	50,199,681	50,199,681
22 - Use of goods and services	11,985,759	11,985,759	11,985,759	11,985,759
27 - Social benefits [GFS]	619,448	619,448	619,448	619,448
28 - Other expense	641,635	641,635	641,635	641,635
31 - Non financial assets	5,384,663	5,384,663	5,384,663	5,384,663

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Nuclear Technologies commercialized	Number of technologies developed	1	2	2	3	2	2	2	2
Nuclear products and services including consultancy and training commercialized	Number of products, services offered	20	25	28	32	30	35	35	35

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.





2.6 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: 2020 | **Currency:** GH Cedi

Version 1

	2020	2021	2022	2023
01703 - Environmental Protection And Management	123,216,385	123,216,385	123,216,385	123,216,385
01703001 - Environmental Compliance And Enforcement	67,921,513	67,921,513	67,921,513	67,921,513
22 - Use of goods and services	44,995,632	44,995,632	44,995,632	44,995,632
27 - Social benefits [GFS]	1,450,000	1,450,000	1,450,000	1,450,000
28 - Other expense	320,000	320,000	320,000	320,000
31 - Non financial assets	21,155,881	21,155,881	21,155,881	21,155,881
01703002 - Environmental Education Information And Commu	43,425,230	43,425,230	43,425,230	43,425,230
21 - Compensation of employees [GFS]	43,425,230	43,425,230	43,425,230	43,425,230
01703003 - Enforcement and Compliance of ionizing and non-	11,869,642	11,869,642	11,869,642	11,869,642
21 - Compensation of employees [GFS]	9,440,379	9,440,379	9,440,379	9,440,379
22 - Use of goods and services	1,052,770	1,052,770	1,052,770	1,052,770
27 - Social benefits [GFS]	55,000	55,000	55,000	55,000
31 - Non financial assets	1,321,493	1,321,493	1,321,493	1,321,493

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		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%	100%	100%	100%	100%	100%	100%	100%
		80%	65%	70%	67%	75%	80%	85%	88%
Operationalise the National Oil Spill Plan	Number of simulation exercises undertaken	1	1	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	4,200	9,277	5,612	5,100	6,173	6790	7,100	8,500
Sample and analyse level of pollution of effluent quality from industries	Number of industries monitored for effluent quality	85	81	75	107	80	85	90	120
Undertake annual compliance monitoring	Number of Annual compliance monitoring events: Accra Other Regions	4	4	4	5	5	6	7	8
		11	13	11	10	12	13	14	15
Monitoring of environmental indicators - air quality	Number of monitoring locations	16 sites	13 sites	16 site	14 sites	18 sites	20 sites	22 sites	24sites



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
	(Accra + regions)								
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	1	1	1	1	1
Monitor industries to ensure the use of bio-oxo degradable additives in the manufacture of flexible Plastics	Number of industries monitored	25	32	29	33	31	33	35	36
Develop a system that effectively and rapidly responds and deal with chemical related emergencies nationwide	Percentage completion of the system	40%	30%	60%	45%	60%	80%	100%	Implement plan
Incorporate climate change issues into sector medium term plans	Number of sectors with climate change mitigation and adaptation strategies	8	8	9	8	10	11	12	13



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	Office and residential Buildings
Environmental quality monitoring	Vehicles
Development of adequate legal framework for environmental management	Office equipment & Office supplies
Natural Resource and Environmental Governance 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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01703001 - Environmental Compliance And Enforceme	67,921,513	67,921,513	67,921,513	67,921,513
22 - Use of goods and services	44,995,632	44,995,632	44,995,632	44,995,632
27 - Social benefits [GFS]	1,450,000	1,450,000	1,450,000	1,450,000
28 - Other expense	320,000	320,000	320,000	320,000
31 - Non financial assets	21,155,881	21,155,881	21,155,881	21,155,881

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
E-waste recyclers trained on sustainable management of e-waste	Number of trainings undertaken	2	3	3	6	4	5	6	8
Stakeholders trained on pesticide regulation and safe/judicious use of pesticides.	Number of training exercise undertaken on safe handling of pesticides	3	2	5	3	6	7	8	10

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	Computer and accessories
Environmental Education and awareness raising	Vehicles
Natural resource and environmental governance 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: 2020 | Currency: GH Cedi

	2020	2021	2022	2023
01703002 - Environmental Education Information And	43,425,230	43,425,230	43,425,230	43,425,230
21 - Compensation of employees [GFS]	43,425,230	43,425,230	43,425,230	43,425,230

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		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	150	250	200	261	250	300	350	400
General public and users of radiation sources educated	Number of education events held	265	390	350	261	320	330	350	360
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	119	100	56	100	100	100	100
Regulations for the control of ionizing and non-ionizing radiation*	Number of regulations being drafted	7	2	6	2	6	6	6	6
	Number of regulatio	7	2	6	7	6	6	6	6



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
	ns reviewed internally								
	Number of regulations reviewed externally	7	1	6	1	6	6	6	6
	Number of regulations ready for Board's approval and promulgation	7	3	6	3	6	6	6	6
Guidance documents for the control of ionizing and non-ionizing radiation; and radiation devices available.	Number of Guidance documents drafted and reviewed	8	4	10	13	10	10	17	5
Compliance by users of radiation sources and devices to Regulatory Requirements.	Number of facilities inspected and authorised	250	227	250	135	250	250	250	250
	Number of permits issued	180	145	200	126	210	220	230	240
Non-compliance issues Resolved	Number of enforcement notices issued	10	5	25	5	10	10	10	10



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 51 technical and support staff for the Nuclear Regulatory Authority. This includes 46 new staff, in addition to 5 replacements for retired staff, who have not been replaced since 2017.	Acquire equipment for regulatory activities
Set the organizational chart and the scheme of service in line with international and IAEA standards	Engage architect to develop concept and prepare architectural design of NRA office complex
Train staff in specialized areas (ionizing and non-ionizing radiation, public administration and management, etc.) at local and foreign institution	Acquire vehicles for regulatory activities
Draft, review and promulgate regulations	Expansion of office accommodation for staff
Educate public on radiation matters	
Develop Corporate Governance Documents	
Contract Consulting Services for regulatory framework development	
Undertake regulatory inspections and enforcement of facilities	
Build capacity of Front-Line Officers (FLOs) to detect and interdict illicit trafficking of nuclear and radioactive materials out of regulatory control	
Hold Stakeholders workshop on draft regulations on nuclear materials and facilities, radiation emitting devices, and radioactive materials	
Sensitize the licensees on regulations on nuclear materials and facilities, radiation emitting devices, and radioactive materials	
Train ICT staff to customize the Regulatory Authority Information System (RAIS) to maintain and update national register of radiation sources of practices and persons authorized to carry out any activity related to nuclear technology	



<p>Host/participate in regional and international meetings/workshops of nuclear regulatory bodies and international agencies on safety, security, and safeguards</p>	
<p>Initiate the process to adopt and ratify relevant international conventions, protocols and treaties</p>	





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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01703003 - Enforcement and Compliance of ionizing a	11,869,642	11,869,642	11,869,642	11,869,642
21 - Compensation of employees [GFS]	9,440,379	9,440,379	9,440,379	9,440,379
22 - Use of goods and services	1,052,770	1,052,770	1,052,770	1,052,770
27 - Social benefits [GFS]	55,000	55,000	55,000	55,000
31 - Non financial assets	1,321,493	1,321,493	1,321,493	1,321,493

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.





2.6 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: 2020 | **Currency:** Ghanaian Cedi (GHS)

Version 1

	2020	2021	2022	2023
01704 - Spatial Planning And Human Settlement	20,189,592	20,022,120	20,022,120	20,022,120
01704001 - Human Settlement and Land Use Research and Pol	20,189,592	20,022,120	20,022,120	20,022,120
21 - Compensation of employees [GFS]	19,595,297	19,427,825	19,427,825	19,427,825
22 - Use of goods and services	594,295	594,295	594,295	594,295

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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
National zoning regulations and planning standards published and Distributed (Revised editions from 2019 onwards)	Number. of published guidelines on zoning regulations and planning standards distributed	-	-	300	0 (Review of planning standards to be rolled over to 2020)	300	100	50	50
Reviewed Manuals for spatial plan completed (Revised editions from 2019 onwards)	Number of spatial planning manuals distributed	-	-	300	0 (Review of spatial planning manuals to be rolled over to 2020)	300	100	50	50
Development permitting procedures and business manual	Number of permitting guides and business manual distributed	150	150	300	0 (development permitting procedures and business manual to be rolled over to 2020)	350	100	100	100



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
The Legal Instruments for Act 925 completed and operational Scheme of Service completed	Date of Passage acceptance of LIs by parliament	-	Final Draft with Attorney General as at December 2018	August 2019	July 2019				
	Availability of scheme of service report	30 th Sept.	-	30 th Sept.	Final draft of Scheme of Services available as at June				
Staff recruited for LUSPA	Number of Physical Planners recruited	100 spatial planners	-	100	130	50	50	50	50
Functional Regional Spatial Planning Committees established.	Number of RSPCs inaugurated	10 (100%)	8 (80%)	10	10	6	-	-	-
Head office complex of LUSPA completed	% completion level of office building	-	-	40%	-	-	50%	100%	-
Recruited key/relevant staff recruited for LUSPA	Number of staff recruited	-	-	-	-	50	50	50	50
Training on permitting guidelines,	Number of RSPCs with	-	-	-	-	16	16	16	16



Main Outputs	Output Indicator	Past Years				Projections			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
planning standards and Regulations on Act 925	training and number of zonal trainings organized								
Human Settlement Policy	Human Settlement Policy	-	-	-	-	1	-	-	-



4. Budget Sub-Programme Operations and Projects

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

Operations	Projects
Orientation of Regional Spatial Planning Authorities (RSPAs) and DSPCs on Land Use and Spatial Planning Act 925 and its related regulations	Construction of office (complex) building for the Land Use and Spatial Planning Authority.
Finalise Scheme of service and Conditions of Service	
Recruitment of spatial planners for MMDAs	
Revision of Zoning regulations and Planning Standards	
Dissemination and training on permitting guidelines, planning standards and zoning regulations	
Preparation of Human Settlement Policy (Human Settlements Related)	
Sponsoring staff to pursue relevant professional programmes	
Recruitment of other key/ relevant staff for LUSPA	





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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01704001 - Human Settlement and Land Use Research	20,189,592	20,022,120	20,022,120	20,022,120
21 - Compensation of employees [GFS]	19,595,297	19,427,825	19,427,825	19,427,825
22 - Use of goods and services	594,295	594,295	594,295	594,295

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			
		2018		2019		Budget Year	Budget Year	Budget Year	Budget Year
		Target	Actual	Target	Actual	2020	2021	2022	2023
LUPMIS (GIS) training organized for all MMDAs (stakeholders)	Number of MMDAs (stakeholders) with GIS Training Received (Reports available)	52 MMDAs	52 MMDAs	254 MMDAs	260 MMDAs (trained on QGIS)	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
Train all (260) MMDAs and other stakeholders in LUPMIS and other GIS applications related to property tax administration, street addressing and development permitting and other planning functionalities	Acquisition of Movable and Unmovable Assets (PCs and GPS machines among others)



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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Regional Spatial Development Frameworks	Number of RSDF's prepared	2 (Ashanti and Greater Accra)	-	-	-	1 Central Region	1 Eastern Region	1 Volta Region	1 Brong Ahafo
District Spatial Development Frameworks	Number of District Spatial Development Frameworks	-	2	50	-	20	60	60	60
Structure Plans for major settlements prepared of MMDAs	Number of Structure Plans prepared (for MMDAs)	2 Tamale and Buiepi	2	50	-	20	50	50	50
Monitoring and Evaluation visits on RSPAs and MMDAs	Number of M & E visits to RSPAs	-	30	10	6	16	16	16	16
	Number of M & E visits to MMDAs	-	30	254	-	100	150	150	150
Regional Spatial Development Frameworks	Number of newly created RSDFs	-	-	-	-	3	2	1	1



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.





2.6 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: 2020 | **Currency:** GH Cedi

Version 1

	2020	2021	2022	2023
01705 - Biosafety Development	1,351,485	1,351,485	1,351,485	1,351,485
01705001 - Biotechnology Regulation	1,351,485	1,351,485	1,351,485	1,351,485
21 - Compensation of employees [GFS]	810,212	810,212	810,212	810,212
22 - Use of goods and services	534,273	534,273	534,273	534,273
27 - Social benefits [GFS]	7,000	7,000	7,000	7,000

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;
- 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			
		2018		2019		Budget Year 2020	Indicative Year 2021	Indicative Year 2022	Indicative Year 2023
		Target	Actual	Target	Actual				
Approval and embossing of the NBA scheme of service by Public Service Commission (PSC)	Date of approval	-	-	Dec 2019	-	--	--	--	--
Passage of Biosafety Regulations	Regulations submitted to parliament for passage	2	2	2	2	--	--	--	--
Biosafety public education materials	Number of materials	5	4	4	2	4	4	4	4
Biotechnology and biosafety staff trained on biosafety guidelines	Number of trainings conducted on Biotechnology and Biosafety guidelines.	3	3	4	4	3	3	3	3



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
Conduct Biosafety capacity building	Complete the GMO detection Laboratory with equipment
Organize Public education and awareness fora, as well as monitoring and evaluation on biosafety issues.	Conduct field trials Nationwide sensitization in second cycle and tertiary institution, floats and Vehicle (two sedan cars and one 4X4 pickup truck)
	Purchase land for a permanent office space for NBA.





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: 2020 | **Currency:** GH Cedi

	2020	2021	2022	2023
01705001 - Biotechnology Regulation	1,351,485	1,351,485	1,351,485	1,351,485
21 - Compensation of employees [GFS]	810,212	810,212	810,212	810,212
22 - Use of goods and services	534,273	534,273	534,273	534,273
27 - Social benefits [GFS]	7,000	7,000	7,000	7,000



1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
 Year: 2020 | Currency: Ghanaian Cedi (GHS)
 Version 1

	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
017 - Ministry of Environment Science, Technology and Innovation	222,037,880	23,961,967	35,000,000	280,999,847	44,959,916	81,135,107	32,047,290	158,142,313				29,758,860	6,522,860	36,281,720
01701 - Headquarters	2,941,011	21,386,688	35,000,000	59,327,699								9,671,235	6,322,860	15,994,095
0170101 - Finance and Administration	2,941,011	20,679,477	35,000,000	58,620,488										58,620,488
0170101001 - Finance and Administration	2,941,011	20,679,477	35,000,000	58,620,488										58,620,488
0170102 - Science and Technology Directorate		166,403		166,403										166,403
0170102001 - Science and Technology Directorate		166,403		166,403										166,403
0170103 - Policy, Planning, Monitoring and Evaluation		180,269		180,269								906,235	3,322,860	4,229,095
0170103001 - Policy, Planning, Monitoring and Evaluation		180,269		180,269								906,235	3,322,860	4,229,095
0170104 - RSIM Directorate		110,935		110,935										110,935
0170104001 - RSIM Directorate		110,935		110,935										110,935
0170105 - Human Resource Directorate		138,669		138,669										138,669
0170105001 - Human Resource Directorate		138,669		138,669										138,669
0170106 - Environment Directorate		110,935		110,935								8,765,000	3,000,000	11,765,000
0170106001 - Headquarters Environment Directorate		110,935		110,935								8,765,000	3,000,000	11,765,000
01702 - Environmental Protection Agency					43,425,230	46,765,632	21,155,881	111,346,743						111,346,743
0170201 - Head Office					43,425,230	46,765,632	21,155,881	111,346,743						111,346,743
0170201001 - Head Office					43,425,230	46,765,632	21,155,881	111,346,743						111,346,743
01703 - Town and Country Planning Department (T.C.P.D)	19,595,297	594,295		20,189,592										20,189,592
0170301 - Greater Accra Regional Office	2,971,268			2,971,268										2,971,268
0170301001 - Greater Accra Regional Office	2,971,268			2,971,268										2,971,268
0170302 - Volta Regional Office	762,227			762,227										762,227
0170302001 - Volta Regional Office	762,227			762,227										762,227
0170303 - Eastern Regional Office	2,914,153			2,914,153										2,914,153
0170303001 - Eastern Regional Office	2,914,153			2,914,153										2,914,153
0170304 - Central Regional Office	1,656,166			1,656,166										1,656,166
0170304001 - Central Regional Office	1,656,166			1,656,166										1,656,166



1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment, Science, Technology and Innovation
 Year: 2020 | Currency: Ghanaian Cedi (GHS)
 Version 1

	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
0170305 - Western Regional Office	1,430,735			1,430,735											1,430,735
0170305001 - Western Regional Office	1,430,735			1,430,735											1,430,735
0170307 - Brong Ahafo Regional Office	1,783,621			1,783,621											1,783,621
0170307001 - Brong Ahafo Regional Office	1,783,621			1,783,621											1,783,621
0170308 - Northern Regional Office	1,023,352			1,023,352											1,023,352
0170308001 - Northern Regional Office	1,023,352			1,023,352											1,023,352
0170309 - Upper East Regional Office	750,058			750,058											750,058
0170309001 - Upper East Regional Office	750,058			750,058											750,058
0170310 - Upper West Regional Office	638,068			638,068											638,068
0170310001 - Upper West Regional Office	638,068			638,068											638,068
0170311 - Head Office	5,665,650	594,295		6,259,945											6,259,945
0170311001 - Head Office	5,665,650	594,295		6,259,945											6,259,945
01704 - Ghana Atomic Energy Commission (G.A.E.C)	50,199,681	594,295		50,793,976	12,097,547	5,184,663		17,282,210				555,000	200,000	755,000	68,883,186
0170401 - Head Office	33,541,954	356,577		33,898,531	7,175,230	2,853,198		10,028,428				555,000	200,000	755,000	44,681,959
0170401001 - Head Office	33,541,954	356,577		33,898,531	7,175,230	2,853,198		10,028,428				555,000	200,000	755,000	44,681,959
0170402 - National Nuclear Research Institute (N.N.R.I.)	4,903,236	47,169		4,950,405	681,095	384,752		1,065,847							6,016,251
0170402001 - National Nuclear Research Institute (N.N.R.I.)	4,903,236	47,169		4,950,405	681,095	384,752		1,065,847							6,016,251
0170403 - Biotechnology and Nuclear Research Institute (B.N.R.I.)	4,128,257	38,521		4,166,778	410,009	219,858		629,867							4,796,645
0170403001 - Biotechnology and Nuclear Research Institute (B.N.R.I.)	4,128,257	38,521		4,166,778	410,009	219,858		629,867							4,796,645
0170404 - Radiation Protection Institute (R.P.I.)	2,210,205	32,700		2,242,905	1,918,448	996,438		2,914,886							5,157,791
0170404001 - Radiation Protection Institute (R.P.I.)	2,210,205	32,700		2,242,905	1,918,448	996,438		2,914,886							5,157,791
0170405 - School of Nuclear and Allied Sciences	1,575,779	24,053		1,599,832	1,391,475	601,092		1,992,567							3,592,399
0170405001 - School of Nuclear and Allied Sciences	1,575,779	24,053		1,599,832	1,391,475	601,092		1,992,567							3,592,399
0170406 - Radiological and Medical Sciences Research Institute	1,524,166	24,053		1,548,219											1,548,219
0170406001 - Radiological and Medical Sciences Research Institute	1,524,166	24,053		1,548,219											1,548,219
0170407 - Nuclear Power Institute	1,232,043	47,169		1,279,212											1,279,212



1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
 Year: 2020 | Currency: Ghanaian Cedi (GHS)
 Version 1

	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
0170407001 - Nuclear Power Institute	1,232,043	47,169		1,279,212										1,279,212
0170408 - Ghana Space and Tech. Inst.	1,084,041	24,053		1,108,094		521,291	129,325	650,616						1,758,710
0170408001 - Ghana Space and Tech. Inst	1,084,041	24,053		1,108,094		521,291	129,325	650,616						1,758,710
01750 - Council for Scientific and Industrial Research (CSIR)	139,051,301	594,295		139,645,596	1,534,686	21,560,354	4,385,253	27,480,293				19,387,549		19,387,549
0175001 - Head Office	10,318,307	62,988		10,381,295		3,290,651	1,044,302	4,334,953				623,193		15,339,441
0175001001 - General Administration	10,095,992	62,988		10,158,981		3,290,651	1,044,302	4,334,953				623,193		15,117,126
0175001008 - Guest House	81,655			81,655										81,655
0175001015 - Stores	140,660			140,660										140,660
0175002 - Crops Research Institute	12,317,627	39,049		12,356,676		5,470,767	1,367,692	6,838,458				3,002,281		22,197,416
0175002001 - General Administration	12,317,627	39,049		12,356,676		5,470,767	1,367,692	6,838,458				3,002,281		22,197,416
0175003 - Animal Research Institute	10,532,103	35,102		10,567,206		165,000	41,251	206,251				673,132		11,446,588
0175003001 - General Administration	10,532,103	35,102		10,567,206		165,000	41,251	206,251				673,132		11,446,588
0175004 - Soil Research Centre	1,290,183	15,888		1,306,071		320,016	20,000	340,016						1,646,088
0175004001 - General Administration	1,290,183	15,888		1,306,071		320,016	20,000	340,016						1,646,088
0175005 - Building, Road and Research Institute	11,213,976	38,634		11,252,609	226,439	3,216,601	321,005	3,764,045						15,016,654
0175005001 - General Administration	11,213,976	38,634		11,252,609	226,439	3,216,601	321,005	3,764,045						15,016,654
0175006 - Council for Scientific and Industrial Research (CSIR)	8,822,187	36,037		8,858,225		1,553,969	665,987	2,219,955				1,126,566		12,204,746
0175006001 - General Administration	8,822,187	36,037		8,858,225		1,553,969	665,987	2,219,955				1,126,566		12,204,746
0175007 - Institute of Industrial Research	6,934,872	32,817		6,967,689		285,000	64,400	349,400				945,000		8,262,089
0175007001 - General Administration	6,934,872	32,817		6,967,689		285,000	64,400	349,400				945,000		8,262,089
0175008 - Water Research Institute	10,075,334	40,659		10,115,993	542,151	3,655,066		4,197,207				3,117,997		17,431,197
0175008001 - General Administration	10,075,334	40,659		10,115,993	542,151	3,655,066		4,197,207				3,117,997		17,431,197
0175009 - Oil Palm Research Institute	7,706,069	39,048		7,745,117	437,068	1,459,281	182,630	2,078,979				445,483		10,269,579
0175009001 - General Administration	7,706,069	39,048		7,745,117	437,068	1,459,281	182,630	2,078,979				445,483		10,269,579
0175010 - Savana Agricultural Research Institute	14,580,167	43,409		14,623,576	252,428	766,424	60,000	1,078,852				3,781,455		19,483,883
0175010001 - General Administration	14,580,167	43,409		14,623,576	252,428	766,424	60,000	1,078,852				3,781,455		19,483,883



1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation
 Year: 2020 | Currency: Ghanaian Cedi (GHS)
 Version 1

	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	
0175011 - Science & Tech Policy Research Institute	3,935,297	26,897		3,962,194	8,418	198,605	84,188	291,211				2,211,006		2,211,006	6,464,411
0175011001 - General Admin	3,935,297	26,897		3,962,194	8,418	198,605	84,188	291,211				2,211,006		2,211,006	6,464,411
0175012 - Forestry Research Institute of Ghana	11,006,102	38,270		11,044,372		662,869	284,087	946,956				1,779,677		1,779,677	13,771,006
0175012001 - General Admin	11,006,102	38,270		11,044,372		662,869	284,087	946,956				1,779,677		1,779,677	13,771,006
0175013 - Plant Genetic Resource Research Institute	4,932,596	30,636		4,963,233	68,182	88,157	34,135	190,474				520,000		520,000	5,673,706
0175013001 - General Administration	4,932,596	30,636		4,963,233	68,182	88,157	34,135	190,474				520,000		520,000	5,673,706
0175014 - Institute of Science and Technology Information	5,189,452	32,817		5,222,269		17,629	10,577	28,206				187,788		187,788	5,438,263
0175014001 - Institute of Science and Technology Information	5,189,452	32,817		5,222,269		17,629	10,577	28,206				187,788		187,788	5,438,263
0175015 - Soil Research Institute	7,283,061	44,238		7,327,299		410,331	205,000	615,331				973,969		973,969	8,916,599
0175015001 - General Administration	7,283,061	44,238		7,327,299		410,331	205,000	615,331				973,969		973,969	8,916,599
0175016 - Ghana Grains and Development Project	10,416,693	37,803		10,454,496											10,454,496
0175016001 - General Administration	10,416,693	37,803		10,454,496											10,454,496
0175017 - Roots and Tuber Project	2,497,275			2,497,275											2,497,275
0175017001 - General Administration	2,497,275			2,497,275											2,497,275
01751 - National Biosafety Authority (NBA)	810,212	396,197		1,206,409								145,076		145,076	1,351,485
0175101 - General Admin	810,212	396,197		1,206,409								145,076		145,076	1,351,485
0175101001 - General Admin	810,212	396,197		1,206,409								145,076		145,076	1,351,485
01752 - Nuclear Regulatory Authority	9,440,379	396,197		9,836,576		711,573	1,321,493	2,033,066							11,869,642
0175201 - Gen. Admin	9,440,379	396,197		9,836,576		711,573	1,321,493	2,033,066							11,869,642
0175201001 - Gen. Admin	9,440,379	396,197		9,836,576		711,573	1,321,493	2,033,066							11,869,642



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