



REPUBLIC OF GHANA

***MEDIUM TERM EXPENDITURE FRAMEWORK (MTEF)***

***FOR 2019-2022***

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

***PROGRAMME BASED BUDGET ESTIMATES  
For 2019***



*On the Authority of His Excellency Nana Addo Dankwa Akufo-Addo,  
President of the Republic of Ghana*





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



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The MESTI MTEF PBB Estimates for 2019 is also available on the internet at:

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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 (MESTI)

YTD: Year Total 2019 | Currency: GH Cedi

Version 1

	GoG			IGF			Funds / Others			Donors		Grand Total	
	Compensation of employees	Goods and Services	Capex	Total	Compensation of employees	Goods and Services	Capex	Statutory	ABFA	Others	Goods and Services		Capex
01701 - Management And Administration	1,995,106	1,046,458	1,900,000	4,941,564							14,307,276	15,804,286	30,111,562
01701001 - General Administration	1,995,106	722,055	1,900,000	4,617,161							7,215,000		11,832,161
01701003 - Human Resource		104,646		104,646									104,646
01701004 - Policy, Planning, Budgeting, Monitoring and Evaluation		136,040		136,040							7,092,276	15,804,286	22,896,562
01701005 - Statistics; Research; Information and Public Relations		83,717		83,717									83,717
01702 - Research And Development	208,129,607	896,964	1,140,000	210,166,571	678,855	18,622,898	14,468,251	33,770,004					243,936,575
01702001 - Scientific And Industrial Research	146,883,308	448,482	570,000	147,901,790	678,855	14,589,720	11,668,324	26,936,899					174,838,689
01702002 - Nuclear Science And Space Science Technology	61,246,299	448,482	570,000	62,264,781		4,033,178	2,799,927	6,833,105					69,097,886
01703 - Environmental Protection And Management	6,809,527	298,988	190,000	7,298,515	43,041,798	46,307,848	24,000,000	113,349,646					120,648,161
01703001 - Environmental Compliance And Enforcement						46,307,848	24,000,000	70,307,848					70,307,848
01703002 - Environmental Education Information And Communication					43,041,798			43,041,798					43,041,798
01703003 - Enforcement and Compliance of Ionizing and non-ionizing radiation	6,809,527	298,988	190,000	7,298,515									7,298,515
01704 - Spatial Planning And Human Settlement	16,903,456	448,482	380,000	17,731,938									17,731,938
01704001 - Human Settlement and Land Use Research and Policy	16,903,456	448,482	380,000	17,731,938									17,731,938
01705 - Biosafety Development	95,554	298,988	190,000	584,542									584,542
01705001 - Biotechnology Regulation	95,554	298,988	190,000	584,542									584,542
<b>Grand Total</b>	<b>235,933,250</b>	<b>2,989,880</b>	<b>3,800,000</b>	<b>240,723,130</b>	<b>43,720,653</b>	<b>64,930,746</b>	<b>38,468,251</b>	<b>147,119,650</b>			<b>14,307,276</b>	<b>15,804,286</b>	<b>30,111,562</b>



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

## **1. NMTDF POLICY OBJECTIVES**

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

These are as follows:

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

## **2. GOAL**

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

## **3. CORE FUNCTIONS**

The core functions of the Environment, Science, Technology and Innovation Sector are:

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



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



#### 4. POLICY OUTCOME INDICATORS AND TARGETS

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 (SDG Target 13.2)	No of industries using REDD concepts, based on research to assess carbon stocks	2017	13	2018	14	2019	16
	No. of sectors with climate change mitigation and adaptation strategy priorities integrated	2017	7	2018	8	2019	9
Amount of Green House Gases in the atmosphere (SDG Target 13.a)	Metric Tonnes (MT)	2017	50.5 MT	2018	54.5 MT	2019	56.1 MT
Number of companies compliant with EA and EMP permit conditions (SDG Target 12.6)	The number of companies issued with EA and EMP permit	2017	4,638	2018	1,560	2019	5,612
Research adaptation by industries (SDG Target 9.b)	Number of research findings adopted by industry	2017	75	2018	95	2019	120
	Number of businesses /industries assisted to adopt R&D in production	2017	17	2018	22	2019	35
	Rate of adoption of improved locally-packaged technologies by MSMEs (%)	2017	25	2018	30	2019	40



## 5. SUMMARY OF KEY ACHIEVEMENTS IN 2018

### Management and Administration Programme

- The Ministry conducted Feasibility Studies for the establishment of Foundries and Machine Tools Centres to improve capacity for the production of machine parts and tools for industries in Ghana and beyond.
- A Partnership has also been established with the Ministry of Education to establish two (2) tool centers.
- In support of SDG Goal 2 target 4 to promote sustainable agriculture and strengthen capacity for adaptation to climate change, the Ministry under the Sustainable Land and Water Management Project (SLWMP), provided 8,275 farmers with inputs to implement SLWM technologies on a 3,660.
- 1ha land to improve their farming practices.
- In addition, six Community Resource Management Areas (CREMAs) covering 88 communities within the Western Wildlife Biological Corridor were developed and farmers are being supported to undertake bee keeping and shea nut processing.



*Composting*



*Stone*

*lining*



*Shea nut processors*



*Bee-keeping*





- The Ministry established a total of 25 hectares each of Green Fire Breaks around Kulpawn and Ambalara forest reserves to help improve management of the Forest Reserves.
- It also generated climate change projections for the White and Black Volta and the Oti River basins under the Adaptation Fund Project.



*Fire Belt, Nabugum, Nandom District*



*Bore Hole drilled at Yidongo, Bongo*

- The final drafts of the Environmental Policy for Oil and Gas and the National Biodiversity Policy were submitted for Cabinet's approval.
- In addition, a draft Plastic Management Policy with its Implementation Plan was developed.



*Stakeholder Consultations on Draft National Biodiversity Policy*

- The Ministry engaged an external service provider to collect an Advance Eco Fee on electronic and electrical equipment imported from 185 countries.
- The Ministry also implemented the German financed E-waste project through a Technical and financial cooperation for the recycling and sound environmental disposal of waste of Electronic and Electrical Equipment (EEE).
- The Ghana Innovation and Research Commercialization (GIRC) Centre is 60 percent complete.





*Science Granting Council Initiative (SGCI) Annual General Meeting from 4<sup>th</sup>-6<sup>th</sup> July 2018*

- The Ministry submitted the Cabinet approved Policy Document for the establishment of the Presidential Advisory Council on Science, Technology and Innovation (PACSTI) to the Office of the President for Executive Action.

## Research and Development Programme

- The Ministry through the Savannah Agriculture Research Institute of the Council for Scientific and Industrial Research (CSIR-SARI) developed and released three super colourful varieties of sweet potato (Nan, Nyumingre and TU-Diedi). The characteristics of these varieties are highlighted in Table 1 below. This supports target 1 of SDG goal 2 in ending hunger and ensuring access by all people to safe nutritious and sufficient food all year round.

**Table 1. Morphological characters:**







Character	Nanungungu	TU-Purple	Obari
<b>1. Vines</b>			
Twining ability	Non-twining	Non-twining	Slightly-twining
Total vine length per plant (cm)	143.1	156.8	202.1
Plant growth habit	Semi-erect (75-150cm)	Spreading (151-250cm)	Spreading (151-250cm)
Mean vine girth (cm)	2.5	2.1	1.4
Mean number of branches	5	4	5
Vine apex colour	Yellow green	Greyish green	Green with purple veins
Vine internode length (cm)	Short (3-5)	Intermediate (6-9)	Short (3-5)
Vine internode diameter (mm)	Intermediate (7)	Intermediate (7)	Thin (4.5)
Ground cover	High (75-90%)	Total (>90%)	High (75-90%)
Predominant vine colour	Green	Green with few purple spots	Green
Secondary vine colour	Absent	Green base	Purple nodes











Character	Nanugungungu	TU-Purple	Obari
Mean number of nodes per vine	29	29	44
<b>2. Leaf</b>			
Colour of young leaf	Yellow green	Greyish-green (due to dense pubescence)	Green with purple veins on upper surface
Colour of petiole	Green	Green with purple at both ends	Green with purple at both ends.
Leaf vein colour (abaxial view)	Green	Green	All veins mostly purple
Leaf shape	Hastate (trilobular and spear-shaped with basal lobes more or less divergent)	Lobed	Triangular
Leaf lobe type	Slight	Slight	No lateral lobes
Leaf lobe number	3	5	1
Shape of central leaf lobe	Triangular	Triangular	Triangular




**Leaf colour:**

	Nanugungugu	Purple	Obari
Colour of young leaf	 Yellow green	 Greyish-green (due to dense pubescence)	 Green with purple veins on upper surface
Leaf petiole colour	 Green	 Green with purple at both ends	 Green with purple at both ends









	Nanugungugu	Purple	Obari
Leaf vein colour (Abaxial view)	 Green	 Green	 Mostly or totally purple
Leaf shape (outline of the leaf)	 Hastate	 Lobed	 Triangular

### Tuber

	Genotype		
Root characteristics	Nanugungugu	Purple	Obari
Storage root shape	 Long oblong	 Obovate	 Oblong



	Genotype		
Root characteristics	Nanugungungu	Purple	Obari
Storage root skin colour	 Brownish orange	 Purple-red	 Pale yellow
Storage root flesh colour	 Intermediate orange	 Strongly pigmented with anthocyanins	 White
Storage root DM	26 - 29.3%	32.8 - 35%	34.3 - 38%
Root Surface defects	Absent	Absent	Shallow horizontal constrictions

- The Council also distributed about 22,000 germinated oil palm seeds and 15,000 oil palm seedlings to famers.
- 2,700 improved coconut seedlings and 3,046 assorted tree crop seedlings were supplied to farmers.
- An additional 120,000 seedlings of bamboo were raised for Environmental Protection Agency (EPA) to restore degraded lands around water bodies in Northern Ghana using the developed technology.
- The CSIR developed DNA diagnostic tools for detection of *Onchocerca volvulus* infections in blackfly vectors.



- This is very crucial in the support of the Onchocerciasis elimination plan by 2025. Goal 2 target 3 of the SDGs support this as it seeks to among other things provide productive resources and inputs.
- The Sector also recorded a 30 percent adoption rate of improved locally- packaged technologies by Micro Small and Medium Enterprises (MSMEs). Also, 90 research findings were adopted by Industry. This also falls in line with goal 2 target 3 above.
- The CSIR developed polymer/clay/bitumen to replace the conventional bitumen and recycled common waste plastics by modifying it with aggregate for road construction and repairs.
- The Ministry through the Ghana Atomic Energy Commission (GAEC) monitored 412 base stations for telecommunication masts.
- The commission also carried out 260 pre-installation safety assessments on Frequency Modulation (FM) and Radio Frequency (RF) cell sites and issued conditional compliance certificates.
- The Commission carried out 44 safety assessments for X-ray and radiation facilities.



*Field Monitoring of Masts by GAEC team*



*Assessment of food/dairy products and water samples for radioactive contamination.*

- GAEC processed 25 tons of products (food, herbal, medical items, peat) using Gamma Irradiation Facility for the management of postharvest losses and enhancing healthcare delivery.
- GAEC also established Fall armyworm colony and developed Standard Operating Procedures for rearing. In addition, five (5) insecticides were screened for bio-efficacy against the fall armyworm.







*Fall Armyworm tests at BNARI, GAEC*



*Medical Supplies treated at the GIF facility*



*Food products (peas) processed at the GIF facility*

- GAEC undertook an outreach programme to schools, educating students on how to prevent malaria on World Malaria Day.



*GAEC undertaking outreach programme on World Malaria Day*





*Welding using NDT Techniques*

## **Environmental Protection and Management Programme**

- The EPA monitored air quality at 14 sites. The results indicated that PM10 levels were above the EPA 24hour level of 70 $\mu$ g/m<sup>3</sup>.
- The EPA monitored 1,140 undertakings of which 400 were compliant and 740 were non-compliant.
- The EPA also issued 1,560 Environmental Assessment permits for projects as well as 11,700 chemical licenses.
- The Agency monitored 52 industries in the Accra/Tema region for effluent quality and the results were higher than the EPA recommended guideline levels 50mg/l, 75 Nephelometric Turbidity Unit (NTU) and 1500  $\mu$ S/Cm.
- Scoping report on Strategic Environmental Assessment (SEA) of opening up the Voltaian and Keta Basins for Onshore Oil and Gas Exploration and Production finalized and disseminated.
- A draft Composite Onshore Oil and Gas Regulation was developed for onward transmission to the Attorney General's Department.
- The EPA enrolled 14 schools to practice source waste segregation programme in Greater Accra.
- Training was held for 150 staff, farmers and pesticide dealers on pesticide regulation and safe/judicious use of pesticides.
- 280 pesticide dealers were trained on pesticide regulation and safe/judicious use of pesticides.



- The Nuclear Regulatory Authority (NRA) monitored 250 users of radiation who are applying the regulations and guidance documents.



*NRA Regulatory Officers on Inspection at SSNIT Hospital*

### **Spatial Planning and Human Settlement Programme**

- The Ministry submitted the final draft Legislative Instruments (LIs) of Land Use and Spatial Planning Act, 2016 (Act 925) to the Attorney General for comments and inputs and further submission to Parliament.
- The LUSPA organised sensitization on Street Naming and Property addressing in all 10 regions in collaboration with Ministry of Local Government and Rural Development (MLGRD).



*GIS training for MMDAs*



*GIS training for MMDAs*

### **Biotechnology Development Programme**

- The Ministry through the National Biosafety Authority (NBA) submitted the GMO Regulation to Parliament for approval.





- The NBA also conducted five public awareness programmes on Biosafety. In addition, 80 percent works is completed on the Genetically Modified Organisms (GMO) detection laboratory.



*Seminar on GMO, Teacher's Hall, Accra*



*GMO Detection Laboratory 80% Complete*





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## 6. EXPENDITURE TRENDS FOR THE MEDIUM-TERM

The Ministry over the 2017 and 2018 fiscal years was allocated a total amount of GH¢349,152,142.00 and GH¢361,978,374.00 respectively, comprising of funds from GoG, IGF and DPs. The Compensation budget for both years were GH¢177,765,586.00 and GH¢211,772,898.00 respectively, representing a 19% increase in 2018. The budget allocation for Goods and Services, on the other hand, reduced by 60% from GH¢11,200,390.00 in 2017 to GH¢4,412,000.00 in 2018. The Ministry also recorded a 33% reduction in its approved CAPEX budget from GH¢6,000,000.00 in 2017 to GH¢4,000,000.00 in 2018. The IGF budget allocations increased from GH¢56,688,121.00 in 2017 to GH¢80,630,147.00 in 2018. Approved expected revenues from Development Partners reduced from GH¢97,498,045.00 in 2017 to GH¢61,163,259.00 in 2018.

The Ministry recorded a total expenditure of GH¢305,710,738.79 for the 2017 fiscal year. The expenditure as a ratio of total allocations was 93% for Compensation of Employees, 27% for Goods and Services, 96% for IGF and DP funds. There were also no releases for CAPEX in 2017. By comparison, the Ministry, as at August, 2018 had received a total amount of GH¢197,715,618.00, representing 54% of its 2018 budget allocation. The total receipts as a ratio of total allocations was 53% for Compensation of Employees, 54% for Goods and Services, 11% for CAPEX, 99.67% for IGF, and 93% for DP funds.

With the limited budgets in 2019 however, the Environment, Science, Technology and Innovation Sector will continue the implementation of the Sustainable Land Water Management Project (SLWMP) and Adaptation Fund Project in the three (3) Northern Regions to address climate change adaptation issues. In addition, a National Biodiversity Strategy and Action Plan will be developed, while the Plastic Management Policy and its accompanying Implementation Plan will be finalized.

The construction of a recycling plant at Old Fadama (Agbogbloshie) will begin in 2019 under the national E-waste project, while the construction of two (2) Hand over Centres (HOC) will commence under the German financed E-waste project. The Ministry will continue to support the operationalization of the GIRC Centre in 2019 and strengthen the Science, Technology and Innovation (STI) Advisory System for Policy Makers by setting up the Presidential Advisory Council on Science, Technology and Innovation (PACSTI) secretariat. The Ministry will also establish a foundry and Compute Numerical Control (CNC) machine tools centre to kick-start the promotion and production of machine parts. The Ministry will also support the operationalization of the High Performance Computing Centers (HPCC).





## 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 (MESTI)

Funding: All Source of Funding

Year: 2019 | Currency: GH Cedi

Version 1

	2019	2020	2021	2022
<b>Programmes - Ministry of Environment Science, Technology</b>	<b>417,954,342</b>	<b>419,263,630</b>	<b>419,263,630</b>	<b>419,263,630</b>
<b>01701 - Management And Administration</b>	<b>35,053,126</b>	<b>35,440,315</b>	<b>35,440,315</b>	<b>35,440,315</b>
<b>01701001 - General Administration</b>	<b>11,832,161</b>	<b>12,219,350</b>	<b>12,219,350</b>	<b>12,219,350</b>
21 - Compensation of employees [GFS]	1,995,106	1,995,106	1,995,106	1,995,106
22 - Use of goods and services	7,937,055	8,324,244	8,324,244	8,324,244
31 - Non financial assets	1,900,000	1,900,000	1,900,000	1,900,000
<b>01701003 - Human Resource</b>	<b>104,646</b>	<b>104,646</b>	<b>104,646</b>	<b>104,646</b>
22 - Use of goods and services	104,646	104,646	104,646	104,646
<b>01701004 - Policy, Planning, Budgeting, Monitoring and Evalu</b>	<b>23,032,602</b>	<b>23,032,602</b>	<b>23,032,602</b>	<b>23,032,602</b>
22 - Use of goods and services	7,228,316	7,228,316	7,228,316	7,228,316
31 - Non financial assets	15,804,286	15,804,286	15,804,286	15,804,286
<b>01701005 - Statistics; Research; Information and Public Relati</b>	<b>83,717</b>	<b>83,717</b>	<b>83,717</b>	<b>83,717</b>
22 - Use of goods and services	83,717	83,717	83,717	83,717
<b>01702 - Research And Development</b>	<b>243,936,575</b>	<b>244,455,174</b>	<b>244,455,174</b>	<b>244,455,174</b>
<b>01702001 - Scientific And Industrial Research</b>	<b>174,838,689</b>	<b>174,838,689</b>	<b>174,838,689</b>	<b>174,838,689</b>
21 - Compensation of employees [GFS]	147,562,163	147,562,163	147,562,163	147,562,163
22 - Use of goods and services	15,038,202	15,038,202	15,038,202	15,038,202
31 - Non financial assets	12,238,324	12,238,324	12,238,324	12,238,324
<b>01702002 - Nuclear Science And Space Science Technology</b>	<b>69,097,886</b>	<b>69,616,485</b>	<b>69,616,485</b>	<b>69,616,485</b>
21 - Compensation of employees [GFS]	61,246,299	61,246,299	61,246,299	61,246,299
22 - Use of goods and services	3,963,660	3,963,660	3,963,660	3,963,660
27 - Social benefits [GFS]	261,000	261,000	261,000	261,000
28 - Other expense	257,000	257,000	257,000	257,000





## 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 (MESTI)

Funding: All Source of Funding

Year: 2019 | Currency: GH Cedi

Version 1

	2019	2020	2021	2022
31 - Non financial assets	3,369,927	3,888,526	3,888,526	3,888,526
<b>01703 - Environmental Protection And Management</b>	<b>120,648,161</b>	<b>121,051,661</b>	<b>121,051,661</b>	<b>121,051,661</b>
<b>01703001 - Environmental Compliance And Enforcement</b>	<b>70,307,848</b>	<b>70,711,348</b>	<b>70,711,348</b>	<b>70,711,348</b>
22 - Use of goods and services	44,592,848	44,996,348	44,996,348	44,996,348
27 - Social benefits [GFS]	1,300,000	1,300,000	1,300,000	1,300,000
28 - Other expense	415,000	415,000	415,000	415,000
31 - Non financial assets	24,000,000	24,000,000	24,000,000	24,000,000
<b>01703002 - Environmental Education Information And Commu</b>	<b>43,041,798</b>	<b>43,041,798</b>	<b>43,041,798</b>	<b>43,041,798</b>
21 - Compensation of employees [GFS]	43,041,798	43,041,798	43,041,798	43,041,798
<b>01703003 - Enforcement and Compliance of ionizing and non-</b>	<b>7,298,515</b>	<b>7,298,515</b>	<b>7,298,515</b>	<b>7,298,515</b>
21 - Compensation of employees [GFS]	6,809,527	6,809,527	6,809,527	6,809,527
22 - Use of goods and services	298,988	298,988	298,988	298,988
31 - Non financial assets	190,000	190,000	190,000	190,000
<b>01704 - Spatial Planning And Human Settlement</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>
<b>01704001 - Human Settlement and Land Use Research and Pol</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>
21 - Compensation of employees [GFS]	16,903,456	16,903,456	16,903,456	16,903,456
22 - Use of goods and services	448,482	448,482	448,482	448,482
31 - Non financial assets	380,000	380,000	380,000	380,000
<b>01705 - Biosafety Development</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>
<b>01705001 - Biotechnology Regulation</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>
21 - Compensation of employees [GFS]	95,554	95,554	95,554	95,554
22 - Use of goods and services	285,988	285,988	285,988	285,988
27 - Social benefits [GFS]	13,000	13,000	13,000	13,000





## 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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

**Version 1**

	2019	2020	2021	2022
31 - Non financial assets	190,000	190,000	190,000	190,000



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## **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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

**Version 1**

	2019	2020	2021	2022
<b>01701 - Management And Administration</b>	<b>35,053,126</b>	<b>35,440,315</b>	<b>35,440,315</b>	<b>35,440,315</b>
<b>01701001 - General Administration</b>	<b>11,832,161</b>	<b>12,219,350</b>	<b>12,219,350</b>	<b>12,219,350</b>
21 - Compensation of employees [GFS]	1,995,106	1,995,106	1,995,106	1,995,106
22 - Use of goods and services	7,937,055	8,324,244	8,324,244	8,324,244
31 - Non financial assets	1,900,000	1,900,000	1,900,000	1,900,000
<b>01701003 - Human Resource</b>	<b>104,646</b>	<b>104,646</b>	<b>104,646</b>	<b>104,646</b>
22 - Use of goods and services	104,646	104,646	104,646	104,646
<b>01701004 - Policy, Planning, Budgeting, Monitoring and Evalu</b>	<b>23,032,602</b>	<b>23,032,602</b>	<b>23,032,602</b>	<b>23,032,602</b>
22 - Use of goods and services	7,228,316	7,228,316	7,228,316	7,228,316
31 - Non financial assets	15,804,286	15,804,286	15,804,286	15,804,286
<b>01701005 - Statistics; Research; Information and Public Relati</b>	<b>83,717</b>	<b>83,717</b>	<b>83,717</b>	<b>83,717</b>
22 - Use of goods and services	83,717	83,717	83,717	83,717



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## **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 tools centre to kick-start the promotion and production of machine parts, as well as supporting the operationalization of the High Performance Computing Centers (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



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Technologies, promote International Cooperation and Linkages, develop National capacity for Space Science and Technologies, strengthen STI Advisory System for Policy Makers by setting up the Presidential Advisory Council on Science, Technology and Innovation (PACSTI) secretariat, 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 (Agbogbloshie) under the national E-waste project, as well as two (2) 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 three (3) 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 tools centre to kick-start the promotion and production of machine parts, as well as support the operationalization of the High Performance Computing Centers)
- Develop Human Capital for STI Development (provide grants to STI students/professional associations)
- Establish an Effective National Innovative System (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
- Strengthen STI Advisory System for Policy Makers (set up the PACSTI secretariat)





- 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 Centers (HOC), as well as constructing a recycling plant at Old Fadama (Agbogbloshie).
- 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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Land area where Sustainable Land and Water Management Practices have been adopted as a result of the SLWMP	Size of land (in Hectares)	7,338.6	10,998.7	14,000	15,000	-	-



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Land users adopting Sustainable Land and Water Management Practices as a result of the SLWMP	No. of farmers adopting the practices	18,421	26,696	28,000	30,000	-	-
Direct SLWMP beneficiaries	No. of farmers	34,213	48,498	52,000	60,000	-	-
	% of which are women	55%	55.5%	40%	40%	-	-
Oil and Gas environment policy developed	Policy document submitted to Cabinet by	-	-	End of June	-	-	-
Develop legislation for Chemical Weapon Convention	Policy document submitted to Cabinet by	-	-	End of September	-	-	-
National Biodiversity policy developed	Policy document submitted to Cabinet by	-	-	End of June	-	-	-
Master Plan for GH(I) NDC	Master plan ready by	-	-	31 <sup>st</sup> March	-	-	-
Mainstreaming STI Into National Development Agenda	No. of sectors with STI mainstreamed into their programmes	3	4	5	6	8	10
Funding secured for STI activities	Number of STI grants awarded	3	3	5	7	10	10



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Building of STI Infrastructure Capacity	Number of Incubation Centers established	N/A	1	2	4	4	4
Establishing an Effective National Innovative System	Number of National Innovation Agency/ Centers established and	N/A	1	2	2	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
<b>Internal management of the organisation</b>	<b>Acquisition of Movable and Immovable Assets</b>
Environmental policy integration and management	Maintenance, rehabilitation, refurbishment and upgrading of existing facilities
Climate change policy and programmes	
Green Economy activities	
Natural Resource and Environmental Governance Activities	
Development and promotion of the application of science and technology	
Local & international affiliations	
Procurement of office supplies and consumables	
Management of assets register	
Cleaning and general services	
Disposal of government assets	





## 2.8. Budget by Chart of Account

### 8 - Sub-Programme and Natural Account

**Entity:** 017 - Ministry of Environment Science, Technology and Innovation (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
<b>01701001 - General Administration</b>	<b>11,832,161</b>	<b>12,219,350</b>	<b>12,219,350</b>	<b>12,219,350</b>
21 - Compensation of employees [GFS]	1,995,106	1,995,106	1,995,106	1,995,106
22 - Use of goods and services	7,937,055	8,324,244	8,324,244	8,324,244
31 - Non financial assets	1,900,000	1,900,000	1,900,000	1,900,000



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 20120	Indicative Year 2021	Indicative Year 2022
Internal Audit reports	Number of audit reports submitted per year	4	2	4	4	4	4
	Number of ARIC meetings held	3	2	4	4	4	4
Financial reports/statement	Monthly financial reports submitted by	15 <sup>th</sup> of the ensuing month	15 <sup>th</sup> of the ensuing month	15 <sup>th</sup> of the ensuing month	15 <sup>th</sup> of the ensuing month	15 <sup>th</sup> of the ensuing month	15 <sup>th</sup> of the ensuing month
	Number of financial statements prepared	End of 1 <sup>st</sup> quarter of the ensuing year	End of 1 <sup>st</sup> quarter of the ensuing year	End of 1 <sup>st</sup> quarter of the ensuing year	End of 1 <sup>st</sup> quarter of the ensuing year	End of 1 <sup>st</sup> quarter of the ensuing year	End of 1 <sup>st</sup> 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	



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Organize workshop on Civil Service Rules and Regulations	Number of Workshops	-	-	2	2	2	2
Organize HR Forum/ workshop with sector Agencies/Departments to discuss HR issues	Programme undertaken and report generated	1	-	2	2	2	2
Scheme of Service Training programmes for all categories of staff	Number of staff trained and reports produced	10	13	20	20	20	20
Workshop organized on Cabinet Memo for the Leadership of the Ministry	Workshop undertaken and report available	-	-	2	2	2	-
Promotion interviews organized	Promotions interview reports available	15	13	20	20	20	20
Annual Staff Performance Appraisal Report	Report submitted to OHCS by	31 <sup>st</sup> January	31 <sup>st</sup> January	31 <sup>st</sup> January	31 <sup>st</sup> January	31 <sup>st</sup> January	31 <sup>st</sup> January
Staff trained and capacity developed	Number of officers trained	2	2	2	4	4	4





Main Outputs	Output Indicator	Past years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Participation in local and International training/ conference	No. of officers (%) who attended various training/ conferences	25	15 (50%)	20	20	20	20

#### 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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
01701003 - Human Resource	104,646	104,646	104,646	104,646
22 - Use of goods and services	104,646	104,646	104,646	104,646



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## **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.



### 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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Annual monitoring and evaluation report	Annual M&E report produced and disseminated by	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March
MDA Annual Action Plan	Annual MESTI Sector plan prepared by	January	January	January	January	January	January
Performance Reviewed	Performance indicators updated and reported on to NDPC by	July 2017	July 2018	July 2019	July 2020	July 2021	July 2022
	Prepare Annual Performance Report to OHCS by	15 <sup>th</sup> January	15 <sup>th</sup> January	15 <sup>th</sup> January	15 <sup>th</sup> January	15 <sup>th</sup> January	15 <sup>th</sup> January
	Number of quarterly progress reports produced	4	2	4	4	4	4
Sector budget Prepared	Sector budget prepared, presented and approved by	March 2017	December 2017	December 2018	December 2019	December 2020	December 2021
Annual Budget Performance report	Report submitted by	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March	31 <sup>st</sup> March
Hand Over Centre (HOC) constructed for E-waste project	HOC constructed by	N/A	N/A	Dec. 2019	N/A	N/A	N/A



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Implement National Anti-Corruption Action Plan (NACAP)	NACAP report submitted to CHRAJ by	N/A	-	15 <sup>th</sup> Jan.	15 <sup>th</sup> Jan.	15 <sup>th</sup> Jan.	15 <sup>th</sup> 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	E-waste Project
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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
01701004 - Policy, Planning, Budgeting, Monitoring an	23,032,602	23,032,602	23,032,602	23,032,602
22 - Use of goods and services	7,228,316	7,228,316	7,228,316	7,228,316
31 - Non financial assets	15,804,286	15,804,286	15,804,286	15,804,286



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Dissemination of sector information to the general public	Number of public fora on environment and STI held	5	5	5	5	5	5
Annual Monitoring and evaluation report dissemination	Reports disseminated by	31 <sup>st</sup> July	31 <sup>st</sup> July	31 <sup>st</sup> July	31 <sup>st</sup> July	31 <sup>st</sup> July	31 <sup>st</sup> July
Response to petitions from the general public	Response provided within	20 days	20 days	20 days	20 days	20 days	20 days
Development and update of database	Number of periodic updates on MESTI's website	14	14	24	24	24	24

### 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	No Projects
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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
01701005 - Statistics; Research; Information and Public	83,717	83,717	83,717	83,717
22 - Use of goods and services	83,717	83,717	83,717	83,717



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## **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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

**Version 1**

	2019	2020	2021	2022
<b>01702 - Research And Development</b>	<b>243,936,575</b>	<b>244,455,174</b>	<b>244,455,174</b>	<b>244,455,174</b>
<b>01702001 - Scientific And Industrial Research</b>	<b>174,838,689</b>	<b>174,838,689</b>	<b>174,838,689</b>	<b>174,838,689</b>
21 - Compensation of employees [GFS]	147,562,163	147,562,163	147,562,163	147,562,163
22 - Use of goods and services	15,038,202	15,038,202	15,038,202	15,038,202
31 - Non financial assets	12,238,324	12,238,324	12,238,324	12,238,324
<b>01702002 - Nuclear Science And Space Science Technology</b>	<b>69,097,886</b>	<b>69,616,485</b>	<b>69,616,485</b>	<b>69,616,485</b>
21 - Compensation of employees [GFS]	61,246,299	61,246,299	61,246,299	61,246,299
22 - Use of goods and services	3,963,660	3,963,660	3,963,660	3,963,660
27 - Social benefits [GFS]	261,000	261,000	261,000	261,000
28 - Other expense	257,000	257,000	257,000	257,000
31 - Non financial assets	3,369,927	3,888,526	3,888,526	3,888,526



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Biotechnology: - Germplasm collected, characterized, conserved and distributed nationwide.	No. of Plant Accessions collected and conserved	4382	885	6500	7500	8500	10,000
	No. of Plant Accessions distributed nation Wide	7112	388	9600	10050	12000	15,000
Improved varieties of crops, livestock, fisheries and Poultry Developed and transferred	No. of improved varieties of crops and animal developed and disseminated	4	8	10	12	15	20
Landscape management systems or technologies resilient to climate change vulnerabilities in time and space	No. of technologies for Sustainable management, conservation and utilization of forest resources developed	2	4	6	8	10	12



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Water, air and soil borne diseases Controlled and eliminated	Percentage reduction in rate of Morbidity, Morality and Poverty associated with NTDs.	2-4%	4-6%	6-8%	8-10%	10-12%	12-15%
local raw materials used to develop essential materials and industrial products.	Number of artisans/stakeholders trained on products developed from local raw materials	70	90	100	110	120	150
Renewable Energy systems for both domestic and commercial buildings Promoted.	No. of Solar or Renewable energy systems promoted and installed	3	5	7	9	12	15
ICT Centre for the provision of electronics and computer engineering services Established.	No. of training sessions organized.	3	4	6	8	10	12
Baseline surveys and adoption studies of released crop varieties conducted.	Number of baseline surveys and adoption studies carried out on a crop variety	2	3	4	5	6	8
Improved planting materials produced and sold	Number and type of planting materials produced	120 000 oil palm germinated seeds	135 000 oil palm germinated seeds	150 000 oil palm germinated seeds	165 000 oil palm germinated seeds	170 000 oil palm germinated seeds	200 000 oil palm germinated seeds





Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
	Number and type of planting materials sold	100,000 oil palm seedlings	125 000 oil palm seedlings	135 000 oil palm seedlings	140 000 oil palm seedlings	150 000 oil palm seedlings	180 000oil palm seedlings

#### 4. Budget Sub-Programme Operations and Projects

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

Operations	Projects
<b>Development and promotion of the application of science and technology</b>	<b>Acquisition of Movable and Unmovable Assets</b>
Food Security and Poverty Reduction	
Climate Change, Environmental Management & Green Technology	
Biomedical and Public Health	
Material Science and Manufacturing	
Energy and Petroleum	
Electronics and ICT	
Science and People	





## 2.8. Budget by Chart of Account

### 8 - Sub-Programme and Natural Account

**Entity:** 017 - Ministry of Environment Science, Technology and Innovation (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
<b>01702001 - Scientific And Industrial Research</b>	<b>174,838,689</b>	<b>174,838,689</b>	<b>174,838,689</b>	<b>174,838,689</b>
21 - Compensation of employees [GFS]	147,562,163	147,562,163	147,562,163	147,562,163
22 - Use of goods and services	15,038,202	15,038,202	15,038,202	15,038,202
31 - Non financial assets	12,238,324	12,238,324	12,238,324	12,238,324



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## **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.



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### **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Safety assessment of telecommunication base stations/cell sites (Conditional Compliance assessment) conducted	Number of Base Stations Assessed.	700	260	1,000	1,200	1,200	-
Telecommunication masts/base stations Monitored	1000 masts/base stations monitored	782	412	400	450	500	-
Occupational exposures for mine, industrial, medical, educational and educational research institution workers monitored.	Number of occupationally exposed workers involved in ionizing radiation monitored	507	250	700	700	1000	-
Consumable water by Gross alpha-beta and Gamma activity contamination measurement assessed	Number of samples analysed	-	500	700	1000	1500	-



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Siting and feasibility studies towards introduction of nuclear energy in Ghana conducted.	Level of siting and feasibility studies completed	10%	25%	40%	60%	75%	-
Stakeholder and public sensitisation meetings on adoption of nuclear power organised	No. of Public awareness, knowledge and acceptance of nuclear power programme organized	5	10	25	30	30	-
MPhil students Trained	Number of students trained	33	34	34	35	35	-
PhD students Trained	Number of students trained	5	6	6	7	7	-
Post graduate Education Course (PGECC) in Radiation Protection organised.	Number of radiation workers trained.	20	25	25	30	30	-
Field established for release of four varieties of cherry tomatoes	Number varieties released to farmers	-	3	4	4	4	4
Production plant for protein bait to control fruit fly menace completed.	Level of completion of Protein bait	70%	75 %	100%	-	-	-
Satellite converted into radio telescope for astronomical studies	Level of conversion	90	95	100	-	-	-





Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Ghana Space Policy developed	Ghana Space Policy developed by	-	-	31 <sup>st</sup> Oct	-	-	-
Outreach programmes to establish Astronomy Clubs in educational institutions organised	Number of established clubs in senior high schools.	10	15	30	45	60	-
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	3	5	7	8	10	-
Welding and NDT professionals trained.	Number of welders/NDT personnel certified.	20	30	45	60	90	-
Research conducted to improve radiotherapy and cancer treatment.	Number of researches conducted towards improving cancer treatment.	5	5	6	10	12	-



#### 4. Budget Sub-Programme Operations and Projects

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

Operations	Projects
<b>Development, promotion and commercialisation of nuclear research and technology</b>	<b>Acquisition of vehicles and refurbish laboratories for institutes</b>
Organize stakeholder and public sensitization meetings on the benefits of nuclear power	Acquisition of vehicles and refurbish laboratories for institutes
Site selection, economic and feasibility studies to integrate nuclear energy into the country's energy mix	Acquisition of new laboratory equipment to improve income generation and research activities
Development, promotion and commercialisation of nuclear research and technology	Construct the country's and world's first radioactive waste disposal facility in Ghana to ensure public and environmental safety
Payment of subscriptions and other financial obligations	Establishment of Welding and NDT training facility
Recurrent Expenditure for the 6 Institutes the Head office and the School of Nuclear and Allied Sciences (SNAS)	Building of factory to start producing and supplying vegetable and fruit farmers with baits control the fruit fly menace to support planting for food and jobs programme.
Use of radiation and nuclear medicine Technologies to diagnose and manage diseases as well as monitor and evaluate health conditions like tuberculosis and other communicable diseases.	Procure tractor and equipment for waste treatment
Monitoring of safety of telecommunication masts to ensure public safety	Establishment of State of the Art Nuclear Medical Imaging Centre to research into treatment of various cancers
Monitoring of occupational exposures for mine, industrial, medical, educational and educational research institution workers	Construction of Fence wall around GAEC
Establishment of Fall Armyworm colony and screening of insecticides for their control	
Train farmers in the production and use of organic compost	
Use of GIF for management of postharvest losses	
Groundwater sustainability and quality assessment to ascertain suitability for irrigation in the three northern regions	
Training of professionals on determination of leakages and integrity of welds using Non-Destructive Testing (NDT) techniques.	
Monitoring of POPs and particulate matter	
Scientific assessment of the environment and human health impact of e-waste.	



<b>Operations</b>
Training of MPhil and PhD Students
Developing Ghana Space Policy
Satellite converted into radio telescope for astronomical studies

<b>Projects</b>





## 2.8. Budget by Chart of Account

### 8 - Sub-Programme and Natural Account

**Entity:** 017 - Ministry of Environment Science, Technology and Innovation (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
<b>01702002 - Nuclear Science And Space Science Technol</b>	<b>69,097,886</b>	<b>69,616,485</b>	<b>69,616,485</b>	<b>69,616,485</b>
21 - Compensation of employees [GFS]	61,246,299	61,246,299	61,246,299	61,246,299
22 - Use of goods and services	3,963,660	3,963,660	3,963,660	3,963,660
27 - Social benefits [GFS]	261,000	261,000	261,000	261,000
28 - Other expense	257,000	257,000	257,000	257,000
31 - Non financial assets	<b>3,369,927</b>	<b>3,888,526</b>	<b>3,888,526</b>	<b>3,888,526</b>



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Nuclear Technologies commercialized	Number of technologies developed	19	21	22	22	23	-
Nuclear products and services including consultancy and training commercialized	Number of products, services offered	20	25	28	30	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	



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## **BUDGET PROGRAMME SUMMARY**

### **PROGRAMME 3: ENVIRONMENTAL 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.





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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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

**Version 1**

	2019	2020	2021	2022
<b>01703 - Environmental Protection And Management</b>	<b>120,648,161</b>	<b>121,051,661</b>	<b>121,051,661</b>	<b>121,051,661</b>
<b>01703001 - Environmental Compliance And Enforcement</b>	<b>70,307,848</b>	<b>70,711,348</b>	<b>70,711,348</b>	<b>70,711,348</b>
22 - Use of goods and services	44,592,848	44,996,348	44,996,348	44,996,348
27 - Social benefits [GFS]	1,300,000	1,300,000	1,300,000	1,300,000
28 - Other expense	415,000	415,000	415,000	415,000
31 - Non financial assets	24,000,000	24,000,000	24,000,000	24,000,000
<b>01703002 - Environmental Education Information And Commu</b>	<b>43,041,798</b>	<b>43,041,798</b>	<b>43,041,798</b>	<b>43,041,798</b>
21 - Compensation of employees [GFS]	43,041,798	43,041,798	43,041,798	43,041,798
<b>01703003 - Enforcement and Compliance of ionizing and non-</b>	<b>7,298,515</b>	<b>7,298,515</b>	<b>7,298,515</b>	<b>7,298,515</b>
21 - Compensation of employees [GFS]	6,809,527	6,809,527	6,809,527	6,809,527
22 - Use of goods and services	298,988	298,988	298,988	298,988
31 - Non financial assets	190,000	190,000	190,000	190,000



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
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%
		60%	65%	70%	75%	80%	85%
National Oil Spill Contingency Plan operationalised.	Number of simulation exercises undertaken	1	1	1	1	1	-
Approval given (EA and EMP permits) to companies for them to comply with Environmental Assessment (EA) regulations	Number of permits issued	4,638	1,560	5,612	6,173	6790	7,100
Level of pollution of effluent quality from industries sampled and analysed	Number of industries monitored for effluent quality	63	52	75	80	85	90
Annual compliance monitoring undertaken.	Number of Annual compliance monitoring events: Accra	4	4	4	5	6	7
	Other Regions	8	13	11	12	13	14



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Environmental indicators - air quality monitored.	Number of monitoring locations (Accra + regions)	13 sites	14 sites	16 sites	18 sites	20 sites	22 sites
Register on pesticides and industrial and consumer chemicals for proper handling and labelling developed.	Copy of a completed Register	1	1	1	1	1	1
Pesticides/industrial chemicals post registration and licensing/compliance monitoring and surveillance carried out.	Number of monitoring undertaken	1	1	1	1	1	1
Industries monitored to ensure the use of bio-oxodegradable additives in the manufacture of flexible Plastics	Number of industries monitored	26	28	29	31	33	35
System that effectively and rapidly responds and deal with chemical related emergencies nationwide developed	Percentage completion of the system	10%	30%	60%	80%	100%	-
climate change issues incorporated into sector medium term plans	Number of sectors with climate change mitigation and adaptation strategies	7	8	9	10	11	12



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#### 4. Budget Sub-Programme Operations and Projects

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

<b>Operations</b>	<b>Projects</b>
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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
<b>01703001 - Environmental Compliance And Enforceme</b>	<b>70,307,848</b>	<b>70,711,348</b>	<b>70,711,348</b>	<b>70,711,348</b>
22 - Use of goods and services	44,592,848	44,996,348	44,996,348	44,996,348
27 - Social benefits [GFS]	1,300,000	1,300,000	1,300,000	1,300,000
28 - Other expense	415,000	415,000	415,000	415,000
31 - Non financial assets	<b>24,000,000</b>	<b>24,000,000</b>	<b>24,000,000</b>	<b>24,000,000</b>



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Ewaste recyclers trained on sustainable management of e-waste	Number of trainings undertaken	2	3	3	4	5	6
Stakeholders trained on pesticide regulation and safe/judicious use of pesticides.	Number of training exercise undertaken on safe handling of pesticides	5	2	5	6	7	8

### 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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
01703002 - Environmental Education Information And	43,041,798	43,041,798	43,041,798	43,041,798
21 - Compensation of employees [GFS]	43,041,798	43,041,798	43,041,798	43,041,798



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Users of radiation complying with provisions of the regulations and guidance documents	Number of users of radiation applying the regulations and guidance documents	250	150	200	250	300	350
Reduction in the number of authorized facilities with noncompliance issues resulting in the protection of people and the environment from harmful effects of radiation	% of facilities with Noncompliance issues	20%	15%	15%	10%	8%	5%
General public and users of radiation sources educated	Number of education events held	260	265	300	320	330	350
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	1	1	1	1	1	1
Regulations for the control of ionizing and non-ionizing radiation;	Number of regulations drafted and reviewed	6	6	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	10	10	10	17



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Compliance by users of radiation sources and devices to Regulatory Requirements.	Number of facilities inspected	-	250	250	1800	1800	1800
Noncompliance issues Resolved	Number of enforcements carried out	6	10	25	25	25	25
General public and users of radiation sources educated	Number of public education held	-	350	350	350	350	-

#### 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 57 technical and support staff for the Nuclear Regulatory Authority (NRA)	Acquire equipment and vehicles for regulatory activities
Set the organizational chart and the scheme of service in line with international and IAEA standards	Commence construction of NRA office complex
Train staff of NRA	
Draft, review and promulgate regulations	
Educate public on radiation matters	





## 2.8. Budget by Chart of Account

### 8 - Sub-Programme and Natural Account

**Entity:** 017 - Ministry of Environment Science, Technology and Innovation (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
<b>01703003 - Enforcement and Compliance of ionizing a</b>	<b>7,298,515</b>	<b>7,298,515</b>	<b>7,298,515</b>	<b>7,298,515</b>
21 - Compensation of employees [GFS]	6,809,527	6,809,527	6,809,527	6,809,527
22 - Use of goods and services	298,988	298,988	298,988	298,988
31 - Non financial assets	190,000	190,000	190,000	190,000



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## **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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

**Version 1**

	2019	2020	2021	2022
<b>01704 - Spatial Planning And Human Settlement</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>
<b>01704001 - Human Settlement and Land Use Research and Pol</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>
21 - Compensation of employees [GFS]	16,903,456	16,903,456	16,903,456	16,903,456
22 - Use of goods and services	448,482	448,482	448,482	448,482
31 - Non financial assets	380,000	380,000	380,000	380,000



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
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	100	-	300	50	50	50
Reviewed Manuals for spatial plan completed (Revised editions from 2019 onwards)	Number of spatial planning manuals distributed	100	-	300	100	50	50
Development permitting procedures and business manual	Number of permitting guides and business manual distributed	100	150	300	100	100	100
Human settlement policy formulated and published	Number of human settlement policy guidelines distributed	-	-	-	300	100	-
Staff recruited for LUSPA	Number of Physical planners Recruited	-	100 spatial planners	100	50	50	50
Functional Regional Spatial	Number of RSPCs inaugurated	8 (80%)	-	-	-	-	-



Main Outputs	Output Indicator	Past Years		Projections			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Planning Committees established Head office complex of LUSPA completed	% completion level of office building	-	-	40	75	100	-

#### 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	<b>Acquisition of Movable and Unmovable Assets</b>
Preparation of Scheme of service	Construction of office (complex) building for the Land Use and Spatial Planning Authority.
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	





## 2.8. Budget by Chart of Account

### 8 - Sub-Programme and Natural Account

**Entity:** 017 - Ministry of Environment Science, Technology and Innovation (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

	2019	2020	2021	2022
<b>01704001 - Human Settlement and Land Use Research</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>	<b>17,731,938</b>
21 - Compensation of employees [GFS]	16,903,456	16,903,456	16,903,456	16,903,456
22 - Use of goods and services	448,482	448,482	448,482	448,482
31 - Non financial assets	380,000	380,000	380,000	380,000



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Land Use Planning and Management Information System (LUPMIS) upgraded	Fully upgraded & integrated version of LUPMIS by	-	31 <sup>st</sup> Dec	-	-	-	-
LUPMIS training organized for all MMDAs (stakeholders)	Number of MMDAs (stakeholders) with GIS Training Received (Reports available)	60	52	254	254	254	254

### 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 (254) 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)



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## **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			
		2017	2018	Indicative Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
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	-	-	50	60	60	60
Structure Plans for major settlements prepared of MMDAs	Number of Structure Plans prepared (for MMDAs)	-	2	50	50	50	50
Local Plans prepared for communities' country-wide.	Number of local plans prepared (As a percentage of built up of each MMDAs)	-	30	40	50	100	100
Monitoring and Evaluation visits on RSPAs and MMDAs	Number of M & E visits undertaken on RSPAs	-	-	10	10	10	10
	Number of M & E visits undertaken on MMDAs	-	-	254	254	254	254



#### 4. Budget Sub-Programme Operations and Projects

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

Operations	Projects
<b>Land use and spatial planning</b>	<b>Acquisition of Immovable and Movable Assets</b>
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	



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## **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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** GH Cedi

**Version 1**

	2019	2020	2021	2022
<b>01705 - Biosafety Development</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>
<b>01705001 - Biotechnology Regulation</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>
21 - Compensation of employees [GFS]	95,554	95,554	95,554	95,554
22 - Use of goods and services	285,988	285,988	285,988	285,988
27 - Social benefits [GFS]	13,000	13,000	13,000	13,000
31 - Non financial assets	190,000	190,000	190,000	190,000



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## **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			
		2017	2018	Budget Year 2019	Indicative Year 2020	Indicative Year 2021	Indicative Year 2022
Research institutions compliant with terms and conditions attached to permits granted in accordance to the Biosafety law.1	No. of Institutions compliant with conditions of permits granted	2	2	4	4	4	4
Biotechnology and biosafety staff trained on biosafety guidelines	No. of trainings conducted on Biotechnology and Biosafety guidelines.	2	3	4	4	4	4

### 4. Budget Sub-Programme Operations and Projects

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

Operations	Projects
<b>Development and Promotion of The Application of Science and Technology</b>	<b>Acquisition of Immovable and Movable Assets</b>
Conduct Biosafety capacity building	Complete the GMO detection Laboratory with equipments
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 (MESTI)

**Funding:** All Source of Funding

**Year:** 2019 | **Currency:** Ghanaian Cedi (GHS)

	2019	2020	2021	2022
<b>01705001 - Biotechnology Regulation</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>	<b>584,542</b>
21 - Compensation of employees [GFS]	95,554	95,554	95,554	95,554
22 - Use of goods and services	285,988	285,988	285,988	285,988
27 - Social benefits [GFS]	13,000	13,000	13,000	13,000
31 - Non financial assets	<b>190,000</b>	<b>190,000</b>	<b>190,000</b>	<b>190,000</b>









## 1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation (MESTI)  
Year: 2019 | Currency: GH Cedi

Version 1

ITES

	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	1,278,383			1,278,383											1,278,383
0170305001 - Western Regional Office	1,278,383			1,278,383											1,278,383
0170306 - Ashanti Regional Office	2,805,754			2,805,754											2,805,754
0170306001 - Ashanti Regional Office	2,805,754			2,805,754											2,805,754
0170307 - Brong Ahafo Regional Office	1,592,534			1,592,534											1,592,534
0170307001 - Brong Ahafo Regional Office	1,592,534			1,592,534											1,592,534
0170308 - Northern Regional Office	913,714			913,714											913,714
0170308001 - Northern Regional Office	913,714			913,714											913,714
0170309 - Upper East Regional Office	669,704			669,704											669,704
0170309001 - Upper East Regional Office	669,704			669,704											669,704
0170310 - Upper West Regional Office	611,359			611,359											611,359
0170310001 - Upper West Regional Office	611,359			611,359											611,359
0170311 - Head Office	1,307,066	448,482	380,000	2,135,548											2,135,548
0170311001 - Head Office	1,307,066	448,482	380,000	2,135,548											2,135,548
01704 - Ghana Atomic Energy Commission (G.A.E.C)	61,246,299	448,482	570,000	62,264,781	4,033,178	2,799,927	6,833,105								69,097,886
0170401 - Head Office	47,082,435	448,482	570,000	48,100,917		1,222,790	1,822,790								49,923,708
0170401001 - Head Office	47,082,435	448,482	570,000	48,100,917		1,222,790	1,822,790								49,923,708
0170402 - National Nuclear Research Institute (N.N.R.I.)	4,399,331			4,399,331		873,398	518,599	1,391,997							5,791,328
0170402001 - National Nuclear Research Institute (N.N.R.I.)	4,399,331			4,399,331		873,398	518,599	1,391,997							5,791,328
0170403 - Biotechnology and Nuclear Research Institute (B.N.R.I.)	3,572,997			3,572,997		316,162		316,162							3,889,159
0170403001 - Biotechnology and Nuclear Research Institute (B.N.R.I.)	3,572,997			3,572,997		316,162		316,162							3,889,159
0170404 - Radiation Protection Institute (R.P.I.)	1,887,005			1,887,005	1,620,828	1,681,328	3,302,155								5,189,160
0170404001 - Radiation Protection Institute (R.P.I.)	1,887,005			1,887,005	1,620,828	1,681,328	3,302,155								5,189,160
0170405 - School of Nuclear and Allied Sciences	1,471,490			1,471,490											1,471,490
0170405001 - School of Nuclear and Allied Sciences	1,471,490			1,471,490											1,471,490
0170406 - Radiological and Medical Sciences Research Institute	1,246,609			1,246,609											1,246,609





## 1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation (MESTI)  
Year: 2019 | Currency: GH Cedi  
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
0170406001 - Radiological and Medical Sciences Research Institute	1,246,609			1,246,609											1,246,609
<b>0170407 - Nuclear Power Institute</b>	748,930			748,930											748,930
0170407001 - Nuclear Power Institute	748,930			748,930											748,930
<b>0170408 - Ghana Space and Tech. Inst.</b>	837,503			837,503											837,503
0170408001 - Ghana Space and Tech. Inst	837,503			837,503											837,503
<b>01750 - Council for Scientific and Industrial Research (CSIR)</b>	<b>146,883,308</b>	<b>448,482</b>	<b>570,000</b>	<b>147,901,790</b>	<b>678,855</b>	<b>14,589,720</b>	<b>11,668,324</b>	<b>26,936,899</b>							<b>174,838,689</b>
<b>0175001 - Head Office</b>	12,499,263	109,095	570,000	13,178,358	678,855		11,668,324	12,347,179							25,525,537
0175001001 - General Administration	12,499,263	109,095		12,608,358	678,855			678,855							13,287,213
0175001006 - Corporate Finance			570,000	570,000			11,668,324	11,668,324							12,238,324
<b>0175002 - Crops Research Institute</b>	12,893,558	25,433		12,918,991				374,376							13,293,367
0175002001 - General Administration	12,893,558	25,433		12,918,991				374,376							13,293,367
<b>0175003 - Animal Research Institute</b>	10,743,661	22,518		10,766,179				3,095,103							13,861,282
0175003001 - General Administration	10,743,661	22,518		10,766,179				3,095,103							13,861,282
<b>0175004 - Soil Research Centre</b>	1,448,417	8,410		1,456,828											1,456,828
0175004001 - General Administration	1,448,417	8,410		1,456,828											1,456,828
<b>0175005 - Building, Road and Research Institute</b>	12,080,001	25,106		12,105,107				2,574,842							14,679,949
0175005001 - General Administration	12,080,001	25,106		12,105,107				2,574,842							14,679,949
<b>0175006 - Council for Scientific and Industrial Research (CSIR)</b>	8,908,006	24,865		8,932,871				766,495							9,699,366
0175006001 - General Administration	8,908,006	24,865		8,932,871				766,495							9,699,366
<b>0175007 - Institute of Industrial Research</b>	6,907,132	22,021		6,929,153				433,640							7,362,793
0175007001 - General Administration	6,907,132	22,021		6,929,153				433,640							7,362,793
<b>0175008 - Water Research Institute</b>	12,119,715	26,627		12,146,342				3,696,284							15,842,626
0175008001 - General Administration	12,119,715	26,627		12,146,342				3,696,284							15,842,626
<b>0175009 - Oil Palm Research Institute</b>	10,048,696	25,429		10,074,125				1,244,948							11,319,073
0175009001 - General Administration	10,048,696	25,429		10,074,125				1,244,948							11,319,073
<b>0175010 - Savana Agricultural Research Institute</b>	12,262,122	25,380		12,287,503				1,263,418							13,550,921



## 1.6. Appropriation Bill

Summary of Expenditure by Cost Center, Economic Item and Funding

Entity: 017 - Ministry of Environment Science, Technology and Innovation (MESTI)  
Year: 2019 | Currency: GH Cedi  
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
0175010001 - General Administration	12,262,122	25,380		12,287,503		1,263,418		1,263,418						13,550,921
<b>0175011 - Science &amp; Tech Policy Research Institute</b>	<b>3,881,079</b>	<b>16,525</b>		<b>3,897,603</b>		<b>198,946</b>		<b>198,946</b>						<b>4,096,549</b>
0175011001 - General Admin	3,881,079	16,525		3,897,603		198,946		198,946						4,096,549
<b>0175012 - Forestry Research Institute of Ghana</b>	<b>13,236,989</b>	<b>23,206</b>		<b>13,260,196</b>										<b>13,260,196</b>
0175012001 - General Admin	13,236,989	23,206		13,260,196										13,260,196
<b>0175013 - Plant Genetic Resource Research Institute</b>	<b>5,407,197</b>	<b>19,248</b>		<b>5,426,445</b>		<b>351,560</b>		<b>351,560</b>						<b>5,778,005</b>
0175013001 - General Administration	5,407,197	19,248		5,426,445		351,560		351,560						5,778,005
<b>0175014 - Institute of Science and Technology Information</b>	<b>4,333,402</b>	<b>20,858</b>		<b>4,354,260</b>		<b>340,505</b>		<b>340,505</b>						<b>4,694,765</b>
0175014001 - Institute of Science and Technology Information	4,333,402	20,858		4,354,260		340,505		340,505						4,694,765
<b>0175015 - Soil Research Institute</b>	<b>7,504,948</b>	<b>29,232</b>		<b>7,534,179</b>		<b>249,603</b>		<b>249,603</b>						<b>7,783,783</b>
0175015001 - General Administration	7,504,948	29,232		7,534,179		249,603		249,603						7,783,783
<b>0175016 - Ghana Grains and Development Project</b>	<b>10,105,886</b>	<b>24,530</b>		<b>10,130,415</b>										<b>10,130,415</b>
0175016001 - General Administration	10,105,886	24,530		10,130,415										10,130,415
<b>0175017 - Roots and Tuber Project</b>	<b>2,503,235</b>			<b>2,503,235</b>										<b>2,503,235</b>
0175017001 - General Administration	2,503,235			2,503,235										2,503,235
<b>01751 - National Biosafety Authority (NBA)</b>	<b>95,554</b>	<b>298,988</b>	<b>190,000</b>	<b>584,542</b>										<b>584,542</b>
<b>0175101 - General Admin</b>	<b>95,554</b>	<b>298,988</b>	<b>190,000</b>	<b>584,542</b>										<b>584,542</b>
0175101001 - General Admin	95,554	298,988	190,000	584,542										584,542
<b>01752 - Nuclear Regulatory Authority</b>	<b>6,809,527</b>	<b>298,988</b>	<b>190,000</b>	<b>7,298,515</b>										<b>7,298,515</b>
<b>0175201 - Gen. Admin</b>	<b>6,809,527</b>	<b>298,988</b>	<b>190,000</b>	<b>7,298,515</b>										<b>7,298,515</b>
0175201001 - Gen.Admin	6,809,527	298,988	190,000	7,298,515										7,298,515













REPUBLIC OF GHANA

## MINISTRY OF FINANCE

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