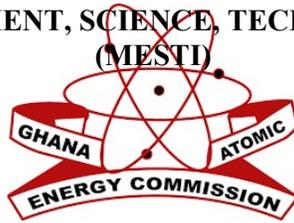




**REPUBLIC OF GHANA**

**MINISTRY OF ENVIRONMENT, SCIENCE, TECHNOLOGY & INNOVATION  
(MESTI)**



***SUBMITS***

**2020 ANNUAL PROGRESS REPORT**

**TO**

***THE NATIONAL DEVELOPMENT PLANNING COMMISSION (NDPC)***

***JANUARY, 2021***

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## LIST OF ACRONYMS

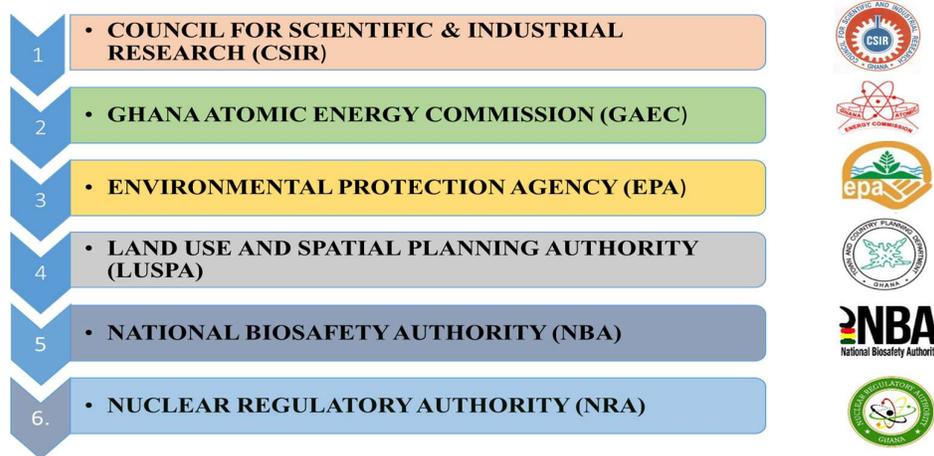
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CNC	Computer Numerical Control
CSIR	Council for Scientific and Industrial Research
CSO	Civil Society Organisation
EEE	Electronic and Electrical Equipment
EI	Executive Instrument
EPA	Environmental Protection Agency
GAEC	Ghana Atomic Energy Commission
GIRC	Ghana Innovation and Research Commercialisation (GIRC)
GIS	Geographic Information System
GoG	Government of Ghana
HOC	Hand Over Centre
HPC	High Performance Computing
IAEA	International Atomic Energy Agency
LUPMIS	Land Use Planning and Management Information System
M&E	Monitoring and Evaluation
MDA	Ministries, Departments and Agencies
MEST	Ministry of Environment, Science and Technology
MESTI	Ministry of Environment, Science, Technology and Innovation
MMDAs	Metropolitan, Municipal and District Assemblies
MOTCCA	Ministry of Tourism, Culture & Creative Arts
MoU	Memorandum of Understanding
MSMES	Micro Small and Medium Enterprises
MTDP	Medium Term Development Plan
NDC	Nationally Determined Contributions
NDPC	National Development Planning Commission
NDT	Non-Destructive Testing
NGO	Non-Governmental Organisation
NRA	Nuclear Regulatory Authority
PACSTI	Presidential Advisory Council on Science, Technology and Innovation
PM&E	Participatory Monitoring and Evaluation
PPME	Policy, Planning, Monitoring and Evaluation
R&D	Research and Development
RSDF	Regional Spatial Development Framework
SDF	Spatial Development Framework
SDG	Sustainable Development Goal
SLWMP	Sustainable Land and Water Management Project
SMTDP	Sector Medium Term Development Plan
STI	Science, Technology & Innovation

## CHAPTER ONE: INTRODUCTION

### 1.0 Background

The Ministry of Environment, Science, Technology and Innovation (MESTI), which forms part of government machinery, was established in 1993 as the Ministry of Environment and Science. In 2006, the Ministry was dissolved. Its portfolios on Environment and Science were added to the Ministry of Local Government and Rural Development (MLGRD) and the Ministry of Education respectively. In January 2009, the Ministry was reconstituted and named Ministry of Environment, Science and Technology (MEST), under Executive Instrument (E.I.) 7 Civil Service (Ministries) Instrument, 2009. However, in 2013, the Ministry was renamed Ministry of Environment, Science, Technology and Innovation (MESTI), under Executive Instrument (E.I.) 1 Civil Service (Ministries) Instrument, 2013. This section of the report focuses on the general overview of the sector Ministry. The Ministry has six (6) Agency /Authority, namely:



#### *The Mandate*

In line with sections 11 and 13 of the Civil Service Law 1993, (PNDCL 327) and by Executive Instrument (EI. 28, 2018), The Ministry is mandated to initiate and formulate policies on Environment, Science, Technology and Innovation, as well as coordinate, monitor and evaluate the implementation of plans, programmes and performance of the sector for national development. The Ministry is the Government's principal advisor on environmental sustainability, science and technological research and international matters that affect environment, science and technological development.

The Ministry is committed to promote sustainable environmental management and the adoption and application of science and technological innovations through the formulation of policies, monitoring and evaluation of the implementation of sector plans, programmes, and projects for national development.

#### *Mission*

The Ministry of Environment, Science, Technology, and Innovation exists to promote sustainable environmental management and the adoption and application of science and technological innovations through the formulation of policies, monitoring and evaluation of the implementation of sector plans, programmes, and projects for national development.

### ***Vision***

Sustainable development of Environment, Science, Technology and Innovation for all.

### ***Sector 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.

### ***Policy Objectives***

The Medium-Term National Development Plan Framework (MTNDPF) contains a number of policy objectives, out of which ten (10) have been adopted by the Ministry of Environment, Science, Technology and Innovation.

The adopted policy objectives of the Ministry are as follows:

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

### ***Core Functions***

The Environment, Science, Technology and Innovation sector has eight (8) core functions. These are:

1. Provide leadership and guidance for Environment, Science, Technology and Innovation within the broad sector of the economy through sound policy formulation and implementation,
2. 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,
3. Promote activities needed to underpin the standards and policies required for planning and implementation of sound scientific and technological development activities,
4. Ensure the coordination, supervision, monitoring and evaluation of activities of Environment, Science, Technology and Innovation while fulfilling national benefits-sharing commitments,
5. 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,
6. 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,
7. 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

8. Ensure effective environmental management and governance, in line with the functions of the Act 490, with the Environmental Protection Agency (EPA) as the main implementing agency and the MESTI playing an oversight, coordination and facilitating role.

### **1.1 Purpose of the Monitoring & Evaluation (M&E) for 2020**

MESTI in partnership with its Development Partners dedicated considerable funds to implement its development interventions as spelt out in the Sector Medium Term Development Plan (2018-2021). The Sector Medium Term Plan was prepared in accordance with the National Medium-Term Development Framework (NMTDF, 2018-2021).

As a result, monitoring and evaluating its implementation is critical for ensuring that the set goals and objectives are achieved. Thus, the purpose of M&E for the period was to:

1. Assess whether the SMTDP targets were being met.
2. Identify achievements, constraints and failures so that improvements can be made to the SMTDP and project designs to achieve better impact.
3. Collate information for the effective coordination of environmental, scientific, technology and innovative interventions.
4. Provide government, development partners and the general public with information on lessons learnt and facilitate evidence-based decision making.
5. Reinforce ownership of the SMTDP and build M&E capacity within the Sector.
6. Promote joint monitoring and evaluation of Sector projects and programmes and provide data and information for policy formulation and design of future projects and programmes; and

### **1.2 Process Involved in conducting M&E**

To ensure that the 2020 APR was prepared in a participatory manner, the Ministry followed the following steps:

- The Ministry obtained the NDPC format for the preparation of the Annual Progress Reports.
- The PPME Directorate based on the NDPC template designed a reporting format and template to obtain the required inputs from the Directorates and Agencies/ Authority.
- The reporting format and template were distributed to the Directorates and Agencies with deadlines for submission.
- The PPME Directorate then compiled inputs into the first draft.
- The Directorates and Agencies were given copies of the draft for their review and comments.
- The PPME Directorate finalised the report and submitted to NDPC.

During the year, the PPME Directorate also undertook some form of monitoring and evaluation through desk reviews of reports to ensure that the agencies implement their activities in line with the approved Annual Action Plan (AAP).

### **1.3 Status of implementation of SMTDP**

The Sector in preparing its Medium-Term Development Plan (MTDP) considered several factors to agree on the objectives to be achieved in the medium-term informed by the National Policy Framework. This informed the programming for the sector.

During the 2020 period, the Ministry and its agencies were able to undertake most of its activities as outlined in the SMTDP. The implementation of proportion of Annual Action Plan and SMTDP in 2020 are presented in section 1.3.1 and 1.3.2 respectively.

### 1.3.1 Proportion of Annual Action Plan implemented

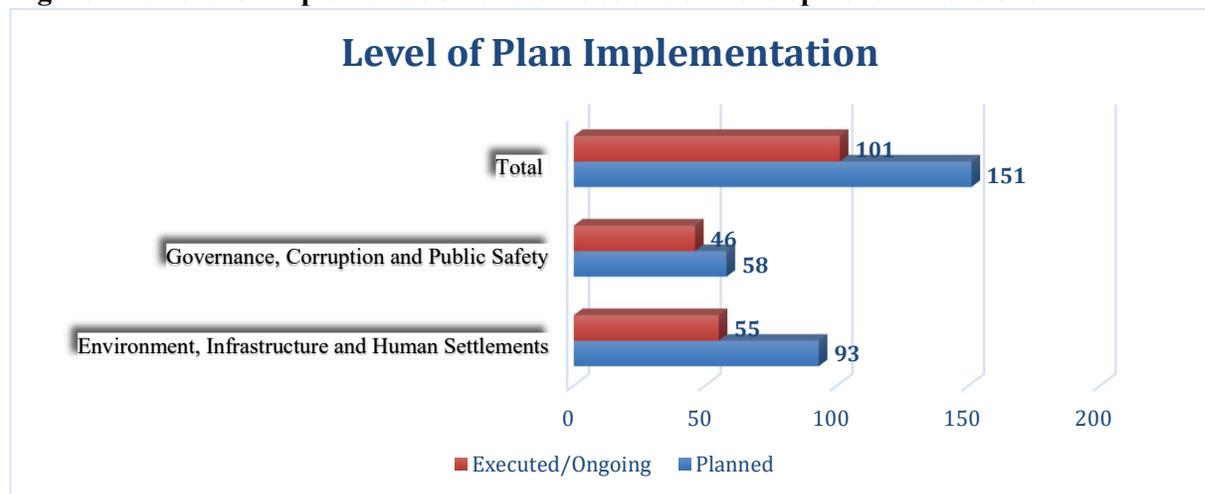
For the reporting period, One hundred and fifty-one (151) activities were planned under two dimensions, namely: Environment, Infrastructure and Human Settlements and Governance, Corruption and Public Accountability. The activities planned under the various dimensions were in furtherance of achieving the objectives of the sector.

Out of the One hundred and fifty-one (151) activities planned, ninety-three (93) were under Environment, Infrastructure and Human Settlements whiles fifty-eight (58) were under Governance, Corruption and Public Accountability. Out of the planned activities in Environment, Infrastructure and Human Settlements, a total of 55 activities representing 59% were implemented or being implemented whiles under Governance, Corruption and Public Accountability about 46 representing 79% were implemented or being implemented. Table 1.1 and figures 1.1 and 1.2 provide further information.

**Table 1.1: Detailed information on the Annual Action Plan Implementation**

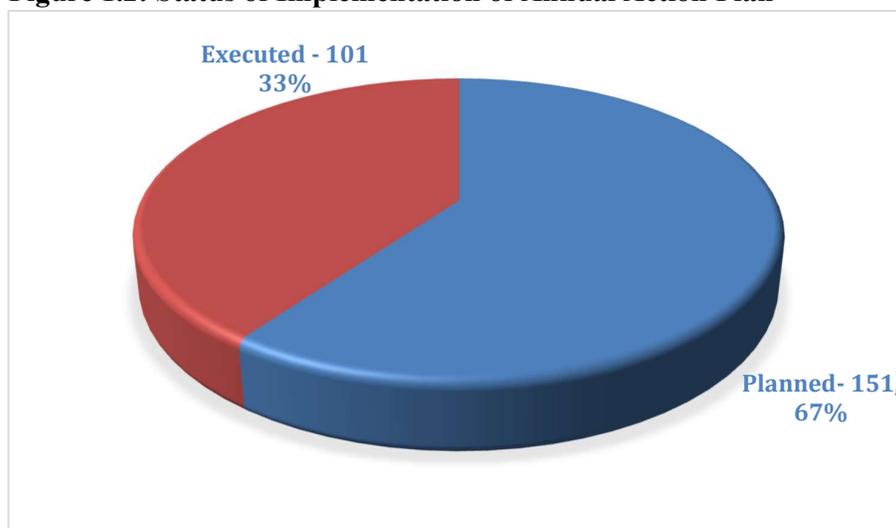
S/N	Development Dimension	2020	
		Planned	Executed
1.	Governance, Corruption and Public Accountability	58	46
2.	Environment, Infrastructure and Human Settlements	93	55
	<b>Total</b>	<b>151</b>	<b>101</b>

**Figure 1.1: Level of implementation of activities under Development Dimensions**



Out of the One hundred and fifty-one (151) activities planned for the year, about 67% representing one hundred and one (101) were being implemented (Figure 1.2).

**Figure 1.2: Status of Implementation of Annual Action Plan**



**1.3.1 Proportion of Overall Medium-term Plan implemented**

The year marked the third year of implementation of the medium-term plan of the Sector. Although all activities planned for the year were expected to be implemented, this was not achieved due to several factors. The planned one hundred and fifty-one (151) constitute 58% of the entire planned activities in the medium-term plan (2018-2021). Most of the activities cut across the entire medium term (2018-2021). Others are also rolled over because they are not completed in a scheduled period. However, aggregates of implemented activities between 2018 to 2020 stands at 176 out of a total of 256 planned activities for the medium term. This reflects some 69% of overall level of implementation for the SMTDP. The table below provides a summary of proportions of the SMTDP implemented over the reporting period.

**Table 1.2: Proportion of the SMTDP implemented in 2020**

Indicators	Baseline	Actual	Actual	Target	Actual
	2017	2018	2019	2020	2020
<b>1. Proportions of the annual action plans implemented</b>	96%	82%	91%	100%	67%
<b>a. Percentage completed</b>	96%	82%	91%	85%	23%
<b>b. Percentage of ongoing interventions</b>	-	2%	-	-	44%
<b>c. Percentage of interventions abandoned</b>	-	4%	-	-	-
<b>d. Percentage of interventions yet to start</b>	4%	12%	9%	-	33%
<b>e. Percentage of activities implemented outside the plan</b>	-	-	-	-	-
<b>2. Proportion of the overall medium-term development plan implemented</b>	88%	29.4%	35%	75.0%	69%

#### **1.4 Difficulties or challenges encountered**

This section of the report provides a summary of the major difficulties/challenges encountered by the Ministry and its Sector Agencies during the year.

##### ***Shocks Experienced from Covid-19 Pandemic***

The sector was not spared of the negative shocks of COVID-19 pandemic as most of its targets for the year were missed due to difficulties in implementation. The pandemic affected most field workers at the agency level and this reflected in the weak implementation of their plans and revenue generation.

##### ***Land Encroachment***

The issue remains a major challenge for the Council for Scientific and Industrial Research (CSIR) and the Ghana Atomic Energy Commission (GAEC). The two (2) Agencies are gradually losing the land required for future infrastructural expansion (i.e. laboratories, experimental fields, office accommodation etc.) to the perennial problem of encroachment. Some reasons provided for this phenomenon is the incomplete acquisition process as Government did not pay compensations to the rightful owners of the land in some instances thereby making it difficult to acquire land titles for the land. Whilst the GAEC has re-initiated the process of land title acquisition, more than four cases are in court with respect to land litigations.

##### ***Staffing – Recruitment of staff***

With the Ministry and most of its Agencies (CSIR, GAEC, EPA, LUSPA) operating below their staffing capacities, and most of the technical staff aging and retiring, the Ministry has become challenged in terms of delivering on its mandate. Despite the financial clearance granted to recruit some new staff by Sector Agencies, the number remains woefully inadequate. The NRA and NBA, the newest Agencies, are currently operating with staff seconded from GAEC. The NBA had done some recruitments within the year but does not still have the full complement of its staffing needs.

##### ***Irregular and Inadequate Flow of Funds***

This issue represents a major challenge for the Sector and this has resulted in delayed or non-implementation of planned activities. Apart from the Development Partners budget, all other sources of funds, especially for CAPEX have been irregular and inadequate.

##### ***Budgetary Allocations for Inadequate Research Funding***

The issue is a major challenge affecting the Ministry. The sustainable implementation of R&D programmes of most research institutes have been seriously hampered by the lack of funding from central government. The perennial underfunding of programmes has largely impaired the ability of research institutes to respond to challenges faced by their stakeholders and clients.

##### ***Inadequate Research Infrastructure***

In terms of the infrastructural support to carry out their mandates, most CSIR and GAEC institutes do not have the full complement of R&D infrastructure such as laboratory facilities to carry out their respective research activities. This situation has further been worsened by the growing sophistication of Science & Technology (S&T) equipment, which has impaired the capacity of most institutes to respond effectively to the changing dynamics.

***Late Submission of Inputs***

During the preparation of the report, the Ministry encountered a challenge. This had to do with the late submission of inputs from the various Directorates /Agencies/ Authority and the difficulty in understanding of the template provided by the NDPC.

## **2.0 Introduction**

The information in this section of the report is presented based on the activities of the Ministry Headquarters and its Agencies. These activities were undertaken in accordance with the vision, mandate, objectives and strategies identified in the National Environment Policy, National Climate Change Policy, the National Science, Technology and Innovation (STI) Policy, Medium-Term National Development Policy Framework (MTNDPF), as well as the various Acts and Legislations governing the activities of the entire sector.

To track progress made on the ministry's Policies, Programmes and Projects, the Ministry monitors and evaluate activities of the sector through various progress reports. The progress on projects and programmes are provided in this section.

## **2.1 Programme and Project Register**

### ***2.1.1 Project Register***

During the year, the Ministry and its Sector Agencies had a total of sixty (60) projects at various stages of implementation – completed and on-going, all under the Environment, Infrastructure and Human Settlements Dimension. Out of all the projects, 49 projects representing 81% were completed. Majority of the projects were between 50% to 60% complete. Table 2.1 below provides the details of the register.

**Table 2.1: Project Register**

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>BEE KEEPING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Tumu, Kong, Bugubelle, Wellembelle, Tasor/Kulfuo	Action for Sustainable Development (ASUDEV)	65,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December, 2020	65,000.00	-	100% Delivery	Completed
<b>BEE KEEPING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Mognegu #1 & Mognegu#2	Bimoba Literacy Farmers Association	55,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	55,000.00	-	100% Delivery	Completed
<b>BEE KEEPING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Seripe, Kakiasi and Kolikolini	Northern Centre for Sustainable Development Management	55,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	55,000.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>BEE KEEPING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Dua, Aliba, Kunkua, Yidongo and Adoboyas	LINK Ghana	55,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	55,000.00	-	100% Delivery	Completed
<b>BEE KEEPING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Zukpiiri, Nanvilli, Takpo, Goli and Jang	Pro-Net North	55,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	55,000.00	--	100% Delivery	Completed
<b>BEE KEEPING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Sonyor, Kiape, Chache, Ntereso, Seripe, Ggonfu/ Choribawale	AROCH A Ghana	55,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	55,000.00	-	100% Delivery	Completed
<b>BEE KEEPING-Under Alternative</b>	Environment, Infrastructure and	Tamaligu, Sungtapia & Nadigu-Tampion	Coalition for Development of	55,000.00	The Adaptation	September	October 2019	December 2020	55,000.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Livelihood sub-project</b>	Human Settlements		Western Corridor of Northern Region (NORTH CODE)		Fund Board	16, 2019						
<b>BEE KEEPING- Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Tilli Azupunpu ga, Lamboya, Kpalwege, Jentiga 1, Jentiga 2	Savanna h Young Farmers Network (SAFEN et - Ghana)	110,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	110,000.00	-	100% Delivery	Completed
<b>BEE KEEPING- Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Ko-Bukom, Nabugaug n, Naapaal, Dabagteng , Ketuo, Guri, Bechinten g, Zogpielle	Centre for Biodiversity and Rural Initiatives (CIBRI)	75,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	75,000.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>BEE KEEPING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Zaazi, Libga, Nyoglo, and Bihinaayili	Basic Needs Ghana	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Lamboya, Tilli-Azupunpu ngu	Belim Wusa Development Agency (BEWDA)	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Kuka-Natinga and Kpalwega	Presbyterian Community Based Rehabilitation programme.	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	March 2020	38,500.00	38,500.00	50% Delivery	On-going

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Bechiteng, Dagbateng, Gengenkpere & Sonne	Coalition for Change	154,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	154,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Kong, Tumu, Tarso-Kulfor and Bugubelle	Friends of Rural Growth (FORG)	154,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	154,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative</b>	Environment, Infrastructure and Human Settlements	Sabari No. 1, & Sabari No. 2	Grameen Ghana	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Livelihood sub-project</b>												
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Bongo Dua & Adaboya	Meta Foundation	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Tampizua #1 and Tampizua #2	Northfin Foundation	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Kakease & Seripe	Open Ghana	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Alternative Livelihood sub-project</b>	Settlements											
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Ko Bukong, Nabugaugun, Guri& Zogpielle	Partnerships for Rural Development Action. (PRUDA)	115,500.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	115,500.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Kolikolini and Sabare No. 2	Simliaid	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENING</b>	Environment, Infrastructure and Human	Mogneigu No1 and Mogneigu No 2	Songtaba	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>G-Under Alternative Livelihood sub-project</b>	Settlements											
<b>DRY SEASON VEGETABLES GARDENIN G-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Zieng & Tampion	Urbanet	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES GARDENIN G-Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Kanjarga-Nyandema and Gbedembi lisi	Wilphin Foundation	77,000.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,000.00	-	100% Delivery	Completed
<b>DRY SEASON VEGETABLES</b>	Environment, Infrastructure and	Gentinga #1, Gentinga # 2	Zuuri Organic Vegetable	77,000.00	The Adaptation	September	October 2019	December 2020	77,000.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>GARDENING-Under Alternative Livelihood sub-project</b>	Human Settlements		Farmers Association		Fund Board	16, 2019						
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Mognegu No.1 & Mognegu No. 2	Development Frontiers	186,166.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	186,166.00	-	100% Delivery	Completed
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Kiape & Sonyor	Maata-N-tudu Association	29,760.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	29,760.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Fund Project)</b>												
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Cheche & Seripe	Pure Trust Social Investors Foundation	109,350.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	109,350.00	-	100% Delivery	Completed
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Kaseya & Kunkua	LINK Ghana	54,280.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	54,280.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Zieng & Tampion	Transforming Rural Women and Youth Life Foundation	60,073.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	60,073.00	-	100% Delivery	Completed
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Tilli-Azupunpu & Farik,	World Vision Ghana	68,548.17	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	68,548.17	-	100% Delivery	Completed
<b>AGRO PROCESSING SCHEME-</b>	Environment, Infrastructure and	Nyandem-Kanjarga & Weisi	Binaaba Women's Farmers	12,696.00	The Adaptation	September	October 2019	December 2020	12,696.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Human Settlements		Association		Fund Board	16, 2019						
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Timonde & Tampizua	Trade Aid Integrated	21,260.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	21,260.00	-	100% Delivery	Completed
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Ko-Bukom & Nabugaugun	Lahorima Islamic Youth Association	90,700.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	90,700.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>(Adaptation Fund Project)</b>												
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Tumu & Tarso/Kulfuo	Sungmah Organisation	128,417.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	128,417.00	-	100% Delivery	Completed
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Gengenke & Naapaal	FM Shea	77,215.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	77,215.00	-	100% Delivery	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>AGRO PROCESSING SCHEME- Under Alternative Livelihood sub-project (Adaptation Fund Project)</b>	Environment, Infrastructure and Human Settlements	Tumu & Bugubelle	Auxano Forever	162,736.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	162,736.00	-	6 100% Delivery	Completed
<b>FISH FARMING- Under Alternative Livelihood sub-project</b>	Environment, Infrastructure and Human Settlements	Adaboya, Kasiesa, Tamalugu, Tampion, Lamboya, Tapko DamGoli KoGbafio, Bugubelle	COMMUNITY LIFE IMPROVEMENT PROGRAMME (CLIP)	217,800.00	The Adaptation Fund Board	September 16, 2019	October 2019	December 2020	217,800.00	-	100 % Delivery	Completed
<b>Rehabilitation of Dams and Dug Outs in 10 Communities in the</b>	Environment, Infrastructure and Human	KAKAISE GOLI & KO-GBAFIO,	MEMPHIS METROPOLITAN LTD	2,214,217.26	The Adaptation Fund Board	6th February 2019	12th February 2019	September, 2020	2,214,217.26	0.00	100%	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Adaptation Fund Districts in the Three (3) Northern Regions of Ghana (LOTS 2&amp;5 KAKEASE, GOLI+KO GBAFIO &amp;ADABOY A)</b>	Settlements											
<b>Rehabilitation of Dams and Dug Outs in 10 Communities in the Adaptation Fund Districts in the Three (3) Northern Regions of Ghana (LOT</b>	Environment, Infrastructure and Human Settlements	TAMALUGU	OMEGA CONSTRUCTION LTD	1,142,626.60	The Adaptation Fund Board	6th February 2019	12th February 2019	September, 2020	1,142,626.60	0.00	100%	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>3-LAMBOYA)</b>												
<b>Rehabilitation of Dams and Dug Outs in 10 Communities in the Adaptation Fund Districts in the Three (3) Northern Regions of Ghana (LOT-1 TAMALUGU)</b>	Environment, Infrastructure and Human Settlements	TAMALUGU	GROUP 6 LIMITED	1,539,101.77	The Adaptation Fund Board	6th February 2019	12th February 2019	September, 2020	1,539,101.77	0.00	100%	Completed
<b>Rehabilitation of Dams and Dug Outs in 10 Communities in the Adaptation Fund</b>	Environment, Infrastructure and Human Settlements	KASIESA & TAMPIO N	BUNAS CO. LTD	1,776,555.08	The Adaptation Fund Board	6th February 2019	12th February 2019	September, 2020	1,776,555.08	-	100%	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Districts in the Three (3) Northern Regions of Ghana (LOT 4-KASIESA AND TAMPION)</b>												
<b>Rehabilitation of Dams and Dug Outs in 10 Communities in the Adaptation Fund Districts in the Three (3) Northern Regions of Ghana (LOT 7-TAKPO)</b>	Environment, Infrastructure and Human Settlements	TAKPO	ASTEEL COMPANY LIMITED	750,801.11	The Adaptation Fund Board	6th February 2019	12th February 2019	September, 2020	750,801.11	0.00	100%	Completed
<b>Rehabilitation of Dams and Dug Outs in 10</b>	Environment, Infrastructure and	BUGUBELE	EPSILON COMPANY	708,603.93	The Adaptation	6th February 2019	12th February 2019	September, 2020	708,603.93	-	100%	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Communities in the Adaptation Fund Districts in the Three (3) Northern Regions of Ghana (LOT 6-BUGUBELE)</b>	Human Settlements		NY LTD.		Fund Board							
<b>Modernization for Agriculture in Ghana (MAG)</b>	Environment, Infrastructure and Human Settlement	Accra	-	20,199,727.50	Government of Canada	01 Mar 2017	01 Mar 2017	31 Mar 2022	4,331,985.08	15,867,742.42	100%	An operational activity directly implemented by CSIR. No contractor or consultant engaged.
<b>Equipment for GMO Detection Laboratory</b>	Environment, Infrastructure and	NBA	Pabevoa Ventures	89,727.42	CAPE X	Sept. 2018	Jan. 2019	June 2019	89,727.42	-	100%	Completed and Satisfied

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
	Human Settlement											
<b>Completion of laboratories for Radiological and Medical Science Research Institute</b>	Environment, Infrastructure and Human Settlement	GAEC Accra	Atta Boateys Building and Construction Ltd	4,511,184.42	Central GoG & CF	4th Dec. 2017	4th Dec. 2017	Oct 2018	4,511,184.42	-	100%	Completed
<b>Greater Accra Regional Spatial Development Framework</b>	Environment, Infrastructure and Human Settlement	Accra	GIBB Engineering and Architecture, South Africa	3,476,287.29	World Bank Loan	Aug. 2016	Sept. 2016	June, 2017	3,476,287.29	-	100%	Completed
<b>Ashanti Regional Spatial Development Framework</b>	Environment, Infrastructure and Human Settlement	Kumasi	Spatial Solutions, Ghana	1,800,232.65	World Bank Loan	June, 2016	July, 2016	May, 2017	1,800,232.65	-	100%	Completed
<b>Renovation of Regional</b>	Environment,	Tamale	AESL	610,579.95	IGF	2019	2019	2020	152,644.99	457,934.96	35% Delivery	On-going

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Director's Bungalow and Construction of Fence Wall at Tamale</b>	Infrastructure and Human Settlement											
<b>Renovation of Bungalow No. 17 at Obuasi</b>	Environment, Infrastructure and Human Settlement	Obuasi	AESL	367,750.90	IGF	2019	2019	2020	367,750.90	0	100%	Completed
<b>Renovation of Bungalow No. 24 at Obuasi</b>	Environment, Infrastructure and Human Settlement	Obuasi	AESL	476,021.70	IGF	2019	2019	2020	476,021.70	0	100%	Completed
<b>Renovation of Regional Office Block at Tamale</b>	Environment, Infrastructure and Human Settlement	Tamale	AESL	783,648.84	IGF	2019	2019	2020	195,912.21	587,736.63	35% Delivery	On-going

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
<b>Renovation of Area Office Block at Obuasi</b>	Environment, Infrastructure and Human Settlement	Obuasi	AESL	699,759.50	IGF	2019	2019	2020	699,759.50	0	100%	Completed
<b>Renovation of Regional Office Block at Bolgatanga</b>	Environment, Infrastructure and Human Settlement	Bolgatanga	AESL	324,744.90	IGF	2019	2019	2020	81,186.24	243,558.66	35%	On-going
<b>Construction of CIPSEG Centre Fence Wall and Conference Hall/Office Block at Tamale</b>	Environment, Infrastructure and Human Settlement	Tamale	AESL	1,235,074.02	IGF	2019	2019	2020	1,235,074.02	-	100%	Completed
<b>Procurement of Vehicle</b>	Environment, Infrastructure and	Accra	-	6,392,518.57	IGF	2019	2019	2020	6,392,518.57	-	100% (delivered)	Completed

Project Description	Development Dimension Policy Framework	Location	Contractor/ Consultant	Contract Sum GHC	Source of Funding	Date of Award	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status	Remarks
	Human Settlement											
<b>Procurement of computers</b>	Environment, Infrastructure and Human Settlement	Accra	AESL	1,497,447.25	IGF	2019	2019	2020	1,497,447.25	-	100% (delivered)	Completed
<b>Installation of Containerized Office Buildings for the NRA</b>	Environment, Infrastructure and Human Settlement	Kwabinya (Accra)	Group 6 Ltd	1,289,137.79	GoG Capex, IGF	November 2019	December 2019	March 2020	200,000.00	1,089,137.79		On-going
<b>Ghana Petroleum Hub Spatial Plans</b>	Environment, Infrastructure and Human Settlements	Half Assini and Accra	-	3,912,668.00	Ministry of Energy	07/01/2020	07/01/2020	05/01/2021	2,212,668.00	1,700,000.00	60% delivery	Work is still ongoing and expected to be completed a

### 2.1.2 Programme Register

During the year, five (5) broad programmes were undertaken by the Ministry and its Agencies. Out of the 5 programmes, 4 representing 80% were under the Environment, Infrastructure and Human Settlements while 1 programme representing 20% was made up of the Governance, Corruption and Public Accountability.

All 5 programmes were at various levels of implementations to achieve the objectives outlined for the sector under the Agenda for Jobs Policy Framework, 2018-2021.

**Table 2.2: Programme Register**

Programme Description	Development Dimension of Policy Framework	Amount Involved Sum GHC	Source of Funding	Date Started	Expected Date of Completion	Expenditure to Date	Outstanding Balance	Implementation Status (%)	Total Beneficiaries	Remarks
<b>Management and Administration</b>	Governance, Corruption and Public Accountability	75,321,794	GOG, DP	Jan. 2020	Dec 2020	38,560,000	36,761,794	51%	Nationwide	On-going
<b>Research &amp; Development</b>	Environment, Infrastructure and Human Settlements	255,344,624	GoG, DP, IGF	Jan 2020	Dec.2020	190,990,000	64,354,624	75%	UG, Nationwide	On-going
<b>Environmental Protection &amp; Management</b>	Environment, Infrastructure and Human Settlements	123,216,385	IGF, GoG	Jan 2020	Dec.2020	54,310,000	68,906,385	44%	Nationwide	On-going
<b>Spatial Planning &amp; Human Settlement</b>	Environment, Infrastructure and Human Settlements	20,189,592	GOG	Jan. 2020	Dec 2020	19,540,000	649,592	97%	Regions, District	Completed
<b>Biotechnology Development</b>	Environment, Infrastructure and Human Settlements	1,351,485	GOG, IGF	Jan 2020	Dec.2020	370,000	981,485	27%	Nationwide	Completed

## 2.2 Update on Disbursements from Funding Sources

This section provides update on the funding sources and disbursement of the funding during the year.

### 2.2.1 Revenue Analysis

The Budget for the Sector was funded by the Government of Ghana (GoG), Development Partners (DP) and Internally Generated Funds (IGF). Total approved budget for the sector for 2020 was four hundred and seventy-five million, four hundred and twenty-three thousand eight hundred and eighty Ghana Cedis (**GHC 475,423,880**).

Within the reporting period, an additional Thirty Million Ghana Cedis was released to the Ministry in respect of Goods and Services for MESTI Head Quarters. This adjusted total budgetary allocation to Five Hundred and Five Million, Four Hundred and Twenty-three Thousand, Eight Hundred and Eighty Ghana Cedis (**GHC505,423,880**)

Data on total releases as of reporting time stood at three hundred and twenty-three million, one hundred twenty-six thousand, five hundred and two Ghana Cedis (**GHC323,126,502**) from all sources. This represents some 68% of initial appropriation and 64% of adjusted budget.

Central Government Transfer constituted the largest share (65.7%) of resource flow followed by IGF (23.6%). Donor Support represented the lowest share (10.7%) of resource releases. Total releases for the period thus far represent 67% of appropriated budget.

**Table 2.3: Revenue Analysis**

Revenue Sources	Baseline 2017	Actual 2018	Actual 2019	Target 2020	Actual 2020
<b>Central Government Transfers</b>	194,965,976.00	220,184,968.00	280,999,847.00	280,999,847.00	212,380,000.00
<b>IGF</b>	56,688,121.00	80,630,147.00	158,142,313.00	158,142,313.00	76,105,101.99
<b>DP Support</b>	97,498,045.00	61,163,259.00	36,281,720.00	36,281,720.00	34,641,399.94
<b>Others</b>	0.00	0.00	0.00		
<b>TOTAL</b>	<b>349,152,142.00</b>	<b>361,978,374.00</b>	<b>475,423,880.00</b>	<b>505,423,880.00</b>	<b>323,126,502.00</b>

### 2.2.2 Disbursement

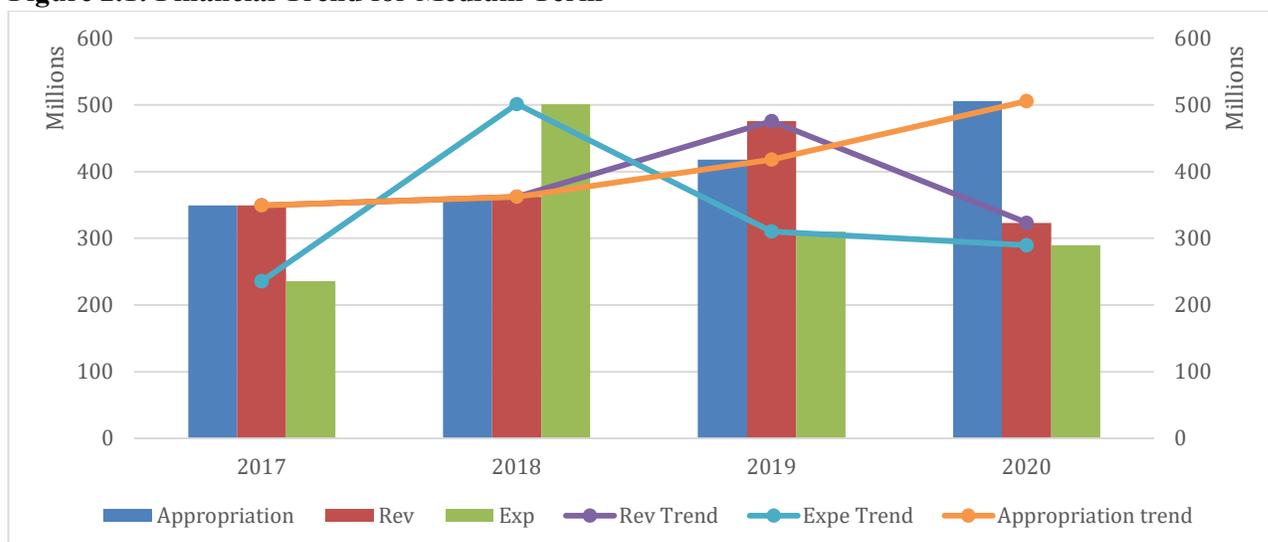
The Total Expenditure as of the reporting period was Two Hundred and Eighty-nine Million, Five Hundred and Twenty-six Thousand, Four Hundred and Seventy-four Ghana Cedis, Seventy-six Pesewas (**GHC 289,526,474.76**) which consisted of Compensation, Goods and Services and CAPEX.

Compensation for employees represented 66% of the total expenditure for the period, Goods and Services represented 26% CAPEX represented 7% of total expenditure for the period.

**Table 2.4: Expenditure Analysis**

Expenditure Item	Baseline 2017	Actual 2018	Actual 2019	Target 2020	Actual 2020
<b>Compensation</b>	148,137,988.33	422,565,120.00	168,678,520.00	266,997,796	192,301,480.42
<b>Goods &amp; Service</b>	3,253,391.00	42,705,386.00	4,421,795.00	134,855,934	75,512,701.91
<b>CAPEX</b>	0.00	35,737,012.00	1,018,934.00	73,570,150	21,712,292.43
<b>Others</b>				-	-
<b>TOTAL</b>	<b>235,528,708.36</b>	<b>501,007,518.00</b>	<b>309,900,022.00</b>	<b>505,423,880</b>	<b>289,526,474.76</b>

**Figure 2.1: Financial Trend for Medium Term**



From figure 2.1 above, there has been steady increase in appropriation from 2017 to 2020. Whilst there has been marginal increase in revenues for the period, expenditure as a share of total revenues were lesser for the periods 2019 and 2020. This is as a result of the time lag between releases and expenditure as the latter goes through some processes of commitments (i.e procurements, contracting, approvals, delivery etc) before records are reflected in the accounting books.

### 2.3 Update on Indicators and Targets

Due to slow down of activities by COVID-19 Pandemic during the reporting period, there were setbacks in the realisation of some indicators.

During the period, 124 industries were monitored for Level of pollutants of effluent discharge into coastal waters and lagoons which fell short of the targeted 170 industries.

There has been significant improvement in the number of companies compliant with Environmental Assessment (EA) as 11,773 companies complied even though 8,000 were targeted for 2020.

Although there was an improvement in the Global Green Economy Index (GGEI) ranking for Ghana, the rank of 78<sup>th</sup> is an improvement over 2019 79<sup>th</sup> rank but below the targeted rank of 76<sup>th</sup> for 2020.

Percentage of sectors with climate change mitigation and adaptation strategies was 54% against the 55% targeted for 2020.

Number of technologies targeted for commercialisation was targeted at 60. This target was however missed by 28 as only 32 technologies were commercialised for the period.

Number of research findings adopted by industries stood at 104, resulting in a shortfall of the 154 targeted for the year 2020.

The table below provides more information on the progress of indicators for the sector and across programme areas.

**Table 2.5: Performance of Sector Indicators**

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
<b>KEY INDICATORS</b>						
1.	Level of pollutants of effluent discharge into coastal waters and lagoons	63 Industries monitored for levels of pollutants effluent quality were above EPA recommended guideline levels 50mg/l, 75NTU and 1500 µS/Cm respectively	81 Industries monitored for levels of pollutants effluent quality were above EPA recommended guideline levels 50mg/l, 75NTU and 1500 µS/Cm respectively for most industries	165 Industries monitored for levels of pollutants effluent quality were above EPA recommended guideline levels 50mg/l, 75NTU and 1500 µS/Cm respectively for most industries	170industries	124Industries
2.	PM <sub>10</sub> and PM <sub>2.5</sub> (Particulate Matter) pollution level PM <sub>10</sub>					
	1. North Industrial Area Annual Mean	93µg/m <sup>3</sup>	93µg/m <sup>3</sup>	119 µg/m <sup>3</sup>	119 µg/m <sup>3</sup>	81.8 µg/m <sup>3</sup>
	2. First Light Annual Mean	157µg/m <sup>3</sup>	50µg/m <sup>3</sup>	178 µg/m <sup>3</sup>	178 µg/m <sup>3</sup>	165.1 µg/m <sup>3</sup>
	3. Shangri La Annual Mean	162µg/m <sup>3</sup>	120µg/m <sup>3</sup>	158 µg/m <sup>3</sup>	158 µg/m <sup>3</sup>	150.8 µg/m <sup>3</sup>
	4. Achimota Annual Mean	161µg/m <sup>3</sup>	111µg/m <sup>3</sup>	131 µg/m <sup>3</sup>	131 µg/m <sup>3</sup>	108.3 µg/m <sup>3</sup>
	5. La Palm Annual Mean	166µg/m <sup>3</sup>	141µg/m <sup>3</sup>	139 µg/m <sup>3</sup>	139 µg/m <sup>3</sup>	
	6. Graphic Road Annual Mean	187µg/m <sup>3</sup>	154µg/m <sup>3</sup>	154µg/m <sup>3</sup>	154µg/m <sup>3</sup>	174.3 µg/m <sup>3</sup>
	7. Kasoa Annual Mean	204µg/m <sup>3</sup>	200µg/m <sup>3</sup>	155 µg/m <sup>3</sup>	155 µg/m <sup>3</sup>	110.7 µg/m <sup>3</sup>
	8. Amasaman Annual Mean	163 µg m <sup>3</sup>	150µg/m <sup>3</sup>	117 µg/m <sup>3</sup>	117 µg/m <sup>3</sup>	97 µg/m <sup>3</sup>
3.	Number of companies compliant with Environmental Assessment (EA)	4,638	10,030	10,854	8,000	11,773

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
4.	Percentage of sectors with climate change mitigation and adaptation strategies	35%	50%	54%	55%	54%
5.	Greenhouse gas emissions	50.5 MT	54.5MT	42.2 MT	-	-
6.	Global Green Economy Index (GGEI) for Ghana	43.28(58 <sup>th</sup> out of 80 countries)	46 (Ghana ranked 78 <sup>th</sup> out of 130 countries)	46(79 <sup>th</sup> )	70 <sup>th</sup>	46(78 <sup>th</sup> )
7.	Research and development (R&D) expenditure as a percentage of GDP	0.05	0.08	0.08	-	-
8.	Number of research findings adopted by industry	32	70	85	154	104
9.	Number of technology start-up companies established	5	8	5	-	-
10.	Number of technologies commercialised	25	30	35	60	32
11.	Percentage implementation of National Spatial Development Framework	NA	NA	NA	-	-
12.	Percentage of MMDAs with District Spatial Development Frameworks and Structural Plans:					
	• Regional Spatial Development Frameworks (% of Regions with RSDFs)	30%	18.75%	18.75%	18.75%	18.75%
	• Spatial Development Frameworks	2.36%	2.36%	3.08	3.08	3.08
	• Structural Plans	3.08%	3.85%	3.85%	3.85%	3.85%
	• Local Plans	NA	NA	NA	NA	NA

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
	<ul style="list-style-type: none"> <li>Percentage of MMDAs with Physical Planners</li> </ul>	51.96%	51.96%	50.77%	50.77%	50.77%
<b>SECTOR INDICATORS</b>						
<b>MANAGEMENT AND ADMINISTRATION</b>						
1.	Land area (Size of land in Hectares) where Sustainable Land and Water Management Practices have been adopted as a result of the SLWMP	7,338.6	10,998.7	15,257.85	15,000	15,861.85
2.	Land users (No. of farmers) adopting Sustainable Land and Water Management Practices as a result of the SLWMP.	18,421	26,696	37,432	30,000	42,230
3.	Direct project beneficiaries (No. of farmers) of SLWMP	34,213	48,498	57,595	60,000	63,544
	% of which are women	55%	55.5%	54.6%	40%	56.24
4.	Oil and Gas environment policy developed	-	Zero +5 Policy Document developed	Zero +7 Policy Document developed -Draft Implementation Plan developed -Draft communication strategy developed	Finalise draft and implement the EMPOGI	The draft policy has been finalized.  Cabinet memo prepared. Yet to be submitted to Cabinet
5.	Develop legislation for Chemical Weapon Convention (CWC)	-	Draft legislation submitted to MESTI/EPA by	Draft legislation reviewed by MESTI/EPA and	-Finalisation of the legislation	Office of the Attorney General

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
			AG's Dep't for review	further drafting instructions given to AG's Dep't	-Sensitization on the legislation -develop an Implementation Plan	currently reviewing the draft Legislations
6.	National Biodiversity policy developed	-	Final draft National Biodiversity Policy developed	Implementation Plan for National Biodiversity Policy developed	Review of the NBP and IP in line with Post-2020 Biodiversity Framework	Draft Policy Developed. Post 2020 Biodiversity Framework finalized for adoption by state parties to the convention
7.	Nationally Determined Contributions (NDC) Implementation & Investment Plan	-	Implementation Plan completed	Consultant recruited to lead the development of Investment Plan	Revision of Emission Baseline Targets for NDC Implementation & Investment plan -	Revision process is 50% completed Key stakeholder consultations are ongoing
8.	Building STI infrastructure Capacity (No. of machine) <ul style="list-style-type: none"> <li>No. of Foundries established</li> <li>National HPC Centre Established</li> </ul>	N/A - -	- - Renovation completed	- - HPC equipment received and installation yet to be completed	1  HPC Centre launched and Operational	Sod Cutting done for the construction of Foundry by HE the President  Negotiation with ECG and MTN for power and internet installations
9.	Establish an Effective National Innovative System (GIRC-Centre established)	N/A	Renovation works completed	2 reports prepared on STI ecosystem and making a	Operationalize the GIRC Centre	Meeting on branding of the GIRC Centre organized

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
	• No. of Strategic Technology Centres Established	N/A	-	Business Case for the GIRC-Centre -	1	
10.	Mainstreaming STI Into National Development Agenda (No. of STI Investment/ Development Plans/Proposals developed)  STI Roadmap for the SDGs developed	3  -	0  National STI Policy approved by Cabinet	0  Ghana selected by UN to initiate the STI Roadmap for the SDGs	1  STI Roadmap for the SDGs prepared	Three Technical Committee meetings organized.  Validation Workshop on Situational Analysis organized
11.	Promoting STI Culture (No. of STI celebrations organized) in Ghana	-	1	1	1	1
12.	Financing the STI Implementation Programme	-	STI Policy approved by Cabinet	National Research Fund Bill prepared	National Research fund established and Operational	National Research Fund Bill submitted to Cabinet
13.	Hand Over Centre constructed for E-waste project (by)	N/A	-	Pre-design studies on-going	HOC Constructed and Operational	Procurement process completed. Contract yet to be signed
<b>RESEARCH &amp; DEVELOPMENT PROGRAMME</b>						
14.	Biotechnology: -Germplasm collected, characterised, conserved and distributed nationwide (No. of Plant Accessions collected and conserved)	4,382	5,267	616	1500	587

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
	No. of Plant Accessions distributed nation wide	7,112	7,500	427	600	314
15.	Development and transfer of improved crop varieties (No. of improved crop varieties of crops developed and disseminated)	-	6 (3 sweet potato and 3 cowpea)	12	14	15 Foundation seeds produced from 8 Cassava and 7 Rice varieties. 5 Breeder seeds from 5 Maize varieties and disseminated
16.	Postharvest losses (Percentage reduction in postharvest losses in cereals and legumes) of cereals and legumes reduced	-	2%	-	6-8%	6 Postharvest Technologies: Passion fruit juice Passion fruit jams Chicken chips Mushroom noodles Mushroom chips Pre-cooked frozen yam balls
17.	Improved breeds of livestock/poultry/fisheries (No. of improved breeds of livestock/poultry/fishes) developed	4	0	-	6	830 live birds raised to produce new generation of day-old chicks.

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
						14,220 brood sock of Nile Tilapia produced and 571,939 fingerlings produced for fish farmers.
18.	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	1	8	9
19.	Control and elimination of water, air and soil borne diseases (in % Number. of technologies for Sustainable management, conservation and utilization of forest resources)	-	4-6%	-	8-10%	-
20.	Development of essential materials and industrial products using local raw materials (No. of artisans/stakeholders trained on products developed from local raw materials)	-	90	25	110	-
21.	Promotion of renewable Energy systems (No. of Solar or Renewable energy systems promoted and installed) for both domestic and commercial buildings.	-	5	2	9	3

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
	No. of people trained in the promotion of renewable energy systems	-	1,723	50	100	33
22.	Establishment of ICT Centre for the provision of electronics and computer engineering services (No. of training sessions organized)	-	2	-	8	4
	No. of Software Solutions developed and/or -Deployed	-	1	4	8	2 software developed for CSIR-Modernizing Agriculture in Ghana (MAG) and CSIR-Head office
23.	Number of baseline surveys and adoption studies of released crop varieties conducted.	-	0	2	5	4 baselines surveys conducted in Bono, Greater Accra, Volta and Ashanti regions
24.	Production and sale of improved planting materials (No. and type of improved planting materials produced)	-	135 000 Oil Palm germinated seeds 125 000 Oil Palm seedlings	33,000 Oil Palm Germinated Seeds 104,450 Oil Palm Seedlings 4,647	165,000 140,000	3,194,771 Oil Palm Germinated Seeds produced. 44,462 Oil Palm Seedlings sold to farmers. 11,487 Coconut Seedlings sold out to farmers.

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
25.	Safety assessment of telecommunication base stations/cell sites (Conditional Compliance assessment) conducted (No. of Base Stations Assessed)	700	356	302	500	809
26.	Telecommunication masts/base stations Monitored	782	412	762	1200	1046
27.	Occupational exposures for mine, industrial, medical, educational and educational research institution workers monitored.	507	250	450	1000	1997
28.	Consumable water by Gross alpha-beta and Gamma activity contamination measurement assessed (No. of samples analyzed)	-	448	435	700	11
29.	Siting and feasibility studies (level in %) towards introduction of nuclear energy in Ghana conducted.	10%	25% Feasibility studies	100% Completed the selection of candidate sites (100%)	30 % Field work performed to identify preferred site	10% activities leading to preferred site selection achieved
30.	Stakeholder and public sensitisation meetings (No. of meeting) on adoption of nuclear power organised	5	10	4	20	Further Civil Society Organisations planned but not executed.  Eight (8) newsletters released

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
						One (1) appearance on STARR FM morning show
31.	Field established for release of four varieties of cherry tomatoes	-	3	-	5	None
32.	Production plant for protein bait to control fruit fly menace completed (Level of completion in %).	70%	75%	75%	100%	75% (not achieved)
33.	Outreach programmes to establish Astronomy Clubs in educational institutions organised (No. of established clubs).	10	12	6	8	1
34.	Scientific assessment (No. of research reports) of the environment and human health impact of E-waste conducted.	3	5	4	10	2
35.	Welding and NDT professionals trained.	20	30	15	20	2 Staff trained as welding instructors.
36.	Research conducted to improve radiotherapy and cancer treatment.	5	5	14	10	5
<b>ENVIRONMENTAL PROTECTION AND MANAGEMENT PROGRAMME</b>						
37.	Improved compliance with sector specific EA guidelines and standards (% of sector covered)		100%	100%	100%	
	oil and gas exploration,	60%	65%	67%	75%	100%
	agriculture	60%				68%

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
38.	National Oil Spill Contingency Plan operationalised (No. of simulation exercises undertaken)	1	1	1	1	1
39.	Approval given (EA and EMP permits) to companies for them to comply with Environmental Assessment (EA) regulations (No. of permits issued)	4,638	9,277	5,100	6,173	8,398
40.	Level of pollution of effluent quality (No. of industries) from industries sampled and analysed	63	63	52	150	124
41.	Annual compliance monitoring undertaken (No. of Annual compliance monitoring events) <ul style="list-style-type: none"> <li>• Accra.</li> <li>• Other Regions</li> </ul>	4 13	4 13	5 10	5 12	5 14
42.	Environmental indicators - air quality monitored (No. of monitoring locations (Accra))	13 sites	13 sites	14 sites	18 sites	23 sites (13 regulatory and 10 non-regulatory)
43.	Register on pesticides and industrial and consumer chemicals for proper handling and labelling developed.	1	1	1	1	1
44.	Pesticides/industrial chemicals post registration and licensing/compliance monitoring and surveillance carried out (copy of a completed register)	1	1	1	1	18
45.	Industries monitored to ensure the use of bio-oxo degradable additives	26	32	33	31	Nil

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
	in the manufacture of flexible Plastics					
46.	System that effectively and rapidly responds and deal with chemical related emergencies nationwide developed (% completion of the system)	10%	30%	45%	60%	Ongoing with MOH in the lead
47.	Climate change issues incorporated into sector medium term plans (No. of sectors with climate mitigation and adaption strategies)	7	8	8	10	9
48.	E-waste recyclers trained on sustainable management of e-waste	2	3	6	4	5
49.	Stakeholders trained on pesticide regulation and safe/judicious use of pesticides (No. of training exercises)	5	3	3	6	9
50.	Users of radiation complying with provisions of the regulations and guidance documents (No. of users of radiation applying the regulations and guidance documents)	250	250	261	300	115.
51.	General public and users of radiation sources educated (No. of education events held)	-	390	261	320	115
52.	Up-to-date National register of radiation sources and of persons authorized to carry out any activity	100	119	56	100	110

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
	or practice related to a source of radiation					
53.	Regulations (No. of regulations drafted) for the control of ionizing and non-ionizing radiation	6	2	2	6	3
54.	Guidance documents (No. of documents) for the control of ionizing and non-ionizing radiation; and radiation devices available.	-	4	13	10	2
55.	Compliance by users of radiation sources and devices to Regulatory Requirements (No. of facilities inspected and authorized)	-	227	135	250	107
56.	Non-compliance issues Resolved (No. of enforcement notices issued)	6	5	5	10	11
<b>SPATIAL PLANNING AND HUMAN SETTLEMENTS PROGRAMME</b>						
57.	National zoning regulations and planning standards published and Distributed (Revised editions from 2019 onwards) (No. of published guidelines)	100	-	0 (Review of planning standards to be rolled over to 2020)	300	0
58.	Reviewed Manuals for spatial plan completed (Revised editions from 2019 onwards) (No. of spatial planning manuals distributed)	100	-	0 (Review of spatial planning manuals to be rolled over to 2020)	300	0
59.	Staff recruited for LUSPA	-	-	130	50	0

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
60.	Functional Regional Spatial Planning Committees established.	8	8	10	6	
61.	Head office complex of LUSPA completed (Level of completion in %)	-	-	-	-	0
62.	Recruited key/ relevant staff recruited for LUSPA	-	-	132	50	0
63.	Training on permitting guidelines, planning standards and Regulations on Act 925	-	-	250	16	16
64.	LUPMIS (GIS) training organized for all MMDAs (stakeholders)	60	52	260	260	0
65.	Regional Spatial Development Frameworks (No. of RSDF's prepared)	2	-	-	1 (Central Region)	0
66.	District Spatial Development Frameworks (No. of District Spatial)	-	2	-	20	0
67.	Structure Plans for major settlements prepared of MMDAs (No. of Structure Plans prepared for MMDAs)	-	2	-	20	1 commenced but not completed
68.	Monitoring and Evaluation visits on RSPAs and MMDAs (No. of M & E visits to RSPAs No. of newly created RSDFs)	-	30	6	16	0
		-	30	-	100	0
<b>BIOTECHNOLOGY DEVELOPMENT PROGRAMME</b>						
69.	Approval and embossing of the NBA scheme of service by Public Service Commission (PSC)	-	-	1	-	Scheme of Service approved

No	Indicators	Baseline	Actual	Actual	Target	Actual
		2017	2018	2019	2020	2020
70.	Biosafety public education materials	-	4	2	4	3 Biosafety Education materials completed.
71.	Biotechnology and biosafety staff trained on biosafety guidelines	2	3	4	3	3 Biosafety guidelines training conducted.

## 2.4 Update on Critical Development

As part of efforts to improve policy and legislation, as well as achieve the objectives in the Environment, Science, Technology and Innovation sector, the following interventions were undertaken.

In support of **SDG Goal 12**; to ensure sustainable consumption and production patterns *and target 12.4*; to achieve the environmentally sound management of chemicals and all wastes throughout their life cycle by 2020, the Ministry commenced the pilot incentive payment system for e-waste collection at Old Fadama (Agbogbloshie) to reduce the indiscriminate disposal and open burning associated with the management of e-waste. Since the commencement of the incentive payment system at Agbogbloshie on 30th June 2020, over 30 tonnes of e-waste cables (which would otherwise have been burnt by the scrap dealers and further polluted the environment) have been purchased so far.

In addition, the Ghana Integrated E-waste Programme, through an extensive stakeholder consultation has successfully deployed sixty-five (65) high priority product Harmonized System (HS) Codes via the new Integrated Customs Management Systems (ICUMS). The advance eco-levy collection on ICUMS is now fully linked to the E-waste Fund under the control of a Fund Administrator.



E-waste (cables) being purchased at Agbogbloshie. Launch of Incentive Payment System at Agbogbloshie

Cabinet approved the National Plastics Management Policy and its accompanying Implementation Plan in May 2020. The Policy, together with the Ghana National Plastics Action Partnership (NPAP) Initiative, provided the platform for the reduction of plastic waste and pollution in Ghana. The Ministry also worked assiduously to operationalize the Plastic Waste Recycling Fund (PWRF) to provide finance for the management of plastics and reduce the adverse impact of plastic waste on human health and the environment. A cabinet approval was granted to this effect in October 2020 and the implementation of the approval will be done in 2021.

His Excellency, the President, in August 2020, laid the foundation stone for the construction of the first ever Machine Tooling Centre and Foundry in Ghana at the Ghana Atomic Energy Commission premises. The facility and associated workshops will be equipped with tools and machinery to provide agro-processing machines and equipment, farming implements, and spare parts for maintenance and repairs. The facilities at the centre will provide technical support for policy initiatives of the government such as One District One Factory (1D1F),

which is already in place in many districts across the country and is providing jobs. **SDG Goal 9 target 5**



**Laying of foundation stone by H.E. the President Hon. Kwabena Frimpong-Boateng at the launch**  
The Ghana-Switzerland Cooperation Agreement on Article 6 of the Paris Climate Change agreement was signed on 1st November 2020 which led to the development of a registry to promote carbon trading.

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

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



*Shea Butter processing facility at Ntereso*



*Multi-purpose Processing equipment installed*



*Kitchen for roasting shea nuts*



*Women beneficiaries processing groundnuts at Kunkua*



*Finished Products*



**Pictures on agro-processing facilities and some finished products**

In support of **SDG Goal 2 target 4** to promote sustainable agriculture and strengthen capacity for adaptation to climate change, the Ministry under the Sustainable Land and Water Management Project (SLWMP) supported over 40,000 farmers in the 12 project districts of the 5 Regions in the North to implement sustainable practices on a total of 16,317 ha of land. Ten (10) dugouts were also constructed in the project area to serve as watering points for wildlife and cattle.



**Sentie dugout**



**Jejeni dugout**



**Earth bunding on a maize farm**



**Composting pits**

**Sustainable Agricultural practices**

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

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



Laboratory facilities at CSIR

## **2.5 Evaluation and Participatory M&E**

Although Participatory M&E is critical for ensuring the effectiveness of programmes and assessing achievements of the policies of the sector, the Ministry and its Agencies were unable to undertake PM&E due to the COVID-19 Pandemic and some financial challenges.

The only form of monitoring has been a desk review of progress reports for the Sector Agencies.

### **3.1 Key issues addressed**

Some actions have been taken to address most of the challenges within the control of the Ministry and other collaborations sought to address issues requiring shared responsibilities and mandates of other MDAs.

The major issue for 2020 was the disruptions caused by COVID-19 and its associated risks on productivity and human health. Based on this, the Ministry instituted flexible working hours and developed weekly rotational roster for staff to run on shift. This was in addition to arrangements made for staff to work from home. Virtual meetings were also held to minimise the risks associated with COVID-19.

Due to shortfalls in expected revenues from all sources, the Ministry and Its Agencies reviewed their workplans and revised downward its targeted revenues, especially on Internally Generated Funds (IGF) to accommodate shortfalls.

Activities requiring filed presence was reviewed and social media and mass media to reach out to the public and also provide a platform for engagements with the public.

Based on the comments and recommendations at the 2019 Budget Technical Hearing, the Ministry and its Agencies conducted an analysis of staffing requirements and budgeted for replaceable staff due for retirement in 2020. By this, financial clearance was to be sought for replaceable staff who are due for retirement ahead of their retirement dates so as to make room for the engagement of new staff.

In 2020, the NBA got financial clearance and recruited some 28 key staff to support the operations of the Authority. The EPA was also able to engage some key staff in the latter part of 2020 to support its operations.

There are still shortfalls in the staffing requirements of the Agencies. To this end, some budgetary provisions has been made for more recruitments in 2021 to support the operations of these Agencies.

In order to deal with the constant delays in the submission of inputs for the preparation of Sector Progress and Performance Reports by Agencies, the Ministry wrote to all Heads of Agencies with clear timelines for submission of inputs. However, there is still some level of delays in the submission of reports.

### **3.2 Recommendations**

Key recommendation for the consideration in resolving the issues encountered during the year is continuously engage the Ministry of Finance for Financial clearance to reduce the backlog in staffing for the Agencies.

It is also recommended that, the COVID-19 Safety Protocols are strictly adhered in order to protect the critical but limited staff for the Sector.

In order to produce Sector Progress and Performance Reports on time, a formal reminder should be sent to all Heads of Agencies prior to the submission month so that they can formally instruct action officers to work and submit inputs for collation. This recommendation as practiced by the MoF, NDPC and the OHCS could help minimise delays in submissions.

### **3.3 Outlook for 2021**

Appropriation has not been finalised for 2021 due to the election year (2020) and transition arrangements. However, the Sector allocation for the first quarter is GH¢115,514,559.00 for the implementation of its programmes, projects and activities. Based on patterns of allocations over the medium-term period with an allocation of GH¢505,423,880 for 2020, the Ministry expects an increment in its budgetary allocations subject to positive fiscal outlook for the 2021 fiscal year.

The Environment, Science Technology and Innovation sector will continue to play its role in placing STI at the centre of National Development. Key interventions and activities to be undertaken in 2021 include but not limited to the following.

The construction of a Handover Centre (HOC) is expected to be completed in 2021 under the Financial Cooperation Project with the German Government at the premises of the Ghana Atomic Energy Commission (GAEC). The HOC will serve as the centre for the collection and receiving of e-waste fractions from the informal collectors or individuals, or scrap dealers at a price which lies slightly above the market value for the e-waste type. The Project will also subsidize the collection and cover the additional cost associated with sound recycling.

In addition, the National Integrated E-waste Programme will deploy and collect the advance eco-levy on the remaining Three Hundred (300) HS Codes into the E-waste Fund, and to commence the full operationalization of the Integrated National E-waste Management Scheme. The full operationalization of the scheme will lead to the formalization of the informal sector, and the creation of decent and sustainable jobs along the e-waste value chain.

Again, in 2021, the Ministry in addition to implementing the Cabinet approval on the PWRF will work on the setup of the Resource Recovery Secretariat (RRS) which is the nerve centre of Ghana's National Plastics Management Policy. The Resource Recovery Secretariat (RRS) will be responsible and dedicated to the achievement of the Policy's aim and fulfilment of the other seventeen (17) Strategic Actions. These actions, when deployed together, will create pro-business opportunities for job creation and shared growth while eliminating plastic pollution.

The Ministry expects to complete construction works on the facility and operationalize the Machine Tooling Centre in 2021. The establishment of this Centre is a key component of a much broader strategic framework designed to ensure that Ghana's socio-economic development is driven by Science, Technology, and Innovation. This will put Ghana in a position to develop and grow talents of skilled and innovative Ghanaians who graduate from our schools, colleges, and universities.

Finally, the Ministry will seek to fully operationalize both the Ghana Innovation and Research Commercialization (GIRC) Centre and the High-Performance Computing (HPC) Centre to promote research and