Establishing a circular economy framework for the plastics sector in Ghana

Part I: Project Information

GEF ID
10401

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Establishing a circular economy framework for the plastics sector in Ghana

Countries
Ghana

Agency(ies)
UNIDO

Other Executing Partner(s)
Ministry of Environment, Science, Technology and Innovation/EPA

Executing Partner Type
Government

GEF Focal Area
Multi Focal Area

Taxonomy
Focal Areas, International Waters, Pollution, Plastics, Climate Change, Climate Change Mitigation, Chemicals and Waste, Best Available Technology / Best Environmental Practices, Waste Management, Hazardous Waste

Management, Open Burning, Persistent Organic Pollutants, Uninentional Persistent Organic Pollutants, Demonstrate innovative approache, Influencing models, Transform policy and regulatory environments, Deploy innovative financial instruments, Strengthen institutional capacity and decision-making, Convene multi-stakeholder alliances, Communications, Stakeholders, Awareness Raising, Behavior change, Strategic Communications, Public Campaigns, Education, Private Sector, Individuals/Entrepreneurs, Large corporations, Financial intermediaries and market facilitators, SMEs, Type of Engagement, Partnership, Information Dissemination, Consultation, Participation, Beneficiaries, Civil Society, Non-Governmental Organization, Community Based Organization, Academia, Trade Unions and Workers Unions, Gender Equality, Gender results areas, Capacity Development, Knowledge Generation and Exchange, Gender Mainstreaming, Gender-sensitive indicators, Women groups, Sex-disaggregated indicators, Capacity, Knowledge and Research, Knowledge Generation, Workshop, Training, Learning, Adaptive management, Theory of change, Indicators to measure change, Innovation, Knowledge Exchange, Field Visit, South-South

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 0

Submission Date

6/14/2021

Expected Implementation Start

11/15/2021

Expected Completion Date

11/15/2026

Duration

60In Months

Agency Fee($)

665,000.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CW-1-1		GET	3,500,000.00	40,961,834.00
IW-1-1		GET	3,500,000.00	40,961,834.00
		Total Project Cost($)	**7,000,000.00**	**81,923,668.00**

B. Project description summary

Project Objective

To strengthen the national capacity of Ghana to transition to a circular economy framework that addresses plastic leak-age into the country?s oceans and waterways, facilitates sustainable plastics management through operationalising the National Plastic Action Partnership (NPAP-GPAP) and the National Plastic Management Policy (NPMP; and ultimately ends marine plastic pollution and reduces the unintentional emissions of POPs (u-POPs).

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
1.Establishing an enabling framework for a circular economy in plastics management	Technical Assistance	1.1 Legal and institutional framework realigned to support a circular economy in the plastics sector under Ghana?s National plastics management policy and the NPAP	1.1.1. Situational analysis: Plastic flows assessed for community-level archetypes 1.1.2 Legal, and institutional capacities for a circular economy in the plastics sector assessed. 1.1.3 National implementation/actionable plans, and technical guidelines on bottom-up approach to circular economy in plastics and marine litter management developed in close cooperation with NPAP and within the context of the National plastics management policy (NPMP) 1.1.4 Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures and quality standards 1.1.5 The Resource Recovery Secretariat established	GET	700,000.00	8,097,332.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
2. Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management	Technical Assistance	2.1. Capacity built among all relevant stakeholders to ensure integration and mainstreaming of circular economy approaches within plastics management	2.1.1 Stakeholders from the public sector including targeted, municipalities, industrial private sector associations, and public trained on respective policies, regulations and technical guidelines within the NPMP, including the gender dimension 2.1.2. Capacities of private sector strengthened at all stages of the value chain on new responsive regulations, procurement procedures or quality standards in view of implementing circular economy practices in the industrial sector	GET	500,000.00	10,166,666.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
2. Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management	Investment	2.2. Pilot projects implemented to deliver circular economy benefits	2.2.1 Sustainable financing, business models and Public-Private Partnerships (PPP) developed and applied in the pilots 2.2.2: Pilot projects for reducing plastics from fossil feedstock implemented 2.2.3: Pilot projects for reducing plastic leakage into nature implemented 2.2.4: Pilot projects for demonstrating effective after-use plastic economy implemented	GET	4,350,000.00	55,196,168.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
3. Coordination, communication strategy and knowledge management among key partners and stakeholders for achieving Ghana?s NPAP/GPAP and NPMPs objectives	Technical Assistance	3.1. Coordinated action and synergies with key international, regional and national partners and stakeholders ensured to achieve Ghana?s NPAP/GPAP and NPMPs objectives 3.2 Communication strategy in place to raise awareness about NPAP/GPAP, NPMP and relevant plastic topics 3.3. Knowledge management exchange set up to share and receive project information and knowledge locally, nationally and globally	3.1.1 Enhance continuity of NPAP-GPAP Secretariat in Ghana to improve transparency, accountability and coordination of the various legislative instruments, capacity building efforts and pilot demonstration activities for a circular plastics economy framework 3.1.2: Enhance capacity of RRS for coordination of circular economy and plastics partnerships, cooperation frameworks and agreements within the NPMP implementation objectives. 3.2.1 Communication strategy along the CE perspective developed and implemented to raise awareness on the negative impacts of the plastic pollution on natural environmental systems (including marine litter, POPs, GHG emissions and human health) towards consumers behaviour change 3.3.1 Effective knowledge management done through the RRS, NPAP-GPAP, UNDP platform sharing experience, raising	GET	800,000.00	3,148,502.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing ($)	Confirmed Co-Financing($)
4. Monitoring, evaluation, and replication	Technical Assistance	4.1 Effective and efficient implementation of the project based on GEF and UNIDO requirements	4.1.1 The project and its activities are monitored and evaluated on a periodic basis in line with GEF, UNIDO and Government requirements 4.1.2. Project monitoring plan designed and executed 4.1.3. Mid-term review and terminal project evaluations conducted	GET	320,000.00	1,390,000.00
				Sub Total ($)	**6,670,000.00**	**77,998,668.00**

Project Management Cost (PMC)		
GET	330,000.00	3,925,000.00
Sub Total($)	**330,000.00**	**3,925,000.00**
Total Project Cost($)	**7,000,000.00**	**81,923,668.00**

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	MESTI	Grant	Investment mobilized	40,000,000.00
Recipient Country Government	MESTI	In-kind	Recurrent expenditures	500,000.00
GEF Agency	UNIDO	Grant	Investment mobilized	145,000.00
GEF Agency	UNIDO	In-kind	Recurrent expenditures	500,000.00
Civil Society Organization	Maintenance and Sustainability Africa	In-kind	Recurrent expenditures	70,000.00
Private Sector	Pure Home Water	In-kind	Recurrent expenditures	60,000.00
Private Sector	DAVERO ICE Ltd	In-kind	Recurrent expenditures	400,000.00
Private Sector	M.Larsen Waste Ghana Limited (Komenda Polymer Recycling Plant Limited)	In-kind	Recurrent expenditures	12,274,268.00
Private Sector	COLIBA Waste Management Service Limited	In-kind	Investment mobilized	100,000.00
Civil Society Organization	ASASE Foundation	In-kind	Investment mobilized	7,318,900.00
Private Sector	McKingtorch Africa	In-kind	Recurrent expenditures	10,000.00
Private Sector	Zoomlion Ghana Limited	In-kind	Recurrent expenditures	2,520,000.00

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Private Sector	Universal Plastic Products Recycling Limited	In-kind	Recurrent expenditures	3,690,000.00
Private Sector	NelPlast Eco Ghana Ltd	In-kind	Recurrent expenditures	155,500.00
Donor Agency	Deutsche Gesellschaft f?r Internationale Zusammenarbeit (GIZ)	In-kind	Recurrent expenditures	500,000.00
Recipient Country Government	Environmental Protection Agency	Grant	Investment mobilized	500,000.00
Recipient Country Government	Environmental Protection Agency	In-kind	Recurrent expenditures	5,000,000.00
Private Sector	SAP	In-kind	Recurrent expenditures	80,000.00
Donor Agency	Norwegian Agency for Development Cooperation (NORAD) and the Secretariat of the Basel, Rotterdam and Stockholm Conventions	In-kind	Recurrent expenditures	500,000.00
Other	Global Plastic Action Partnership	In-kind	Recurrent expenditures	600,000.00
Private Sector	rePATRN Ltd.	In-kind	Recurrent expenditures	2,000,000.00
Private Sector	rePATRN Ltd.	Grant	Investment mobilized	5,000,000.00
			Total Co-Financing($)	**81,923,668.00**

Describe how any "Investment Mobilized" was identified

Investment mobilized was identified mainly from the commitment of the private sector. UNIDO, with support from MESTI and NPAP, engaged with companies from across the plastic value chain from the onset of the project preparation and for consultation about demonstration of circular economy technologies.

The private sector was then requested to provide an accounting of assets and investment possibilities that are directly relevant to the activities/interventions associated with the project. Co-financing was a condition for pre-selection of pilots and pilot companies were informed that they would be required to provide co-financing if they were successful in their expression of interest in the project. Due to the COVID-19 pandemic and the resulting impacts of the pandemic on the operation of businesses in Ghana, co-financing could not be obtained for all pilot project companies. During the project inception phase, efforts will be undertaken to obtain any outstanding co-financing. Should a pilot entity be unable to provide co-financing, the same criteria used to select the pilot projects will be used to select an alternative pilot project to ensure global environmental benefits are in line with reported amounts at the CEO Endorsement stage. The co-financing and distribution of GEFTF funds to pilot projects was reviewed by MESTI. Investments mobilized from the MESTI come primarily from the funding associated with the implementation of the NPMP and from the proceeds of the Plastic Waste Recycling Fund (PWRF). The PWRF has an existing balance that will be used as co-financing in the short term. As additional funds are collected through the PWRF, those funds will also be allocated to the project and activities associated with the implementation of the NPMP. In addition, aspects of the Resource Recovery Secretariat, including long-term staffing requirements, will be funded through MESTI?s regular budget. Co-financing provided by NORAD/BRS, GPAP and the GIZ are as a result of ongoing activities in Ghana related to plastic waste management. For example, the GIZ is undertaking activities to develop and provide guidance to the Government of Ghana on the development of an EPR scheme within the country. Given the close link between the project and these activities, including the support for the development of an EPR, the GIZ is providing co-financing as outlined in the supporting letter. Likewise, the ongoing BRS-Norad-1 project, Marine litter and microplastics: promoting the environmentally sound management of plastic waste and achieving the prevention and minimization of the generation of plastic waste has a number of ongoing activities that complement the project and synergies between the BRS-Norad-1 project have been discussed. Given the level of interest the project has generated, additional co-financing will be identified and updated at the mid-term review and terminal evaluation.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
UNIDO	GET	Ghana	Chemicals and Waste	POPs	3,500,000	332,500
UNIDO	GET	Ghana	International Waters	International Waters	3,500,000	332,500
				Total Grant Resources($)	**7,000,000.00**	**665,000.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required **false**

PPG Amount ($)

200,000

PPG Agency Fee ($)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
UNIDO	GET	Ghana	Chemicals and Waste	POPs	100,000	9,500
UNIDO	GET	Ghana	International Waters	International Waters	100,000	9,500
				Total Project Costs($)	**200,000.00**	**19,000.00**

Core Indicators

Indicator 5 Area of marine habitat under improved practices to benefit biodiversity (excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 5.1 Number of fisheries that meet national or international third party certification that incorporates biodiversity considerations

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Type/name of the third-party certification

Indicator 5.2 Number of Large Marine Ecosystems (LMEs) with reduced pollutions and hypoxia

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (achieved at MTR)	Number (achieved at TE)
0	0	0	0

LME at PIF	LME at CEO Endorsement	LME at MTR	LME at TE

Indicator 5.3 Amount of Marine Litter Avoided

Metric Tons (expected at PIF)	Metric Tons (expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
7,300.00	13,051.00		

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)	0	378410	0	0
Expected metric tons of CO?e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)		378,410		
Expected metric tons of CO?e (indirect)				
Anticipated start year of accounting		2022		
Duration of accounting		4		

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)				
Expected metric tons of CO?e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 9 Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.3 Hydrochloroflurocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
1	1		

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
2	2		

Indicator 9.6 Quantity of POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 10 Reduction, avoidance of emissions of POP to air from point and non-point sources (grams of toxic equivalent gTEQ)

Grams of toxic equivalent gTEQ (Expected at PIF)	Grams of toxic equivalent gTEQ (Expected at CEO Endorsement)	Grams of toxic equivalent gTEQ (Achieved at MTR)	Grams of toxic equivalent gTEQ (Achieved at TE)
0.30	8.92		

Indicator 10.1 Number of countries with legislation and policy implemented to control emissions of POPs to air (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
1	1		

Indicator 10.2 Number of emission control technologies/practices implemented (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	300	615		
Male	700	527		
Total	1000	1142	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Please refer to section 1a.f) Global environmental benefits for more information on the figures.

Part II. Project Justification

1a. Project Description

A. Describe any changes in alignment with the project design with the original PIF

The project structure presented in this document is consistent with that presented in the PIF. The project framework is based on four components:

1. Establishing an enabling framework for a circular economy in plastics management;

2. Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management;

3. Coordination, communication strategy and knowledge management among key partners and stakeholders for achieving Ghana ?s NPAP/GPAP and NPMPs objectives; and

4. Monitoring, evaluation, and replication.

During PPG phase of work, the project framework and execution arrangements were discussed with the Ministry of Environment, Science, Technology and Innovation (MESTI). Stakeholders, including pilot project companies, were engaged and a number of project proponents already operating in Ghana were engaged to provide feedback on the project design and project activities to ensure cohesion. These consultations resulted in several changes to the project design. These changes are outlined on a component-by-component basis below.

An overview of the changes from the PIF structure versus the CEO endorsement is given in the table below:

PIF Version	CEO Endorsement Version	Comments/Justification

Output 1.1.5 A Secretariat/ national commission for plastic pollution established	Output 1.1.5 The Resource Recovery Secretariat established	Based on consultations during the PPG phase the National Plastic Management Policy and the associated Resource Recovery Secretariat Initial Structure and Staffing document, the output was modified to explicitly name the RRS as the entity responsible for plastic management and a transition to a circular economy framework for the plastics sector in the country. The RRS will be a government entity set-up under the management of the Ministry of Environment, Science, Technology and Innovation (MESTI).
Output 2.2.2 Pilot projects, including technology transfer using best available techniques and best environmental practices (BAT/BEP) to demonstrate circular economy approaches along the plastics value chain and to achieve GEBs	Output 2.2.2: Pilot projects for reducing plastics from fossil feedstock implemented Output 2.2.3: Pilot projects for reducing plastic leakage into nature implemented Output 2.2.4: Pilot projects for demonstrating effective after-use plastic economy implemented	Changes were made to the Outputs under Component 2 to better reflect the priorities of the Government of Ghana for plastics management governance, tracking progress in specific parts of the circular economy (Figure 1) and a recognition of the importance of policy interventions across the plastics value chain
N/A	Output 3.1.2: Enhance capacity of RRS for coordination of circular economy and plastics partnerships, cooperation frameworks and agreements within the NPMP implementa-tion objectives.	The output was added in order to capture the specific role of the government led Resource Recovery Secretariat in coordinating plastics and circular economy activities within the country.
Output 3.3.1 Effective knowledge management done through the NPAP/GPAP/UNDP platform sharing experience, raising awareness, promoting replication and best practices on the national level	Output 3.3.1 Effective knowledge management done through the RRS, NPAP-GPAP, UNDP platform sharing experience, raising awareness, promoting replication and best practices on the national level	The output was updated to include the Resource Recovery Secretariat (RRS) given the role of the RRS in knowledge management and dissemination.

Co-financing of US $77,000,000 was identified at the PIF.	Co-financing of US $81,923,668 has been confirmed at the CEO.	The amount of co-financing identified at the CEO increased based on the selection of a large number of pilot projects and the ability of these firms to provide higher than anticipated co-financing levels. The EPA also provided a separate co-financing amount beyond what MESTI was originally identified as providing. Given the level of interest the project has generated, additional co-financing will be identified and updated during at the mid-term review and terminal evaluation.

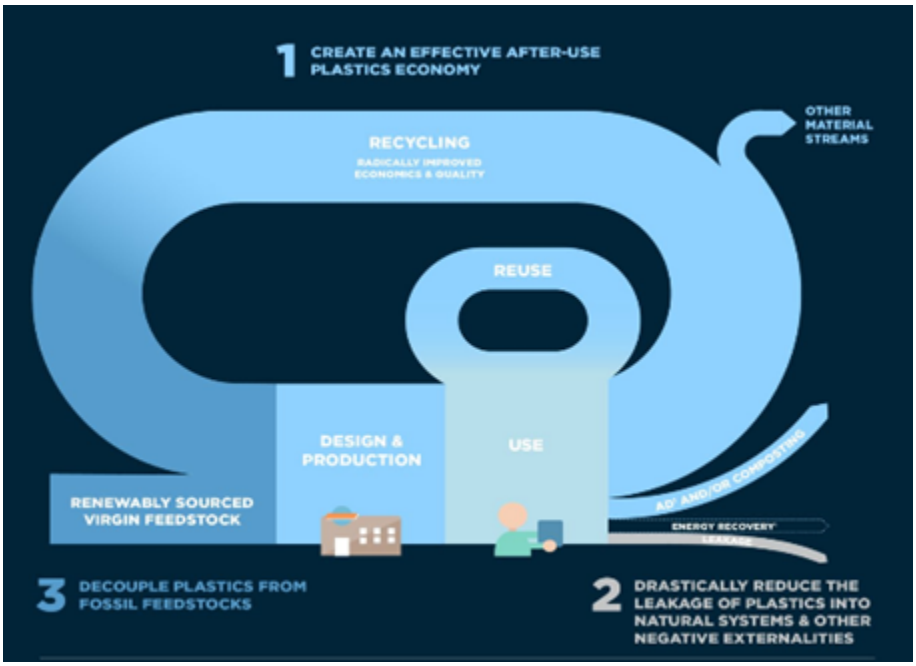


Figure 1: Three pillars of the new plastics economy

1a. *Project Description*. Elaborate on:

a) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description);

b) the baseline scenario and any associated baseline projects;

c) the proposed alternative scenario with a brief description of expected outcomes and components of the project;

d) alignment with GEF focal area and/or Impact Program strategies;

e) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

f) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and

g) innovativeness, sustainability and potential for scaling up. ?

1a.a) Global environmental and/or adaptation problems,

1. Global production of plastics increased by more than twenty-fold between 1964 and 2015, with an annual output of 322 million metric tons (MMT), is expected to double by 2035, and almost quadruple by 2050. Plastics are used in numerous industrial sectors, including packaging, electronics, automotive, agriculture, health care, and consumer goods. Due to the linear economy model of ?take, make, use, and dispose?, especially prevalent in the plastics sector, by 2050 virgin plastic production will consume twenty percent (20%) of global oil production - a sharp contrast to the current six percent (6%).

2. High rates of plastic consumption and a patchwork of national, regional and international policy on plastic waste management coupled with poor waste management practices has led to significant volumes of plastic entering the natural environment, including oceans. Waste management systems that do exist are often unable to deal with the volumes of plastic generated, which has led to a prolific trade of plastic wastes internationally placing an additional burden on countries with underdeveloped waste management sectors.

3. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) seeks to put measures in place to control the transboundary movement of waste including plastic waste. Parties to the convention are required to take measures to ensure that the generation of hazardous wastes and other wastes, including plastics is reduced to a minimum and to ensure the availability of adequate disposal facilities for the environmentally sound management of these wastes. The Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention) aims to protect human health and the environment from Persistent Organic Pollutants (POPs), including those found in plastics. As of 2018, the Convention controls 28 POPs, including those which have been used as additives, flame retardants or plasticizers in plastics. Plastics can adsorb POPs such as PCB, DDT and dioxins and these are frequently detected in marine plastic litter.

4. Improper disposal and handling of plastics on land causes significant marine littering. According to a recent UNEP report[1][1], 80% of marine litter is plastic and has been found throughout the world?s oceans, from the surface to the sea floor, and from urbanized coastlines to remote unpopulated islands. Eight million metric tons of plastics enter the oceans annually and one quarter of seafood is contaminated with plastics. It is estimated that the ocean already contains over 150 MMT of plastics and 4.6-12.7 MMT are added every year including more than 5 trillion micro and microplastic particles.[2][2] Marine litter is also a transboundary issue covered under the Basel Convention.

5. The life span of plastics is a major factor for both environmental and health concerns. Plastics can stay in the environment for up to 500 years and break down into microplastics in marine and terrestrial

environments,[3][3] causing damages to biodiversity and the ecosystem services needed to support life. Furthermore, microplastics can end up in the food chain, with potentially damaging effects on humans, because of the bioaccumulation of POPs and other toxic chemicals (Barra et al., 2018). POPs exposure is linked to cancers, birth defects, impaired immunity and other ailments in humans. The environmental effects of plastics also differ according to the type and quantity of additives that have been used. In high enough concentrations, plastics and plastic additives threaten the proper functioning of plant and animal tissues. Marine plastic litter can also impact human through the consumption of contaminated seafood and through drinking water systems. The adverse effects of plastic when improperly managed, extend to impacts on infrastructure. Plastics tend to block drains and choke gutters, leading to floods when downpours occur, which is a more frequent occurrence, given climate change.

6. In Ghana, much of the concern about plastic waste management is within urban areas due to modernization and lifestyle changes. Urban areas in Ghana produce a variety of plastic wastes because of the adoption of a more hygienic mode of packaging food, beverages, ?iced water ? water sachets? and other products. This has brought plastic packaging to replace the existing cultural packaging methods (leaf wrappers ? Thaumatococcus daniellii locally known as ?Ahaban?, brown paper and metal cup uses) in cities and towns (Yintii et al. 2014). As a result of their unique properties, plastics have become the most favoured packaging materials in commerce with firms making windfall profits and transferring the environmental cost associated with cleaning plastic waste on the general public. The shift to this new form of plastic packaging in Ghana has generated huge quantities of plastic waste and created pressing sanitation problems, as many towns and cities are overwhelmed with its management.

7. Only a small fraction of plastic waste generated in Ghana is being collected, re-used and/ or recycled, whereas the remaining plastics often ends up in uncontrolled landfills (where they are open burnt together with solid waste) and/or dumped in marine environments leading to marine plastic pollution and obstructions of urban infrastructure. This not only leads to the unintentional emissions of POPs (uPOPs) posing severe threats to the environment and human health, but also neglects the potential economic, environmental and social benefits from the circular management of plastics.

Root causes and barriers that need to be addressed

8. During the development of the project document, a detailed barrier analysis was undertaken, which refined specifically what actions the project needs to take to reach the desired outputs. The following table summarizes the barriers and the responses of the project.

Output	**Barrier**	**Project Response**
1.1.1. Situational analysis: Plastic flows assessed for community-level archetypes	Accuracy of the data collection methodologies to estimate the plastic flows of plastic value chain actors are limited.	Activity 1.1.1.1: Design and develop a methodology for collecting data of the pilot plastic value chains
	Annual waste production data is not readily available. Different methods for estimating plastic flows and waste generation are used in country-wide plastic flow studies.	Activity 1.1.1.2: Collect annual plastic inventory data for the completion of the National Inventory of Plastic Waste and the NPAP Baseline Analysis

Output	**Barrier**	**Project Response**
	Indicators for assessing whether policy interventions yield expected results of transitioning to a circular economy for the plastic sector do not exist and are not integrated into policy and legislation.	Activity 1.1.1.3: Develop a common methodology and indicators for a circular economy for plastics
	Reporting of plastic data by actors within the value chain is inconsistent and follows both voluntary and regulatory requirements. Field collection of data for model validation does not occur.	Activity 1.1.1.4: Conduct capacity building of actors within the plastics and circular economy sector including informal sector
	Different government ministries are responsible for collecting and reporting plastic industry and plastic waste information from different parts of the plastic value chain. Data collection and exchange is not coordinated and/or centralized	Activity 1.1.1.5: Develop and strengthen institutional structures for intragovernmental and inter-agency cooperation on the exchange of plastics related data
1.1.2 Legal, and institutional capacities for a circular economy in the plastics sector assessed.	Lack of enabling conditions including policy framework for the country to adopt circular economy for plastics.	Activity 1.1.2.1: Undertake an assessment of the NPMP Implementation Plan and develop an action plan for implementation of recommendations
		Activity 1.1.2.2: Undertake an assessment of upstream circular economy business models
		Activity 1.1.2.3: Undertake an assessment of private sector actors in the plastics value chain to support a transition to circular economy in the plastics value chain
		Activity 1.1.2.4: Conduct an assessment of regulatory measures for alternative materials and eco-design for plastics
1.1.3 National implementation/actionable plans, and technical guidelines on bottom up approach to circular	There is a lack of environmentally sound and economic-profitable plastics infrastructure, especially for plastics sorting and pre-	Activity 1.1.3.1 Develop training materials for technical guidelines for plastic value chain activities and actors

Output	Barrier	Project Response
economy in plastics and marine litter management developed in close cooperation with NPAP within the context of the National plastics management policy (NPMP)	processing, technologies for recycling and/or re-use of plastics in line with product quality and standards required on international markets	Activity 1.1.3.2 Develop training materials for Standard Operating Procedures for plastic value chain activities and actors
	It is common to throw away empty packaging materials or wastes on public places. The debris on streets, parks, waterways are regularly washed away by rainwater and floods into waterways.	Activity 1.1.3.3: Conduct training to strengthen municipal enforcement bodies to control public littering
	Low collection and recycling rates exist due to limited separation at source and plastic is collected together with the rest of municipal waste.	Activity 1.1.3.4: Design and develop a source segregation programme for the household and institutional levels
1.1.4 Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures and quality standards	An adequate legal framework legislation addressing circular economy approaches for the plastic sector, including plastic production, re-use and recycling or plastic waste management does not yet exist	Activity 1.1.4.1: Develop an implementation plan for the National Plastic Action Roadmap and implement remaining outstanding recommendations of the Norad-1 project
	One of the largest plastic related environmental pollution is due to single use plastic packaging like sachet water, PET bottles, plastic bags, etc. These items are generally provided free of charge to the costumers. Because it does not have value in the eyes of the costumers these items are generally thrown away creating a massive environmental pollution.	Activity 1.1.4.2: Develop a single-use plastic phase-out strategy to discourage the production, import, and use of single-use plastics
	Quality and manufacturing standards for secondary raw plastic materials, plastic alternatives, and circular plastics are not available within the country.	Activity 1.1.4.3: Develop and/or adapt quality standards for secondary raw plastic materials including labeling
		Activity 1.1.4.4: Develop and/or adapt quality standards for plastic alternatives including labeling

Output	Barrier	Project Response
		Activity 1.1.4.5: Develop and/or adapt quality standards for circular plastics and eco-design of plastic containing products including labeling
	There is no official drinking water standard which makes hard for water filtration techniques to beat the market and prove their efficiency over bottled and sachet water.	Activity 1.1.4.6: Conduct an assessment of national drinking water standards and laboratory assessment methods to take into account new water distribution business models
	Green government procurement guidelines will be developed under the NPMP. No clear baseline, standard or review developing green government procurement guidelines exists within the country.	Activity 1.1.4.7 Conduct an assessment of green government procurement guidelines
	Weak enforcement of measures against littering is due to lack of legalized measures to efficiently collect fines.	Activity 1.1.4.8: Develop schedule of proposed increases in fines for littering in public places
	Lack of enabling conditions including policy framework for the country to adopt circular economy for plastics.	Activity 1.1.4.9: Develop a pilot PET, HDPE and PP bottle deposit scheme
		Activity 1.1.4.10: Undertake an assessment and design an action plan for the introduction of an EPR scheme under the NPMP
		Activity 1.1.4.11 Develop policy and regulatory proposals to incentivize reuse systems
1.1.5 A Secretariat/ national commission for plastic pollution established	Projects that address plastics and the circular economy are not coordinated through a government body. The environmental and social	Activity 1.1.5.1: Develop and implement a workplan for the operation of the Resource Recovery Secretariat

Output	Barrier	Project Response
	consequences of the linear plastic economy are not regularly measured and reported to decision making bodies. Current government efforts on plastics data collection reflect immediate responses to plastic waste rather than a systematic approach of integrating plastics information into a long-term circular economy transition.	Activity 1.1.5.2: Develop and implement the financial framework for the operation of the Resource Recovery Secretariat
	De-risking investments in plastics and circular economy innovations through R&D initiatives is not conducted through a coordinated government mechanism.	Activity 1.1.5.3: Develop and implement a workplan and financial arrangements for the operation of the Center of Excellence under the RRS
	There is a lack of official reporting requirements and obligations for the mass flow balances of different sectors of the plastic value chain. Due to the lack of relevant data, policy makers are unable deploy relevant instruments and incentives to generate circular economy benefits.	Activity 1.1.5.4: Establish the data collection and analysis system of the NPAP, RRS and Center of Excellence
	A centralized platform for plastics and circular economy communications and awareness raising activities are not developed. Understanding of plastics and circular economy concepts and knowledge is limited within the country.	Activity 1.1.5.5: Develop relevant digital platforms to communicate and share knowledge with stakeholders

Output	**Barrier**	**Project Response**
2.1.1 Stakeholders from the public sector including targeted, municipalities, industrial private sector associations, and public trained on respective policies, regulations and technical guidelines within the NPMP, including the gender dimension	A well-functioning circular economy requires harmonized enforcement system along the different sectors of the economy. For example, different authorities will inspect retail shops to control the ban on using plastic bags, while different authorities are competent for monitoring that the levies on plastic bags are correctly reported and paid. This requires high level coordination among primary enforcement bodies which is currently lacking in Ghana.	Activity 2.1.1.1: Build technical and human resource capacities of the primary enforcers
	Enforcement duties of the relevant authorities overlap. Enforcement standards are not universally enforced and understood. Standards for field inspections are lacking or not followed.	Activity 2.1.1.2: Develop inspection guidelines for primary enforcement bodies
		Activity 2.1.1.3: Conduct training of primary enforcers on inspection methods
	Inspection programs that target specific actors within the plastic value chain are not available,	Activity 2.1.1.4: Undertake inspection programs at different levels of the plastic value chain
	CSOs and private sector stakeholders have little and sometimes misleading information on the legal measures that need to be followed to conduct their operations.	Activity 2.1.1.5: Conduct training workshops for CSOs and private sector stakeholders on the new legal and enforcement measures that guide transition to circular plastic economy
2.1.2. Capacities of private sector strengthened at all stages of the value chain on new responsive regulations, procurement procedures or quality standards in view of implementing circular economy practices in the industrial sector	The enabling environment for the private sector to invest in research and development dedicated to transition to the circular plastic economy is weak.	Activity 2.1.2.1: Support research and development towards circular economy of plastics among private sector stakeholders including the assessment and enhancement of reuse measures.
	Opportunities for novel technologies in replacing plastics, or re-purposing used plastics to enter the domestic market are weak and largely unsupported.	Activity 2.1.2.2: Support marketing activities of to promote circular economy practices within the plastic sector

Output	Barrier	Project Response
	Collectors, including informal sector workers are often exploited and underpaid because they are at the bottom of the value chain. There are also distinct differences in the way female and male collectors are treated.	Activity 2.1.2.3: Conduct training for plastic collectors on best practices
2.2.1 Sustainable financing, business models and Public-Private Partnerships (PPP) developed and applied in the pilots	The economic and environmental benefits of PPP agreements along the plastic collection, reuse and recycling value chains are untapped.	Activity 2.2.1.1: Sign PPP agreements among pilot project partners
	Small and medium scale enterprises generally lack the necessary technical and human resource capacity to identify the best market niche for the company and develop the right marketing strategy. Gender inequality throughout the plastic value chain is prevalent.	Activity 2.2.1.2: Develop business models
	Lessons learned and knowledge from the success and failure of plastics and circular economy projects in the country are not collected in a systematic way. Successful business models slowly penetrate into the general knowledge and unsuccessful business models may be repeated.	Activity 2.2.1.3: Assess the economic and environmental efficiency of the pilot demonstration projects
	Financial mechanisms fail to support circular economy initiatives in an efficient and inclusive manner. With limited capital available and inadequate de-risking measures, innovative circular economy and plastics solutions that help achieve Pillar 1, Pillar 2 and Pillar 3 of the new plastics economy strategy go unfunded.	Activity 2.2.1.4: Develop financial mechanism based on the lessons learned from pilot demonstration projects to assure sustainability of CE system

Output	Barrier	Project Response
	There is a lack of understanding on the reuse/refill projects within the country and therefore a lack of targeted support to this sector and relevant policy is difficult to develop to support this sector.	Activity 2.2.1.5: Conduct an open call for expressions of interest in reuse pilot
Output 2.2.2: Pilot projects for reducing plastics from fossil feedstock;	There are few initiatives and little funding available to try and address single use plastic materials by developing alternatives (re-designing products, establishing new public behavior, etc.).	Activity 2.2.2.1: Demonstrate pilots that discourage single use plastic production
	One of the potential alternatives to single use packaging materials is designing them from non-fossil sources. There are numerous technologies on the international market to produce plastic-like packaging materials, while keeping them biodegradable. The transfer of these technologies to the country is limited.	Activity 2.2.2.2: Demonstrate the production of biodegradable plastics from alternative feedstock
Output 2.2.3: Plastic leakage into the nature is drastically reduced	Plastic collection networks are primarily built on unskilled human labor. Collectors are employed in workplaces that have low occupational health and safety measures and without formal agreements. Value distribution in the collection network is uneven and exploit the collectors.	Activity 2.2.3.1: Strengthen plastic waste collection network
	By intensifying the recovery of easily recyclable plastic waste streams the proportion of hard to recyclable or non-recyclable plastics in the MSW and the environment will increase. This is a challenge as these plastics (POPs-containing plastics) have the worst effect on the environment, living organisms and human health.	Activity 2.2.3.2: Demonstrate projects targeting environmentally sound disposal of non-recyclable plastics through the Center of Excellence

Output	**Barrier**	**Project Response**
	The waterways and beaches in Ghana are loaded with plastic wastes which is a public nuisance. Beach lovers/seasonal beach recreation/social activities generate much plastic waste at the coastline.	Activity 2.2.3.3: Conduct a comprehensive study of plastic waste collection from waterways and develop a sustainable plastic waste waterways collection business model
Output 2.2.4: Effective after-use plastic economy	One of the highest value-added activities within the after-use plastic economy is the production of food-grade plastics. This value-added activity is untapped in the country.	Activity 2.2.4.1: Demonstrate food-grade plastic recycling and reuse options
	The potential for recycling plastics into new products, while still maintaining the value of the plastic material, is a niche area that is underdeveloped.	Activity 2.2.4.2: Demonstrate product-grade plastic recycling and reuse
	There is a lack of investment in Ghana to produce construction materials from plastic wastes.	Activity 2.2.4.3: Demonstrate construction material-grade plastic recycling and reuse
3.1.1 Enhance continuity of NPAP-GPAP Secretariat in Ghana to improve transparency, accountability and coordination of the various legislative instruments, capacity building efforts and pilot demonstration activities for a circular plastics economy framework	The large number of plastic and circular economy initiatives in Ghana risk duplicating activities and present not all stakeholders are fully engaged in the transition to a circular economy.	Activity 3.1.1.1: Design, develop and/or co-host workshops and consultations with key stakeholders in Ghana on plastics and circular economy to ensure coordination
		Activity 3.1.1.2: Conduct enhanced stakeholder mapping to identify additional stakeholders and invite stakeholders to engage with the NPAP community
		Activity 3.1.1.3: Hire technical experts to manage the NPAP Secretariat
Output 3.1.2: Enhance capacity of RRS for coordination of circular economy and plastics partnerships, cooperation	Partnerships for plastic and circular economy initiatives in the country are not fully coordinated.	Activity 3.1.2.1 Establish partnerships through the RRS for effective regional and international awareness raising and knowledge communication

Output	Barrier	Project Response
frameworks and agreements within the NPMP implementation objectives.		Activity 3.1.2.2 Develop curricula and training programme for regional capacity building
		Activity 3.1.2.3 Develop information sharing protocols and frameworks
3.2.1 Communication strategy along the CE perspective developed and implemented to raise awareness on the negative impacts of the plastic pollution on natural environmental systems (including marine litter, POPs, GHG emissions and human health) towards consumers behaviour change	Public and household attitude towards recycled/repurposed articles are generally low. People do not know which articles are produced through recycling of plastics. Lack of awareness of the adverse effects of unsound plastic waste management	Activity 3.2.1.1: Conduct situational analysis and develop a communications strategy
		Activity 3.2.1.2 Design and develop an annual communications plan and conduct awareness raising activities
3.3.1 Effective knowledge management done through the RRS, NPAP-GPAP, UNDP platform sharing experience, raising awareness, promoting replication and best practices on the national level	Lack of transfer of technical know-how to formal and informal plastic sector operation in the country. Transfer of knowledge of sustainable plastic and circular economy business models limited by lack of coordination and awareness.	Activity 3.3.1.1 Develop white papers, case studies, documentaries and other publications
3.3.2 A knowledge exchange platform to promote national and regional partnerships, to learn from other countries? experiences, and innovation, and share state-of-the-art knowledge products related to circular plastics framework strengthened and disseminated among the GPAP countries, and partners in the region, and other key stakeholders	Global knowledge on successful local business models for CE particularly from developing countries are slow at building up.	Activity 3.3.1.2 Design and contribute to external events and workshops to raise awareness regionally and internationally
		Activity 3.3.1.3 Organize exposure visits to showcase the achievements of projects under the Centre of Excellence
		Activity 3.3.2.1 Develop, deploy and maintain online spaces for stakeholder engagement and knowledge sharing

1a.b) The baseline scenario and any associated baseline projects

Baseline scenario

9. There has been a steady increase in the use of plastic products resulting in a proportionate rise in plastic waste in the municipal solid waste streams in large cities in sub-Saharan Africa including Ghana. The main sources of plastic waste in Ghana can be classified as: industrial, commercial and municipal. Industrial plastic wastes are obtained from the plastics processing, manufacturing and packaging industries. Commercial waste is obtained from workshops, craftsmen, shops, supermarkets and wholesalers. In Ghana, considerable amounts of plastic waste can be found within the municipal solid waste stream due to increase in consumption of plastic. The majority of these wastes are sachet water bags.

10. A mass flow analysis was conducted in 2020 for the country using a localized version of the global Plastics-to-Ocean (P2O) model developed by Pew Charitable Trusts and SYSTEMIQ. The specific objective of the analysis was to identify plastic waste leakage into the environment (i.e. pollution), which will in turn inform potential options or combination of interventions to tackle plastic waste and pollution in Ghana. The outputs from the model were used to calculate the relevant GEBs of the project including uPOPs reductions, reduction of greenhouse gas emissions and avoided plastic marine litter using a base year of 2020. Details of the baseline results can be found in Annex H: Ghana NPAP Baseline Analysis. Table 1 presents the final destination of all plastic in Ghana based on the model results.

Table 1: Final destination of Plastics in Ghana

	Tons	**Proportion**
Plastic waste generation	**714,860**	**100%**
Dumpsite	165,961	**23%**
Engineered landfill	165,417	**23%**
Dumping on land	160,118	**22%**
Open burning	106,977	**15%**
Leakage into water	59,073	**8%**
Open loop recycling	44,744	**6%**
Closed loop recycling	12,568	**2%**
Waste-to-energy	-	**0%**

Hard-to-recycle plastics

11. There are no initiatives in the country with the sole aim of collecting hard-to-recycle plastics (e.g. brominated plastics used in electronic devices and chlorine-containing plastics used in packaging labels, floor laminates and piping) and recycling these plastics. Two organizations accept some hard-to-recycle plastics including Pyramid Recycling Enterprise and City Waste Recycling.

Marine littering

12. Macroplastics and microplastics are visible along shorelines, in coastal waters, tributaries, and estuaries in Ghana. Research was undertaken during the PPG phase to document the location of marine litter hotspots and provide a summary of findings from visual observation and transect walks at these hotspot locations. The results of this study can be found in Annex I.

Baseline projects

Component 1: Establishing an enabling framework for a circular economy in plastics management

13. Further details and an analysis of the existing barriers and gaps for the adoption of a circular economy framework in Ghana can be found in Annex J: Barrier Analysis for the Development of a Circular Economy Framework in Ghana.

14. The Ghana NPAP developed a situational analysis of plastic flows in the country in 2020 which was adapted from global research by the Pew Charitable Trusts and SYSTEMIQ and was carried out with the NPAP Ghana Expert Panel, NPAP Ghana Steering Board, Government of Ghana and other stakeholders. Adapted for the national context, the baseline analysis identified the current and predicted flows of municipal solid plastic waste under a business-as-usual scenario from 2020-2030. The analysis created evidence for tracking future metrics and gauging performance against national plastic targets under the NPMP and pinpointed gaps in capacity and infrastructure along the plastic value chain. The Ghana NPAP has also prepared a study (Trade and the Circular Economy: A deep dive into plastics action in Ghana) which provides additional granularity on the volume of plastic imported and exported from Ghana and the limitations on the development of local plastic value chains.

15. The monitoring of plastic waste in marine environments presents a challenge for Ghana and work is ongoing to support the country with improved monitoring capabilities. The International Atomic Energy Agency (IAEA) is undertaking plastic waste-related activities in and the country is being included as part of an IAEA Marine Environmental Studies Laboratories global assessment of marine laboratory capacities to monitor and assess marine plastic pollution.

16. Despite the development of the situational analysis for plastics, Ghana still lacks granular plastic waste generation, production and import/export data and the authority for collecting plastic data rests with multiple ministries. This issue will be partially addressed through the SAP Rural Sourcing Management for Plastics pilot project. The pilot project will track the flow of plastic waste through collection, aggregation, transportation and recycling. The pilot project is being conducted in close cooperation between SAP, Ghana NPAP, MESTI, UNIDO and UNDP. Linking plastic waste collection data with policy creation for a circular economy will need to be addressed. Data sharing arrangements, consolidation of plastic waste models and a standardized framework for collecting plastic waste data in a methodological and cohesive manner are not yet developed and will need to be addressed during the project.

17. The NPMP and associated Implementation Plan were approved by Cabinet on 21 May, 2020. The NPMP is attached as Annex K. The legal framework guiding sanitation environment at both the national and local levels is outlined in the NPMP and contains the following pieces of legislation:

National Development	? The Constitution - Section 41k, 1992 ? National Development Planning Commission Act, 1994 (Act 479) ? National Development Planning Systems Act, 1994 (Act 480)

Air Pollution	? Environmental Protection Agency Act, 1994 (Act 490) ? Management of Ozone Depleting Substances and Products Regulations, 2005 (LI 1812) ? Ghana standards for environment and health protection- requirement for ambient air quality and point source/stack emissions. (GS 1236, 2019)
Coastal & Marine Environment	? Fisheries Act, 2002 (Act 625) ? Maritime Zone (Delimitation) Act,1986 (PNDCL 159) ? Wetlands Management (RAMSAR Sites) Regulations, 1999 (LI 1659) ? Maritime Pollution Act 2016 (Act 932)
Human Development and Settlement	? Centre For Scientific and Industrial Research Act,1996 (Act 521). ? Ghana Ports and Harbours Authority Act,1986 (PNDCL 160) ? Infectious Diseases Act, 1908 (CAP 78) ? Public Health Act, 2012 (Act 851)
Hazardous Substances/Chemical	? Mercury Act, 1989 (PNDCL 217) ? Hazardous and Electronic Waste Control and Management Act, 2016 (ACT 917) ? Hazardous and Electronic Waste Control and Management Regulations, 2016 (L.I. 2250)
Solid Waste Management	? Environmental Assessment Regulations 1999, (LI 1652) ? Local Governance Act, 2016 (Act 936). ? Environmental Tax ? ACT, 2013 (ACT 863) ? Environmental Sanitation Bye-Laws (2003)
Water Management and Pollution	? Environmental Protection Agency Act, 1994 (Act 490) Part I & II ? Ghana Water and Sewerage Corporation Act, 1965 (Act 310) ? Rivers Act, 1903 (Cap.226) ? Water Resources Commission Act, 1996 (Act 522)

18. Despite the existence of these environmental policies, there is no comprehensive law that addresses plastics and the circular economy. Individual amendments and a comprehensive review and harmonization of legislation would be required to improve the handling of plastic waste and establish a circular economy framework in the Country. The ?Marine litter and microplastics: promoting the environmentally sound management of plastic waste and achieving the prevention and minimization of the generation of plastic waste? project, by the Secretariat of the Basel, Rotterdam and Stockholm Conventions (BRS) funded by the Norwegian Agency for Development Cooperation (Norad-1 project), has started the process of drafting amendments to bring Ghana into compliance with new requirements under the Basel Convention and points to the addition of reference to plastic wastes in Part I of Act 917 of 2016 and L.I. as being important steps. Another recommendation has been to include plastic waste in First Schedule (List of Hazardous and Other Wastes) and in Fifth Schedule (List of Items to which Levy is applicable) of Act 917 of 2016. The Strategic Roadmap for Better Plastics Management in Accra product conducted for United Kingdom- Foreign, Commonwealth & Development Office (FCDO) also pointed to gaps in the policy framework of the NPMP which could be addressed by making amendments, consolidating relevant policies and assessing existing and potential new regulatory initiatives for plastics and circular economy. The project would seek to remedy these gaps by assessing the regulation, programmes, standards and institutional frameworks that would facilitate the transition to a circular economy framework.

19. Technical guidelines for the identification and environmentally sound management (ESM) of plastic wastes and for their disposal are being revised in the framework of the Basel Convention. The Norad-1 project has recommended the adoption of the ESM strategy within the country as part of a suite of policies on addressing plastic waste. The broad adoption of these guidelines and the ESM strategy would provide policymakers, enforcement personnel and the plastic sector with a

comprehensive framework for managing plastic waste and provide actors within the plastic value chain consistent guidelines and standards to follow in order to maximize efforts to integrate plastics into a circular economy. The lack of enforcement of existing solid waste management regulations is largely due to limited capacity and shortage of personnel for inspection and enforcement activities. This means that even if new regulations were to be brought into place, enforcement may not occur.

20. Ghana has not yet introduced source segregation of plastics from municipal waste at the household level; therefore, they are mixed with other domestic waste during storage and collection processes. Source segregation is usually only practiced for high-value waste, in particular metals that are sold to scrap collectors who regularly contact households and businesses. Public littering is prevalent throughout the country and infrastructure to deal with plastic waste in the public domain are often not available. Without adequate access to affordable waste disposal facilities and collection, (public bins, etc) any legal enforcement of littering bye-laws could be ineffective and potentially inequitable. The government lacks the capacity to raise awareness, reduce single use plastic and determine the most effective means to create behavioural changes in citizens to encourage source segregation.

21. The NPMP and the associated Implementation Plan have outlined number of strategic actions that will be taken in order to develop responsive policies to operationalize circular economy practices in the plastics value chain. The Implementation Plan has outlined a time frame for completing these actions, however, specific timelines and action plans have not been developed to move these initiatives forward. The link between circular economy and plastics is made within the NPMP, however, additional work would need to be completed to properly develop responsive policies required in order to fully operationalize the NPMP.

22. The plastics recycling sector in Ghana recovers valuable types of plastics first, but recycling activities generally stop at the production of plastic flakes or granulates which are reprocessed into lower value plastics or sold into export markets. A lack of plastic and circular economy standards within the country prevents these flakes from being used in high-value plastic applications within the country such as for rPET. Plastic alternatives also face barriers given the lack of standardization and regulation in the country. New business models also present a challenge to the government, given the lack of responsive policies, particularly in the area of water filtration technologies to replace bottled and sachet water. Filtering drinking for communities using water ATMs or filtering water at home with home water filter technologies is also not currently done on a commercial scale within the country.

23. Lack of a clear governance structure for plastics management has been highlighted as being problematic in the country. As the NPMP illustrates, a large number of government ministries, departments and agencies are involved in tackling waste management issues, particularly plastics. At present, there is duplication of efforts and roles among government institutions to address sanitation issues. Duplication and overlapping of roles and responsibilities for environmental agencies in Ghana breeds mistrust, results in lack of accountability, poor leadership and direction. The NPMP and the implementation plan outline a role for a government body called the Resource Recovery Secretariat (RRS) to take control of all plastics related activities in the country, and ensure inter-ministerial cooperation on plastics and circular economy initiatives. A number of gaps to fully operationalize the RRS exist. No workplans or technical experts to assist with the implementation of the workplans currently exist. The project aims to address this gap.

24. Several institutions in Ghana including the Centre for Scientific and Industrial Research (CSRI) conduct R&D activities. R&D activities explicitly focused on plastics and the circular economy do not take place at a scale that would accelerate Ghana?s transition to a circular economy. The NPMP Implementation Plan outlines activities that will promote and conduct R&D, however, the set-up and execution of R&D activities would not be cohesive between different research institutes. There is currently no institute or coordinating mechanisms dedicated to R&D on plastics and circular economy. The project would seek to address this gap.

25. A joint memorandum outlining arrangements for the management of the Plastic Waste Recycling Fund (PWRF) was submitted and approved at a Cabinet meeting held on 15 October 2020. The PWRF will be jointly managed by the Minister for Local Government and Rural Development, the Minister for Finance and the Minister for Environment, Science, Technology and Innovation. MESTI would become the beneficiary of the funds from the PWRF for the purpose of managing plastics, setting up a circular economy framework and setting up the RRS. Currently, there are no financial mechanisms or plans in place to capitalize on the allocation of these funds. In accordance with the Cabinet approval, the project will seek to operationalize these funds and develop mechanisms to allocate these funds to plastic and circular economy innovations and technologies.

Component 2. Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management

26. Appropriate capacity of law enforcement bodies will be an important foundation for the shift to a circular economy. The Norad-1 project is assisting with the development of the training curriculum for customs and law enforcement on border controls for the import of waste and the classification of plastic waste under the Basel Convention. A large number of ministries are involved in the enforcement of existing plastic and plastic waste legislation, however, comprehensive capacity building for enforcement activities required for a circular economy are not planned.

27. Informal plastic waste collectors face unsafe working conditions and are vulnerable to exploitation. Fair compensation for collected plastic waste, at market rates, differs between men and women with women generally being paid less for the same volume of waste. Without capacity building and training for the informal sector, and in particular, women, the benefits of a circular economy in the plastics would not be shared equally. In the baseline project, the operation of the pilots and collection network would not change significantly and training for formal and informal workers would remain the same. A lack of training would have negative consequences for the efficiency of the collection network, and hard-to-recycle plastics including PVCs would pollute the environment and be openly burned. Occupational health and safety of informal workers would not be improved, and proper training on the use of personal protective equipment (PPE) would not occur. With the COVID-19 pandemic, these workers would continue to face infectious disease risk from the improper handling of waste.

28. The baseline pilot projects along the plastic value chain address the pillars of a new plastic economy but lack support to scale operations. The COVID-19 pandemic has redirected capital within the country to other priorities, and presents yet another set-back and challenge for these organizations seeking capital to build their businesses. The capacity of the private sector to develop and undertake research and development to commercialize new innovative products or business models on the domestic market is low. Opportunities for novel technologies in replacing plastics, or re-purposing used plastics to enter the domestic market would continue to be weak and largely unsupported.

29. Private sector investments into the plastic sector continues to follow a linear economy pattern and the scale-up of interventions in the circular economy would not occur at a scale required to reduce marine littering and plastic waste generation. To address part of this issue, the Ghana NPAP will develop an Investment Roadmap scheduled for Q3 2021 which will provide a framework for investments that reduce plastic waste and assist the country in a transition to a circular economy for plastics. Through a competitive open call process, the project published a call for expression of interest for the submission of pilot projects. Despite extending the call and engaging with stakeholders within Ghana through the

NPAP, MESTI, UNIDO field office and UNIDO consultants, no expressions of interest were submitted for reuse/refill or other upstream circular business models. Currently, some level of plastics reuse is practiced in Ghana including refilling of drinking water in 18 litre capacity jars by purified mineral drinking water producers, the horticulture industries reuse PET Bottles for the growing of flowers and PET bottles of 500 ml, 1 litre and 1.5 litre sizes are extensively used for repackaging of cooking oil. These are endeavours that need to be encouraged and supported so that plastic bottles can be given a second and third life before recycling to produce new non-food contact hard plastic products

30. From an economic point of view, circular plastic economy currently operates primarily in the case of PET, HDPE, LDPE plastics. Accordingly, the infrastructure for the collection, treatment, and recovery of these waste streams has been developed and established. The baseline projects build on this infrastructure and aim to address the following principles of the circular plastic economy:

? prevent

? refuse, reduce, reuse, repurpose

? recycle

? food-grade plastic (PET, HDPE, LDPE, etc. ie plastics that can be used for packaging of food)

? product-grade plastic (PET, HDPE, LDPE, PP etc. ie plastic products that can be used for the production of plastic waste bins but not for packaging of food.)

? construction material-grade (mixed polymers for construction materials with the exception of POPs containing plastics (PVC))

31. Most of the selected pilots have strong plastic waste collection components with sorting and/or flake production (MSA, Coliba, Pure Home Water). Some of the baseline projects focus purely on waste collection and flake production (Coliba, ASASE). In the baseline project these initiatives stop at this level and sell the flakes which mainly enters the international market. Therefore, the real value addition with upcycling does not remain in the country. Transitioning to a circular economy framework will require an increase in public education and intentional action to address gender inequalities and mitigate risk to waste pickers. The Norad-1 project is also in the process of implementing pilot projects including projects on fishing net collection with recycling, plastic-free schools, water ATMs, and the development of edible and compostable packaging. The GIZ E-Waste Programme Ghana, funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), has an ongoing project in the country that seeks to improve the conditions for sustainable e-waste management in Ghana. Linkages with the GIZ e-waste project and the recycling and/or disposal of wiring and other e-waste plastic will be an important consideration addressed during project implementation.

32. Ghana is expected to participate in three projects in cooperation with the IAEA. Two of these projects are slated to start early 2022 including a National Technical Cooperation Project for Ghana on ?Using nuclear technology in management of plastics waste in Ghana? and a Regional Project on ?Nuclear Technology for controlling plastic pollution in Africa?. Lastly, the IAEA has reached out to the Ghana Atomic Energy Commission- GAEC to participate in a Coordinated Research Project on ?Recycling of polymer waste for structural and non-structural materials by using ionizing radiation?.

33. None of the baseline projects address the final disposal of plastics, however, there is always a significant portion of the plastics which recycling is not permitted or not resource efficient, i.e. POPs-containing plastics or hard to recycle plastics like PVC. Due to the lack of finance and supporting legal infrastructure, this waste stream would continue to be left untreated in the baseline projects. Further without the project this important value chain of the circular economy would not be demonstrated, understood and regulated in a comprehensive manner.

Component 3. Coordination, communication strategy and knowledge management among key partners and stakeholders for achieving Ghana?s NPAP-GPAP and NPMPs objectives

34. The Ghana NPAP has established a robust governance framework incorporating leaders across the public, private and civil society sectors. At the highest decision-making level, the NPAP Steering Board brings together on a quarterly basis the heads of 21 institutions that have the collective power to enact measures and mobilize large-scale funding necessary to advance a circular plastics economy. Each Board member is represented by up to two delegates that meet monthly via the Technical Committee to share information about ongoing plastic and circular economy initiatives in the country and contribute to a collective plan of action. The Ghana NPAP?s role as convener of stakeholders, providing valuable recommendations, insights, and coordination with stakeholders would not continue at the current capacity without the support of the project, and the organization would not be able to follow-through on the Action Roadmap and Investment Strategy. The NPAP membership also needs to be extended by increasing awareness, as not all plastic and circular economy stakeholders are represented within the platform. The UNDP Waste Recovery Platform also plays a coordinating role for stakeholders within the country for multiple waste streams including plastics and the work of the NPAP and UNDP needs to be more closely linked.

35. Under the NPMP, the Government is in the process of setting up the RRS. The RRS will need to consult with stakeholders on plastics and circular economy initiatives and policy instruments regularly through different mechanisms including the NPAP platform, the UNDP WRP and other bi-lateral arrangements. No structures have been put into place for the RRS to coordinate with stakeholders on a national, regional and international basis.

36. Communication efforts are an important component to ensuring that the recommendations of the National Action Roadmap and the NPMP are properly implemented and that awareness is raised about the opportunities in the circular economy. A communication strategy that unifies all of the work being done in Ghana on plastic waste and circular economy currently does not exist. There is limited community awareness of the waste management legislation currently in place, and the public and household attitude towards recycled and repurposed articles are generally low. Most people do not know which articles are produced from recycled plastics. In response to these concerns, the Norad-1 project developed, including recommendations for revisions in school curricula, educational and outreach materials targeted to specific interest groups and range of ages to promote behavioural change towards sustainable consumption. Communications about POPs, marine litter and human health implications of plastics are scattered and not uniform, and are conducted by multiple uncoordinated organizations.

37. The change of this attitude in the baseline project is expected to happen very slowly, mostly through the independent activities of private enterprises. Therefore, the scale up of selling products made of repurposed or recycled plastics would generally be slow and its pace is not expected in the baseline projects to increase without sustained effort on awareness of alternative products and sustainable consumption.

38. The lack of knowledge about the concept of circular economy benefits has been identified as one of the barriers to the implementation and the mainstreaming of plastics management and circular economy practices among stakeholders along the plastic value-chain in Ghana. Stakeholders involved in waste management had either never heard of the term circular economy, or did not understand its relevance to their business activities and their linkages to a circular economy. Continuity and cohesion of existing knowledge sharing platforms is not guaranteed. Stakeholders must have access to information and knowledge that enable circular economy, and plastics innovations, business models, best practices and policies can be shared amongst stakeholders to accelerate actions toward a circular economy framework within the country.

39. Networks at the national, regional and international level for sharing knowledge have been established by the NPAP and the UNDP. There is a significant amount of new information that is available within the country and from networks outside of the country which will need to be updated regularly, but this would not happen under current plans. The Ghana NPAP is linked to Indonesia NPAP and Vietnam NPAP through the GPAP. The UNDP WRP has been developed and will be launched in 2021. The WRP is an important tool that hosts knowledge from different waste sources including plastics. New knowledge modules and tools would need to be developed in order to capture knowledge on circular economy initiatives and technologies within the country. Knowledge dissemination and sharing of valuable information through these networks will need to be continued to ensure the scale-up of circular economy practices in Ghana.

40. Removing knowledge barriers, such that circular economy technologies and methods for dealing with plastics effectively can be scaled up within Ghana, would not occur under the baseline project. Also, demonstration activities and the results from these activities would not be effectively shared with stakeholders.

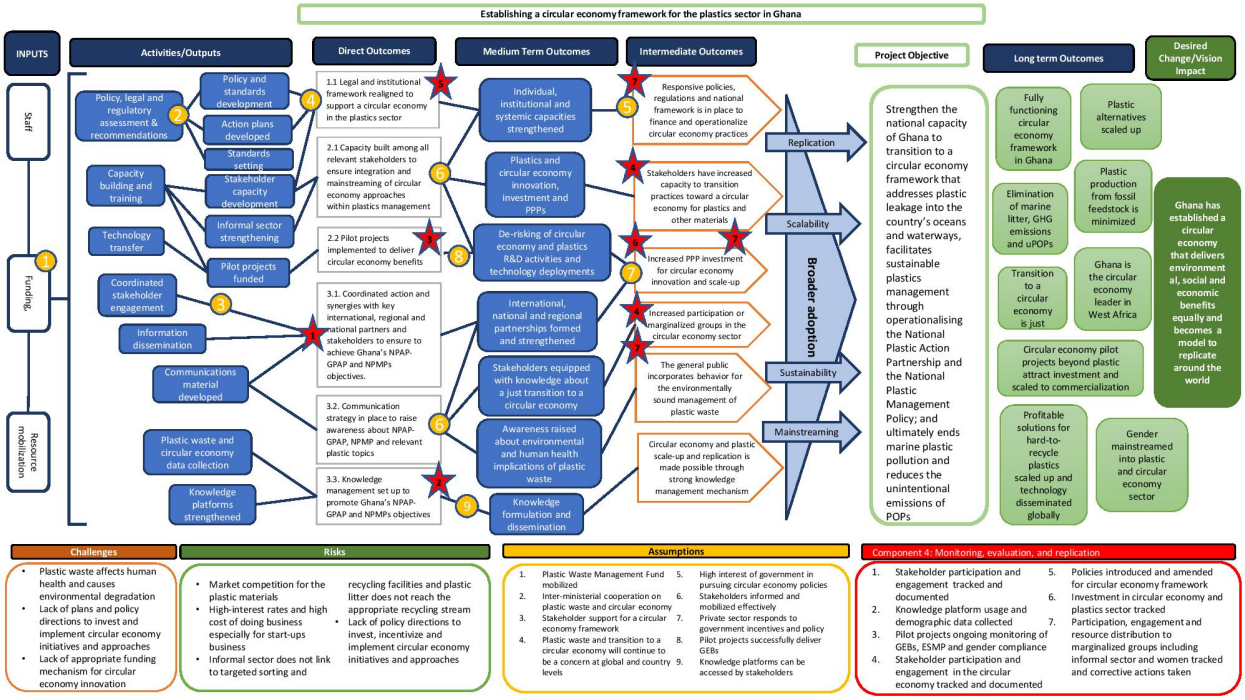
1a.c) The proposed alternative scenario with a brief description of expected outcomes and components of the project

41. The aim of the project is to enable the Government of Ghana and relevant stakeholders to transition the plastic sector toward full circularity. With the assistance of GEF, Ghana plans to update and amend existing institutional and legal frameworks to incentivize a switch to a circular economy for the plastic sector, build capacity within the private sector and among stakeholders to ensure the transition to a circular economy leaves no-one behind and ensure that knowledge developed during the transition is shared widely within the country and with regional and international partners. The long-term vision is for Ghana to become a circular economy hub that can be replicated around the world.

Theory of Change

42. The Theory of Change diagram is presented below and provided in Annex W. To ensure progress toward setting up a circular economy framework that can be replicated around the world, the project will execute activities that will directly address the underlying barriers to achieving a circular economy framework including:

- ? Lack of enabling conditions including policy framework for the country to adopt circular economy for plastics;
- ? Lack of environmentally sound and economically-profitable plastics re-use, remanufacturing and recycling infrastructure;
- ? Weak enforcement of existing measures against littering;
- ? Marginalization of women and informal sector workers along the plastic value chain;
- ? Lack of value-added plastic manufacturing using recovered materials; and
- ? Lack of proper training and knowledge sharing amongst stakeholders.



43. The proposed project will be developed through four linked components that will be implemented to achieve the expected results:

- Component 1 is designed to improve and strengthen the policy and regulatory framework for establishing an enabling framework for a circular economy in plastics management;
- Component 2 supports the strengthening of the technical capacity and skills of project beneficiaries through capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management to achieve GEBs and a reduction in UPOPs;
- Component 3 ensures that the circular economy and plastics activities are coordinated, communicated and knowledge from these activities are shared among key partners and stakeholders;
- Component 4 covers standard monitoring and evaluation of the project. This component will also support the dissemination of experience and lesson learned from the project as a whole.

The following provides the details of the project components:

Component 1: Establishing an enabling framework for a circular economy in plastics management

44. This project component is composed of activities which aim at building the framework for the effective management of plastics using the principles of a circular economy. The component builds on the National Plastic Management Policy (NPMP) and the NPMP Implementation Plan.

Recommendations from the NPAP National Plastic Action Roadmap will also be incorporate into the component where applicable. The project will assist the government with the set-up of the Resource Recovery Secretariat housed within MESTI and a Center of Excellence dedicated to research and development for the effective reduction of u-POPs and greenhouse gas emissions from open burning of waste as well as marine plastic litter. Legal and institutional frameworks will be developed, implemented and revised where appropriate to sustain circular economy business models in the plastics sector over the long term. National Experts and International Consultants hired under this component will be used to provide regulatory and policy advice and expertise to the government on transitioning to a circular economy for plastics. This expertise will be passed on to MESTI/EPA staff through capacity building and training as well as through the production of reports that can provide the basis for regulatory developments. Updated intragovernmental arrangements and capacity building exercises will further strengthen institutions and support the private sector in transitioning to a circular economy. The Ghana NPAP will assist the government to convene and coordinate relevant stakeholders during the process of establishing a circular economy policy framework. Detailed activities for each Output are described in Annex L

Outcome 1.1: Legal and institutional framework realigned to support a circular economy in the plastics sector under Ghana?s National plastics management policy and the NPAP

45. The realignment of legal and institutional frameworks to support a circular economy in the plastics sector and ensure alignment with the NPMP will be achieved through this outcome. This will be conducted primarily by the Government of Ghana through the MESTI. The Ghana NPAP will support these activities by providing inclusive and evidence-based thought leadership through the NPAP Subcommittee on Enabling Policy and through recommendations from the NPAP National Action Roadmap.

Output 1.1.1: Situational analysis: Plastic flows assessed for community-level archetypes

46. This output will entail the strengthening of existing systems in place to collect plastic data in the country, development of a methodology for tracking the circularity of plastics in Ghana and build the capacity of actors involved in the plastic value chain to collect and report plastic and plastic waste data to enhance the granularity of plastic data collected and enable to government to make responsive policies to address gaps and barriers as the NPMP is implemented. The Ghana NPAP?s study, Trade and the Circular Economy: A deep dive into plastics action in Ghana, provides a strong overview of the import and export of plastics within Ghana and the types of plastic value chain activities that the current plastic industry undertakes within the country. Based on the research, Ghana does not produce any polymer resins within the country and the majority of plastics are imported as raw materials (pellets), semi-finished products (preforms) or finished products. There is some local production of semi-finished plastic products (e.g. preforms) and finished packaging products (e.g. films, plastic bags, containers) that are sold to manufacturers and distributors within the country. The output will also enhance the ability of the Government to track all plastics produced within the country. Additionally, a comprehensive model will be developed to assess and quantify the volumes or quantities of plastic products are imported into the country and that which is exported out of the country. The NPAP subcommittee focused on harmonization of metrics would be engaged to provide feedback while these activities are implemented and additional stakeholders will be invited to this group to ensure all initiatives are represented..

Output 1.1.2: Legal, and institutional capacities for a circular economy in the plastics sector assessed.

47. This output will assess the current institutional capacity of government ministries to effectively implement the NPMP including an EPR scheme and private sector actors to respond to the requirements of the NPMP. The output will also investigate and assess upstream circular business models currently in existence within the country he and the required policy and regulatory changes that require modification in order to enhance the growth of these circular models including reuse measures (such as refill, repair, remanufacture, re-sale, rent.

Output 1.1.3: Advancement of the NPAP National Action Plan, and technical guidelines on bottom-up approach to circular economy in plastics and marine litter management developed in close cooperation with NPAP and within the context of the National plastics management policy (NPMP)

48. This output envisages the development of action plans, technical guidelines and standard operating procedures that will advance the recommendations of the Ghana NPAP National Action Roadmap and the NPMP.

Output 1.1.4: Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures, fair trade and quality standards

49. Under this output, standards related to plastic alternatives, circular plastics and secondary raw plastic materials will be developed/adopted in the country. A strategy for the phase out of single-use plastics will be developed in line with recommendations from the NPAP and green procurement guidelines will be developed for adoption within the government. Reuse/refill circular business model policy recommendations will also be developed to ensure policy and regulatory amendments can be supported with practical examples. Relevant projects ongoing in Ghana will be consulted in the development of these policies such as the Norad-1 project team, GIZ, UNDP and multistakeholder platforms such as the GPAP and the Consumers Beyond Waste initiative. This consultation will be held during the inception phase first and be conducted throughout the project duration. In consultation with the Norad-1 project team, outstanding Basel convention amendments will also be carried out during the project to enhance the ability of the Government to ensure illegal imports of plastic waste to the country can be controlled and monitored. Extensive consultations were held with the Norad-1 team to ensure the project would, where possible, continue work that may not be completed during the Norad-1 project timeframe.

Output 1.1.5: The Resource Recovery Secretariat established

50. There is no one body at the government level that coordinates all activities related to plastics and the circular economy. This output will develop the necessary workplans and financial framework to set up the Resource Recovery Secretariat (RRS) and the arrangements of the set-up of the Center of Excellence. The RRS will establish an inter-ministerial coordination mechanism and ensure cohesion in policy and regulatory instruments used to implement the NPMP amongst relevant ministries including, MESTI/EPA, MoF, MoFAD, MLGRD, MSWR. The RRS will be the governmental body responsible for policy coherence throughout the country on plastics and the circular economy. Under the RRS Initial Structure and Staffing (See Annex X: Resource Recovery Secretariat Initial Structure and Staffing) the role of the RRS is clearly outlined as providing the necessary oversight for ensuring the successful implementation of the NPMP. The RRS will further enable policy coherence by drawing upon the diverse expertise of the members of the RRS Governing Board. The Governing Board will represent actors from across the plastic value chain and ensure that the RRS is fulfilling its overall mandate. In addition, the RRS will have both a Strategic Planning & Cross-sectoral Coordination division and a Good Governance division. The Strategic Planning division will ensure that activities of the RRS are coordinated amongst plastic value chain actors and across the public sector. The Good Governance division will reinforce the coordination of plastic and waste management activities within the public sector. The NPAP remains the main stakeholder convening body within Ghana and will provide input into the RRS as needed. The RRS will also consult the outputs of the NPAP such as the Action Roadmap and Investment Roadmap to ensure alignment between suggested actions from stakeholders and government objectives as outlined in the NPMP. The RRS will be funded through the regular budget of the MESTI and through the Plastic Waste Management Fund. Portions of the PWMF will be allocated to MESTI to implement the NPMP and the activities of the project. Current funds within the PWMF are sufficient to support co-financing investments in the project and additional funds will be added to the PWMF as part of ongoing eco-levy fees paid to the fund. The RRS will also consult and coordinate its activities with stakeholders through bi-lateral arrangements and through the

NPAP platform to ensure activities and instruments related to plastics and circular economy will benefit from broad stakeholder engagement based on international best practices.

51. The Center of Excellence will help support tracking progress on pilot projects funded under Component 2, and using the data collected during these pilot projects, be used to validate and support additional pilot projects, and/or redirect financial resources to the most promising technologies that reduce POPs and marine littering. The Center will also act as a way to attract additional financing through government partners and international investment. Through the Center, promising technologies will be de-risked to the point where investment would flow into the organizations piloting the technologies which would help support the commercialization and scale-up of these technologies over time.

Component 1 can be summarized as:

Component 1: Establishing an enabling framework for a circular economy in plastics management	
Outcome 1.1 Legal and institutional framework realigned to support a circular economy in the plastics sector under Ghana?s National plastics management policy and the NPAP	
Output 1.1.1.	Situational analysis: Plastic flows assessed for community-level archetypes
Activity 1.1.1.1	Design and develop a methodology for collecting data of the pilot plastic value chains
Activity 1.1.1.2	Collect annual plastic inventory data for the completion of the National Inventory of Plastic Waste and the NPAP Baseline Analysis
Activity 1.1.1.3	Develop a common methodology and indicators for a circular economy for plastics
Activity 1.1.1.4	Conduct capacity building of actors within the plastics and circular economy sector including informal sector
Activity 1.1.1.5	Develop and strengthen institutional structures for intragovernmental and inter-agency cooperation on the exchange of plastics related data
Output 1.1.2	Legal, and institutional capacities for a circular economy in the plastics sector assessed.
Activity 1.1.2.1	Undertake an assessment of the NPMP implementation strategy and develop an action plan for implementation of recommendations
Activity 1.1.2.2	Undertake an assessment of upstream circular economy business models
Activity 1.1.2.3	Undertake an assessment of private sector actors in the plastics value chain to support a transition to circular economy in the plastics value chain
Activity 1.1.2.4	Conduct an assessment of regulatory measures for alternative materials and eco-design for plastics
Output 1.1.3	National implementation/actionable plans, and technical guidelines on bottom-up approach to circular economy in plastics and marine litter management developed in close cooperation with NPAP and within the context of the National plastics management policy (NPMP)
Activity 1.1.3.1	Develop training materials for technical guidelines for plastic value chain activities and actors
Activity 1.1.3.2	Develop training materials for Standard Operating Procedures for plastic value chain activities and actors
Activity 1.1.3.3	Conduct training to strengthen municipal enforcement bodies to control public littering
Activity 1.1.3.4	Design and develop a source segregation programme for the household and institutional levels

Output 1.1.4	Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures and quality standards
Activity 1.1.4.1	Develop an implementation plan for the National Plastic Action Roadmap and implement remaining outstanding recommendations of the Norad-1 project
Activity 1.1.4.2	Develop a single-use plastic phase-out strategy to discourage the production, import, and use of single-use plastics
Activity 1.1.4.3	Develop and/or adapt quality standards for secondary raw plastic materials including labeling
Activity 1.1.4.4	Develop and/or adapt quality standards for plastic alternatives including labeling
Activity 1.1.4.5	Develop and/or adapt quality standards for circular plastics and eco-design of plastic containing products including labeling
Activity 1.1.4.6	Conduct an assessment of national drinking water standards and laboratory assessment methods to take into account new water distribution business models
Activity 1.1.4.7	Conduct an assessment of green government procurement guidelines
Activity 1.1.4.8	Develop schedule of proposed increases in fines for littering in public places
Activity 1.1.4.9	Develop a pilot PET, HDPE and PP bottle deposit scheme
Activity 1.1.4.10	Undertake an assessment and design an action plan for the introduction of an EPR scheme under the NPMP
Activity 1.1.4.11	Develop policy and regulatory proposals to incentivize reuse systems
Output 1.1.5	The Resource Recovery Secretariat established
Activity 1.1.5.1	Develop and implement a workplan for the operation of the Resource Recovery Secretariat
Activity 1.1.5.2	Develop and implement the financial framework for the operation of the Resource Recovery Secretariat
Activity 1.1.5.3	Develop and implement a workplan and financial arrangements for the operation of the Center of Excellence under the RRS
Activity 1.1.5.4	Establish the data collection and analysis system of the NPAP, RRS and Center of Excellence
Activity 1.1.5.5	Develop relevant digital platforms to communicate and share knowledge with stakeholders

Component 2: Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management

52. This project component is comprised of activities which aim at building capacity in the country for circular economy innovation and demonstration. National Experts and International Consultants hired under this component will be used to provide guidance and expertise to the country on the deployment of technologies for plastics circular economy and provide support to stakeholders in the project during implementation. The knowledge passed on by these experts and consultants will strengthen the capacity of the country to transition to a circular economy framework for the plastic sector and in particular, in

the private sector. The component will ensure that stakeholders within the plastics sector and the circular economy are trained and able to respond to a transition to a circular economy. During the inception phase, the pilot projects will be engaged individually about their business operations to ensure full compliance with the ESMP, circular economy practices and principles, and project expectations. Specific focus will be placed on gender, human rights and worker rights and pollution mitigation. Pilot projects will demonstrate activities from across the plastics value chain and research and development activities will address specific issues related to the scale-up of solutions for hard-to-recycle plastics. Pilot projects will be used to demonstrate how the plastic sector and plastic waste management sector can adopt circular economy practices in order to generate environmental, social and economic benefits. In addition, the pilot projects and the data collected from these pilots will assist the government with policy decision making. The data collected during the project about the pilots and the challenges, barriers, and successes they are having can assist the government in developing responsive circular economy policy. The pilots will be used to showcase Ghana?s efforts to address plastic waste using innovative technologies and practices. Over the duration of the project, these pilots will host local, national, regional and international visitors to illustrate the types of techniques that can be employed around the world. Once the project is complete, these pilots will continue to provide real world examples of circular plastic solutions. In addition, R&D activities will help support the private sector in establishing pilot projects within the country and de-risk investment in circular economy innovation. Detailed activities for each Output are described in Annex M.

Outcome 2.1: Capacity built among all relevant stakeholders to ensure integration and mainstreaming of circular economy approaches within plastics management

53. This outcome aims at supporting stakeholders during a transition to a circular economy for plastics. The project will support the improvement of enforcement bodies responsible for inspecting facilities within the plastic value chain. Based on the recommendations of the NPAP Baseline Analysis, National Action Roadmap and engaging with the stakeholders and Subcommittees of the NPAP platform, with the project the government?s efforts in strengthening primary law enforcement bodies will be undertaken in a comprehensive manner, taking into account the specific nature of each plastic value chain. Training will involve relevant government ministries, department and agencies. A database of companies in the plastic value chain will be compiled with various monitoring indicators to be tracked during routine inspection and visits to these actors by the enforcement bodies. The project will also provide training to CSO and private sector stakeholders on these enforcement measures and relevant sanitation, plastic and circular economy regulations, policies and guidelines.

Output 2.1.1: Stakeholders from the public sector including targeted, municipalities, industrial private sector associations, and public trained on respective policies, regulations and technical guidelines within the NPMP and NPAP National Action Roadmap, including the gender dimension.

54. Under this output, the project will develop training materials and conduct training programmes with a variety of stakeholders to ensure compliance with relevant policies, regulations, standard operating procedures and technical guidelines. Inspection guidelines will be developed for enforcement bodies to ensure coherence between different inspection organizations and enforcers will be trained on these guidelines.

Output 2.1.2: Capacities of private sector strengthened at all stages of the value chain on new responsive regulations, procurement procedures or quality standards in view of implementing circular economy practices in the industrial sector

55. This would entail the development of a research and development programme at the Center of Excellence designed to support demonstration pilots and other private sector actors with R&D activities. To support demonstration pilots and other private sector actors, marketing materials will be developed to promote products developed from plastic alternatives and repurposed and recycled plastics.

Outcome 2.2: Pilot projects implemented to deliver circular economy benefits

56. This outcome is aimed at funding and implementing pilot projects from across the plastic value chain and strengthening the collaboration of between actors involved in the plastic value chain and from the circular economy. The project will also investigate linkages with the Norad-1 project and the GIZ E-Waste Programme Ghana during implementation to maximize project outcomes.

Output 2.2.1: Sustainable financing, business models and Public-Private Partnerships (PPP) developed and applied in the pilots

57. The incremental project will group pilot projects from across the value chain to ensure a steady supply of plastic waste is collected and provided to processors. The output will entail developing business models, assessing the economic efficiency of the pilots and developing PPP agreements to be signed by pilot demonstrations. During the PPG phase, reuse pilots could not be sourced for inclusion in the project and therefore a new activity will focus on running an open call to attract reuse pilot projects. In particular, the roadmap will provide guidance for the development of blended financing mechanisms. Ghana NPAP will develop an Investment Roadmap scheduled for Q3 2021. This roadmap will be used as a strategic framework for implementing the activities planned under this output as well. The long-term sustainability of the project will be rooted in the funds accruing from the plastic waste recycling fund. The Center of Excellence will help support tracking progress on pilot projects and the development of financial and sustainable business models for transition the plastic sector to a circular economy. The Center will also support data collection to ensure pilots are reaching established targets and objectives and use this data to help support additional investment from the private sector. The following table presents the PPP group assignments. The selected pilot projects are described in Annex N.

Group Name **Value chain**	**PIF pilot classification**	**Group members**	**Remarks**
Food-grade plastic recycling	Awareness-raising, PET-plastic recycling, capacity building, technology transfer, design and production	DAVERO ICE + Pure Home Water + MSA + rePATRN	Pure Home Water and DAVERO ICE can support MSA to sensitize the members of faith-based organizations to make behavioral changes towards plastics, plastic wastes and plastic recycling. Pure Home Water can place their selling points at MSA collection points. MSA can conduct awareness raising activity explaining the usefulness of team member?s activities. The plastic collected by MSA is expected to be good raw material for high-purity, food-grade plastic production of rePATRN. Davero Ice?s system will prevent the use of single-use plastics by incentivizing consumers to use reusable containers for water and provide a specific incentive to those consumers who drop off their plastic waste at Davero Ice sites. Consumers using Davero Ice?s water dispensers would be entitled to discounted water refill?s if they collect and deposit plastic waste to the Davero water dispenser sites where collection bins will be located.

Group Name Value chain	PIF pilot classification	Group members	Remarks
Product grade plastic recycling No 1	Awareness-raising, PET-plastic recycling, capacity building, technology transfer, design and production	Komenda + COLIBA + Pure Home Water	Komenda plans to increase its collection and recycling capacity. The listed partners can supply good quality plastics for its manufacturing technology, while the low quality (but still homogeneous) plastic stream can go into pyrolysis. Komenda requires further electricity to power its upgraded technology. They plan to install a Photo Voltic system. Instead the GEF project alters this plan to install a pyrolysis unit and use the electrical energy to power the production lines.
Product grade plastics recycling No 2	Awareness-raising, PET-plastic recycling, capacity building, design and production	ASASE - SESA ? CWR + Mckingtorch + Pure Home Water	The ASASE has launched is the first social enterprise to reprocess plastic packaging waste collected in the community. Recycling Plants for HDPE and LDPE are operated by SESA Recycling and CWR. ASASE?s awareness raising activity can be can be supplemented by the activities of Mckingtorch (repurpose) and Pure Home Water.
Construction grade plastic recycling	Collection and recycling of hard-to-recycle plastics	Zoomlion + NelPlast	Since Zoomlion makes RDF, which is partly sold to UPPR for production of waste bins. Hard-to-recycle plastic is a suitable raw material for construction-grade plastic production of NelPlast (pavement blocks / LEGO bricks). The non-recyclable waste stream will be used for pyrolysis or bacterial degradation. Demonstration project partners will be selected in the project by the Center of Excellence.
Product grade plastic recycling No 3.	PET-plastic recycling, capacity building, design and production	UPPR	This will be a stand-alone pilot project. The plastic yarn produced will be sold for the textile and/or fashion industry.
Biodegradable plastic production	Creating demand and shared economy models using bio-degradable plastics	Eco-solve	This will a stand-alone project. This demonstration project will be a pioneer in Ghana to replace single use plastic products such as plastic bags. The biodegradable plastics will also be marine environment degradable. Activity 1.1.4.4 will investigate the most appropriate standard to introduce to ensure full biodegradability within the natural environment not just within industrial composting facilities.

58. The sustainability of the circular economy can be assured if the recovery companies at the top of the value chain produce value-added products from the collected waste plastics. This creates a demand for waste plastics and guarantees that the plastic waste collection networks thrive. During the implementation of the project activities, each PPP group will operate as an independent yet interdependent ecosystem. The collected data (economic, material flow, operational, or social) can be

evaluated within the particular ecosystem and help decide which solution may require support in the future. The outputs collected in this way can be used in the development of the EPR scheme, as well as in the creating the enabling legal framework for a circular economy.

Output 2.2.2: Pilot projects for reducing plastics from fossil feedstock implemented

59. This output will demonstrate pilot projects that decouple from fossil fuel feedbacks and seek to eliminate single-use plastic usage and use biodegradable materials instead. The Center of Excellence will help support tracking progress on pilot projects funded under this output and support data collection to ensure pilots are reaching established targets and objectives

Output 2.2.3: Pilot projects for reducing plastic leakage into nature implemented
60. This output will strengthen the plastic collection network and clean-up and eliminate waste from waterways and beaches. The output will also implement projects that include the environmentally sound-disposal of non-recyclable plastics through the Center of Excellence.

Output 2.2.4: Pilot projects for demonstrating effective after-use plastic economy implemented
61. The output will demonstrate pilot projects that recycle (including upcycling and downcycling) plastics and includes the production of yarn, food grade rPET, and the production of plastic products. The Center of Excellence will help support tracking progress on pilot projects funded under this output and support data collection to ensure pilots are reaching established targets and objectives

The related activities under Component 2 are given below:

Component 2 Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management	
Outcome 2.1 Capacity built among all relevant stakeholders to ensure integration and mainstreaming of circular economy approaches within plastics management	
Output 2.1.1	Stakeholders from the public sector including targeted, municipalities, industrial private sector associations, and public trained on respective policies, regulations and technical guidelines within the NPMP and NPAP National Action Roadmap, including the gender dimension.
Activity 2.1.1.1	Build technical and human resource capacities of the primary enforcers
Activity 2.1.1.2	Develop inspection guidelines for primary enforcements bodies
Activity 2.1.1.3	Conduct training of primary enforcers on inspection methods
Activity 2.1.1.4	Undertake inspection programs at different levels of the plastic value chain
Activity 2.1.1.5	Conduct training workshops for NGOs and private sector stakeholders on the new legal and enforcement measures that guide transition to circular plastic economy
Output 2.1.2	Capacities of private sector strengthened at all stages of the value chain on new responsive regulations, procurement procedures or quality standards in view of implementing circular economy practices in the industrial sector

Activity 2.1.2.1	Support research and development towards circular economy of plastics among private sector stakeholders
Activity 2.1.2.2	Support marketing activities of to promote circular economy practices within the plastic sector
Activity 2.1.2.3	Conduct training for plastic collectors on best practices
Outcome 2.2 Pilot projects implemented to deliver circular economy benefits	
Output 2.2.1	Sustainable financing, business models and Public-Private Partnerships (PPP) developed and applied in the pilots
Activity 2.2.1.1	Sign PPP agreements among pilot project partners
Activity 2.2.1.2	Develop business models
Activity 2.2.1.3	Assess the economic and environmental efficiency of the pilot demonstration projects
Activity 2.2.1.4	Develop financial mechanism based on the lessons learned from pilot demonstration projects to assure sustainability of CE system
Activity 2.2.1.5	Conduct an open call for expressions of interest in reuse pilot projects
Output 2.2.2	Pilot projects for reducing plastics from fossil feedstock implemented
Activity 2.2.2.1	Demonstrate pilots that discourage single use plastic production
Activity 2.2.2.2	Demonstrate the production of biodegradable plastics from alternative feedstock
Output 2.2.3	Pilot projects for reducing plastic leakage into nature implemented
Activity 2.2.3.1	Strengthen plastic waste collection network
Activity 2.2.3.2	Demonstrate projects targeting environmentally sound disposal of non-recyclable plastics through the Center of Excellence
Activity 2.2.3.3	Implement plastic waste collection projects from waterways and beaches
Output 2.2.4	Pilot projects for demonstrating effective after-use plastic economy implemented
Activity 2.2.4.1	Demonstrate food-grade plastic recycling
Activity 2.2.4.2	Demonstrate product-grade plastic recycling or reuse
Activity 2.2.4.3	Demonstrate material-grade plastic recycling

Component 3: Coordination, communication strategy and knowledge management among key partners and stakeholders for achieving Ghana?s NPAP-GPAP and NPMPs objectives

62. Activities under this component will help the Government of Ghana engage more stakeholders through the NPAP platform and raise awareness about the NPMP and the NPAP. The component aims at improving transparency accountability and coordination and enables external partners to contribute their projects and expertise to implementing the NPMP. By building the capacity of the NPAP, more stakeholders can be kept informed about plastics and the transition to a circular economy, a community of practice will be developed in the country on plastics and the circular economy and stakeholders will be able to collaborate more effectively to accelerate the interventions the NPMP will develop. In addition, knowledge sharing amongst the stakeholders will ensure new, existing and future projects are developed in an additive rather than duplicative manner and that lessons learned from the project are shared nationally, regionally and internationally to promote replication and scale-up where necessary. Detailed activities for each Output are described in Annex O.

Outcome 3.1. Coordinated action and synergies with key international, regional and national partners and stakeholders ensured to achieve Ghana?s NPAP-GPAP and NPMPs objectives

63. Gaps in coordination between stakeholders will be addressed through the enhancement of the NPAP and the RRS. By strengthening the NPAP Secretariat, the project will ensure stakeholders are informed and better able to coordinate activities to assist the country in meeting the NPMPs objectives. By establishing strong regional and international partnerships, the RRS will ensure partners are delivering activities in the country that support the transition to a circular economy.

Output 3.1.1 Enhance continuity of GPAP Secretariat in Ghana to improve transparency, accountability and coordination of the various legislative instruments, capacity building efforts and pilot demonstration activities for a circular plastics economy framework

64. Through this output, the NPAP will act as a convener of public, private and civil society stakeholders, initiatives and funding in order to scale and accelerate in-country partnerships to tackle plastic waste and pollution. The UNDP WRP will support stakeholder engagement activities under the output. NPAP will act as the lead conveyor, facilitating dialogue across partners and projects, ensuring cohesion and providing strategic insight to encourage carefully curated activities that maximize impact and minimize cost and risk. The core function of the NPAP will continue to provide a neutral space for collaboration between public, private and civil society sectors stakeholders, developing a National Plastic Action Plan and Investment Strategy that is co-created in a transparent and inclusive process. In this way, the NPAP will be an important partner for the RSS, providing it access to a space that is neutral and inclusive to solicit stakeholder feedback on issues related to policy, financing, monitoring, evaluation, enforcement, among other issues.

65. Existing mechanisms of the Ghana NPAP have focused on a core group of key actors across the plastics ecosystem. A key ambition of the NPAP for 2021 and onward is to broaden the NPAP platform to make room and meaningful opportunities for engagement for a comprehensive representation of the hundreds of institutions involved in plastic action across Ghana ? and eventually regionally. Building from the mechanisms established for knowledge management via the Technical Committee meetings and other forums, this Project will enhance those structures to engage a much broader group of stakeholders as NPAP members.

Output 3.1.2: Enhance capacity of RRS for coordination of circular economy and plastics partnerships, cooperation frameworks and agreements within the NPMP implementation objectives.

66. This output aims to build capacity of the government to coordinate activities in the country and ensure information sharing between stakeholders is established. This will allow the collection and sharing of information that will be useful for the building of a circular economy framework for the

country. The development of curricula will ensure that MESTI/EPA and relevant government staff are professionalized in the circular economy approach and can provide relevant advice, guidance and support to stakeholders. The experts will also guide the private sector actors to mainstream circular economy approaches into their operations and processes in conformity with the vision of the NPMP.

Outcome 3.2 Communication strategy in place to raise awareness about NPAP-GPAP, NPMP and relevant plastic topics

67. A communications strategy will ensure that stakeholders are informed about the NPMP and the ongoing work of the NPAP and are motivated to contribute resources to implement the NPMP. The strategy will also help raise awareness amongst stakeholders (international and national) about the NPMP, the RRS and the circular economy for plastics and promote behavioural change amongst the citizens of Ghana.

Output 3.2.1 Communication strategy along the CE perspective developed and implemented to raise awareness on the negative impacts of the plastic pollution on natural environmental systems (including marine litter, POPs, GHG emissions and human health) towards consumers behaviour change

68. This output will develop a strategy to raise awareness amongst stakeholders (international and national) about the NPAP, UNDP WRP, NPMP, the RRS and the circular economy for plastics and promote behavioural change amongst the citizens of Ghana. The development of a situational analysis will ensure that certain levers could be employed to change the attitude of citizens to plastic management and identify a set of incentives that could enable this behavioural change. The development of education, communication and promotional materials for sharing with both national and international stakeholders will further enhance the ability of the country to transition to a circular economy.

Outcome 3.3. Knowledge management exchange set up to share and receive project information and knowledge locally, nationally and globally

69. A knowledge management system will help the country disseminate experiences and lessons learned from the transition to a circular economy on a national, regional and global scale. Ghana became the first African nation to join the Global Plastic Action Partnership, thus establishing the Ghana NPAP. The set-up of a robust knowledge management systems will help the country become a regional model for sustainably managing plastics and transitioning to a circular economy. The outputs aim to develop a knowledge sharing platform that can be used by relevant stakeholders and to generate knowledge content that can be shared to the knowledge sharing platform by linking with ongoing or forthcoming national and international initiatives on plastics and circular economy.

Output 3.3.1 Effective knowledge management done through the RRS, NPAP-GPAP, UNDP platform sharing experience, raising awareness, promoting replication and best practices on the national level

70. Under this output, knowledge materials will be developed including white papers, case studies and documentaries. These knowledge materials will build on the work of the NPAP and UNDP and engage these organizations to help develop materials that can be widely distributed throughout the country and internationally. These knowledge materials will be used to engage stakeholders and share best practices nationally and internationally to promote the scale-up of sustainable circular economy solutions for plastic waste. Specifically the project will contribute knowledge to the Guinea Current Large Marine Ecosystem (GCLME) project by providing documentation, assessments and reports of the project to the stakeholders in the GCLME project including national governments and ECOWAS.

Output 3.3.2 A knowledge exchange platform to promote national and regional partnerships, to learn from other countries? experiences, and innovation, and share state-of-the-art knowledge products related to circular plastics framework strengthened and disseminated among the GPAP countries, and partners in the region, and other key stakeholders

71. This output aims to establish and upgrade the knowledge sharing platform(s) to enable stakeholders to access information and knowledge about the circular economy and plastics. Specifically, the UNDP WRP will be enhanced through this output and the RRS knowledge sharing systems will be set up.

The related activities under Component 3 are given below:

Component 3: Coordination, communication strategy and knowledge management among key partners and stakeholders for achieving Ghana?s NPAP-GPAP and NPMPs objectives	
Outcome 3.1. Coordinated action and synergies with key international, regional and national partners and stakeholders ensured to achieve Ghana?s NPAP-GPAP and NPMPs objectives	
Output 3.1.1	Enhance continuity of GPAP Secretariat in Ghana to improve transparency, accountability and coordination of the various legislative instruments, capacity building efforts and pilot demonstration activities for a circular plastics economy framework
Activity 3.1.1.1	Design, develop and/or co-host workshops and consultations with key stakeholders in Ghana on plastics and circular economy to ensure coordination
Activity 3.1.1.2	Conduct enhanced stakeholder mapping to identify additional stakeholders and invite stakeholders to engage with the NPAP community
Activity 3.1.1.3	Hire technical experts to manage the NPAP Secretariat
Output 3.1.2	Enhance capacity of RRS for coordination of circular economy and plastics partnerships, cooperation frameworks and agreements within the NPMP implementation objectives.
Activity 3.1.2.1	Establish partnerships through the RRS for effective regional and international awareness raising and knowledge communication
Activity 3.1.2.2	Develop curricula and training programme for regional capacity building
Activity 3.1.2.3	Develop information sharing protocols and frameworks
Outcome 3.2 Communication strategy in place to raise awareness about NPAP-GPAP, NPMP and relevant plastic topics	
Output 3.2.1	Communication strategy along the CE perspective developed and implemented to raise awareness on the negative impacts of the plastic pollution on natural environmental systems (including marine litter, POPs, GHG emissions and human health) towards consumers behaviour change
Activity 3.2.1.1	Conduct situational analysis and develop a communications strategy
Activity 3.2.1.2	Design and develop an annual communications plan and conduct awareness raising activities

Outcome 3.3. Knowledge management exchange set up to share and receive project information and knowledge locally, nationally and globally	
Output 3.3.1	Effective knowledge management done through the RRS, NPAP-GPAP, UNDP platform sharing experience, raising awareness, promoting replication and best practices on the national level
Activity 3.3.1.1	Develop white papers, case studies, documentaries and other publications
Activity 3.3.1.2	Design and contribute to external events and workshops to raise awareness regionally and internationally
Activity 3.3.1.3	Organize exposure visits to showcase the achievements of projects under the Centre of Excellence
Output 3.3.2	A knowledge exchange platform to promote national and regional partnerships, to learn from other countries? experiences, and innovation, and share state-of-the-art knowledge products related to circular plastics framework strengthened and disseminated among the GPAP countries, and partners in the region, and other key stakeholders
Activity 3.3.2.1	Develop, deploy and maintain online spaces for stakeholder engagement and knowledge sharing

Component 4: Monitoring, evaluation, and replication

72. Monitoring and Evaluation (M&E) of the project implementation is one of the key elements taken into account in the project design phase. Given the large number of pilots and the geographical spread of these pilot project sites in the country, the M&E activities for the project will be more complex and extensive, requiring a higher level of input from the project. The ESMP (Annex S), Gender Action Plan (Annex R), and Stakeholder Engagement Plan (Annex Q) identified a number of risks at the pilot sites which will require specific activities be taken to mitigate and monitor these risks over the life of the project. M&E of the project activities, outputs and outcomes will be carried out in order to track the achievement of its targets and project performance. It will also contribute to the timely identification of risks so that corrective measures will be implemented in time. The results of the M&E will be additionally used to improve the project activities and cope with any changes that might take place in the project environment. The component will also contribute to the knowledge and information that can be shared with GEF implementing agencies and other GEF projects. Specifically the reports and findings produced by the M&E activities will be shared with the Guinea Current Large Marine Ecosystem project and the participating countries to ensure cohesion in policy and institutional arrangements which support the reduction of marine littering.

Outcome 4.1 Effective and efficient implementation of the project based on GEF and UNIDO requirements

73. To ensure success, the project logical framework has been developed using indicators that will be easy to monitor and report. The M&E system will be made particularly effective as it will include participatory elements for joint planning and activities sequencing as well a joint review with project stakeholders and beneficiaries. The National Expert hired under this output will provide assistance to MESTI/EPA for the ongoing monitoring of the project and provide training and guidance to MESTI/EPA staff for monitoring and evaluation to ensure institutional knowledge is retained within MESTI/EPA. It will seek among others to ensure full stakeholder participation by creating and progressively adopting effective mechanisms for the involvement of vulnerable groups such a women

and youth as well as small scale waste value chain actors (such as informal plastic waste pickers) and large-scale plastic industries alike, through the strategic partnership with the NPAP and other stakeholder groups. It is expected that such an approach will advance local participation and enable partners take ownership of the activities and results of the project and by so doing, give practical effect to the central transformative promise of the SDGs which is to leave no one behind. Under this output, UNIDO as the Implementing Agency (IA), MESTI, the GEF Operational Focal Point (OFP), the NPAP-GPAP impact measurement specialist and relevant project stakeholders at all stages of the project monitoring and evaluation activities in order to ensure the use of the evaluation results for further planning and implementation.

Output 4.1.1 The project and its activities are monitored and evaluated on a periodic basis in line with GEF, UNIDO and Government requirements

74. This output will involve the establishment of the PSC the project inception workshop and the approval of annual work plans.

Output 4.1.2. Project monitoring plan designed and executed

75. The M&E framework of the project will be designed and implemented in accordance with the established UNIDO and GEF policies, procedures and guidelines, and aligned with requirements of MESTI and the GPAP impact framework. Monitoring will be based on the output and outcome indicators defined in the results logical framework which also details the means of verification. The ESMP, Gender Action Plan and Stakeholder Engagement Plan developed for the project will be used to support the development of the monitoring plan to ensure risks identified are adequately addressed and reported on during the project.

Output 4.1.3. Mid-term review and terminal project evaluations conducted

76. Under this output mid-term and terminal project evaluations will be conducted. Lessons learned and thematic reports will be created and disseminated through established networks, including the NPAP-GPAP platform. The ESMP, Gender Action Plan, and Stakeholder Engagement Plan will form part of the basis for the MTR and terminal evaluations. Any deviations from these plans will be documented and corrective actions taken to ensure the project remains in compliance with these plans.

The related activities under Component 4 are given below:

Component 4: Monitoring, evaluation, and replication	
Outcome 4.1 Effective and efficient implementation of the project based on GEF and UNIDO requirements	
Output 4.1.1	The project and its activities are monitored and evaluated on a periodic basis in line with GEF, UNIDO and Government requirements
Activity 4.1.1.1	Establish a Project Steering Committee (PSC)
Activity 4.1.1.2	Hold a Project Inception Workshop within the first three months of project start and prepare an Inception Report.
Activity 4.1.1.3	Draft and approve annual work-plans on planned project activities and outputs.
Output 4.1.2.	Project monitoring plan designed and executed

Activity 4.1.2.1	Design and implement the monitoring and evaluation framework including the definition of impact indicators and the design of a detailed monitoring plan
Activity 4.1.2.2	Undertake day-to-day monitoring of the overall project activities as well as periodic progress reviews and associated effectiveness evaluations.
Output 4.1.3.	Mid-term review and terminal project evaluations conducted
Activity 4.1.3.1	Carry out an independent project mid-term external evaluation
Activity 4.1.3.2	Carry out an independent project terminal evaluation (at project completion).
Activity 4.1.3.3	Prepare Project Terminal report.
Activity 4.1.3.4	Carry out dissemination of lessons-learned and experiences at national, regional and global level

1a.d) Alignment with GEF focal area and/or Impact Program strategies

77. This project is fully aligned with the Chemical & Waste Program 1 on Industrial Chemicals which seeks to eliminate or significantly reduce chemicals subject to international agreements by supporting programs that address: chemicals and waste at the end of life; chemicals that are used or emitted from or in processes and products; and management of waste containing these chemicals. This project is aligned because it invests in circular economy approaches through promoting the adoption of improved production, consumption, and environmentally sound disposal patterns. The emphasis on developing private-public partnerships, outputs that address several supporting mechanisms such as policies, regulations, technical and capacity assistance and financing/business models and pilot demonstrations that address the entire plastic value chain, supports a broad shift to sustainable production and consumption patterns in the country especially in the private sector.

78. The project is also closely aligned with the International Waters focal area which recognizes the need to transform the entire life cycle of plastics to reduce marine plastic pollution. Through this project, funds will be invested in strategic circular economy plastic pilot demonstrations to promote the adoption of closed loop production and consumption patterns instead of traditional linear approaches. Regulatory strengthening and establishment of the RRS will enable better coordination between government ministries on policies that seek to reduce and eliminate plastic leakage into marine environments. The project will contribute to the reduction of plastic into the Gulf of Guinea and the ongoing work of the Guinea Current Large Marine Ecosystem (GCLME) programme. Specifically, the project will contribute to the Strategic Action Programme of the GCLME programme by assisting in the reduction and control of plastic waste reaching the Gulf of Guinea. By controlling and scaling up interventions to reduce on land plastic pollution, the project will reduce the amount of plastic that is carried down Ghana?s water bodies to the Gulf of Guinea. In addition, the project has a specific activity that will conduct research on the deployment of in-river plastic waste collection systems which would further reduce marine debris, litter and plastic waste from reaching the Gulf of Guinea. The project also engages with private sector and public sector through the strengthening of the NPAP platform and through the demonstration pilots. This project has identified important synergies between the International Waters and the Chemicals and Waste Focal Areas to address the challenge of marine litter and micro-plastics. Waste consisting of plastics can contribute to the POPs challenge as POPs contained in plastics can be released into the environment including oceans, if not properly managed. There are therefore clear linkages to the Stockholm Convention. Marine litter in the form of micro-

plastics to a significant extent, derives from land-based activities and should also be seen in the context of waste management issues dealt with under this Focal Area.

1a.e) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

79. The baseline projects described above are in response to the government?s implementation of the National Plastic Management Policy (NPMP) and the partnership that has been drafted between the GPAP and MESTI to establish a National Plastic Action Partnership. Several activities are underway by the NPAP to set the stage for broader action within the country on plastic action (Action Roadmap and Investment Strategy), however, execution of the recommendations and strategies developed through the NPAP?s work-plans are unlikely to occur without a concerted effort from the government and stakeholders including the private sector. Funds have not yet been mobilized in order to move forward with these forthcoming recommendations. Although the NPMP has received cabinet approval, and an implementation plan has been developed, the government lacks the institutional capacity to implement the scale of activities presented in the NPMP effectively and cost-effectively. The work of the project on building institutional capacity, developing targeted action plans to implement aspects of the NPMP, and the establishment of the RRS will enable the government to implement the NPMP.

80. The success of the project strongly builds on the cooperation of the private sector and household stakeholders which will be formalized with partnership agreements, including partnerships with leaders of identifiable groups in participating districts through the project. The project also plans to catalyze inclusive policy development towards creating an enabling environment for the transition to the circular plastic economy. This transformation is also expected to happen in the respective plastic and waste management industries. The establishment of the Center of Excellence is another step for supporting coordination with relevant industry sectors, industry groups, participating districts and the policy makers to facilitate R&D activities for circular economy innovations. The project and funding from GEF will enable the country to scale-up existing plastic waste management infrastructure and assist the country in developing localized circular economy innovations for plastic waste which can then be scaled up nationally regionally and internationally.

81. A major component of the project is knowledge management, awareness raising and coordination of plastic and circular economy sector stakeholders. The component will engage a large number of stakeholders through the NPAP platform and recruit more organizations and individuals to participate in the platform. The project and funding from GEF will enable more stakeholder awareness of the NPAP as well as the health and environmental impacts of plastic pollution. This component will scale-up existing knowledge platforms on plastics and circular economy and produce new knowledge and information which can be shared throughout the country and internationally. This information is valuable for all countries and regions since plastic pollution is a transboundary issue and has negative human and environmental impacts around the world. Without the project, there would not be comprehensive knowledge resources made about plastics and circular economy issues within the country and knowledge gained during the project would not be shared regionally and internationally.

82. The project components for which funding from the GEF is requested are strictly linked to the incremental costs identified. In the project implementation process, the pilot companies will provide co-financing to support the project implementation. In addition to the co-financing provided by pilot companies, the MESTI, GPAP, and others will also provide co-financing to support the project implementation. Table 2 below summarizes the contribution of the incremental cost to the baseline. Table 3 summarizes the incremental value of GEF involvement in the pilot projects. In Table 3, reduction means the elimination of plastic production thereby avoiding plastic waste generation. For example, Pure Home Water filtering water, there is no need to use plastic products for the system, consumers would not need to buy sachet water which would avoid the generation of plastic waste. Collection is the amount of waste that is physically collected from the environment or from designated collection bins/facilities. Collected plastic will be recycled, reused or remanufactured as appropriate. A sustainable and well-functioning plastic collection network is a key part of ensuring the successful

operation of recycling facilities and has been identified as a key barrier to investment in other circular solutions within the country. Recycling occurs when the collected waste is processed to flakes or pelletized for use in other products (food grade products, construction materials or other products). Some pilot company are al-ready performing ?waste-related? (collection/recycling) activities. The pilot companies provided their existing capacity for each type of activity (reduction, collection, recycling) and this capacity was considered as the baseline. The GEF project column introduces the total capacity of the activity once the pilot project is realized (GEF funds are being used to increase capacity, explore new business models, etc.) Therefore, the incremental amount was used to calculate the environmental benefits of the GEF funds.

Table 2: Contribution of the incremental cost to the baseline

Baseline and incremental cost reasoning	**Co-Financing**	**Alternative Scenario**	**GEF Grant (USD)**
Component 1: Establishing an enabling framework for a circular economy in plastics management			

The Government of Ghana has introduced the NPMP, however, lacks the capacity, effective legal framework and inter-ministerial coordination to effectively implement the NPMP. A roadmap for possible infrastructure and plastic waste systems is being developed, but complimentary actions will not be taken without the support of this project. Without the project, the government would be unable to fulfill the requirements contained in the NPMP.	The total co-financing of this project component is US $8,097,332. The government co-financing of this project component is US $7,295,000. Bilateral and other contributions make up US $722,332 while the private sector accounts for US $80,000.	The component is designed to improve and strengthen the policy and regulatory framework for the country to transition to a circular economy for plastics. The component includes the set-up of the RSS which will coordinate all plastic and circular economy related initiatives in the country which will lead to more effective plastics management country-wide. The policy and regulatory assessments and associated action plans will enable to government to move swiftly to implement the NPMP.	700,000
Component 2: Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management			

Stakeholders, including the private sector lack the capacity to effectively deploy advanced technologies for plastic waste management and circular economy innovation. Effective tracking of interventions and technologies that work to facilitate a transition to a circular economy in plastics would not take place without GEF funding.	The total co-financing of this project component is US $65,362,835. The government co-financing of this project component is US $31,065,000. Bilateral and other contributions make up US $699,167 while the private sector accounts for US $33,598,668.	The component develops and strengthens the technical capacity and skills of human resources of the plastic value chain to enforce new circular economy standards, upgrades existing equipment and conducts R&D activities in order to scale circular plastic innovations within the country. The component will also collect data and knowledge and support the dissemination of this information through national and international networks. The reduction, collection and recycling of plastic waste will also be scaled up significantly within the country as Table 2 demonstrates.	500,000 4,350,000
Component 3: Coordination, communication strategy and knowledge management among key partners and stakeholders for achieving Ghana?s NPAP-GPAP and NPMPs objectives			

Coordination of stakeholders in the country is conducted by the NPAP and bi-laterally through MESTI. Resources are required to continue bringing stakeholders into the NPAP platform in order for voices to be heard effectively and for knowledge to be disseminated throughout the country efficiently.	The total co-financing of this project component is US $3,148,502. The government co-financing of this project component is US $2,525,000. Bilateral and other contributions make up US $623,502.	The component will design and develop communications materials that will raise awareness about plastic waste within the country and opportunities that a circular economy will bring to the country. Consultations and capacity building events will allow stakeholders to contribute to the development of the circular economy and participate in knowledge sharing to implement circular practices in their organizations. The component compiles all information of the pilot projects and demonstration projects as well as state of art knowledge on circular economy practices and business models for national, regional and global dissemination.	800,000
Component 4: Monitoring, evaluation, and replication			
There is no overarching monitoring and evaluation plan for the project.	The total co-financing of this project component is US $1,390,000. The government co-financing of this project component is US $1,290,000. Bilateral and other contributions make up US $100,000.	The project is complex and requires the development of a comprehensive M&E plan such that information about the pilot projects can be shared with a broad set of stakeholders including the government. Data collected in this component is needed by the government to develop responsive policy so that circular economy pilot projects can be scaled-up and replicated throughout the country and lessons learned can be collected and distributed regionally and internationally.	320,000

Table 3: Incremental value of GEF involvement in the pilot projects

Company	Project period (year)	Baseline project (t/year)	GEF project (t/y)	Incremental (t/y)

Company	Project period (year)	Baseline project (t/year)			GEF project (t/y)			Incremental (t/y)		
		Reduction	Collection	Recycling	Reduction	Collection	Recycling	Reduction	Collection	Recycling
rePATRN	1	-	10 000	-	-	10 000	9 000	-	-	9 000
MSA	1	-	300	-	-	482	-	-	182	-
Pure Home Water	1	2	48	-	12	48	-	10	-	-
DAVERO ICE	1	-	-	-	152	-	-	152	-	-
Komenda Polymer Recycling Plant	2	-	4 220	4 220	-	15 600	15 600	-	11 380	11 380
COLIBA	1	-	6 000	780	-	6 360	780	-	360	-
ASASE - SESA - CWR	3	-	3 480	3 480	-	5 185	5 185	-	1 705	1 705
McKingtorch	1	-	5	5	-	25	25	-	20	20
IRECOP	1	-	-	2 512	-	-	14 512	-	-	12 000
NelPlast	1	-	345	345	-	1 382	1 382	-	1 037	1 037
UPPR	1	-	-	4 158	-	-	5 478	-	-	1 320
Eco-solve	1	-	-	-	329	-	-	329	-	-
Pyrolysis	1	-	-	-	-	900	900	-	900	900
Bacterial breakdown	1	-	-	-	-	10	10	-	10	10
Collecting plastics from waterways and beaches	1	-	-	-	-	300	-	-	300	-
Total		**2**	**24 398**	**15 500**	**493**	**40 292**	**52 872**	**491**	**15 894**	**37 372**
Total project impact for 4 years		**Baseline project (t)**			**GEF project (t)**			**Incremental (t)**		
		Reduction	**Collection**	**Recycling**	**Reduction**	**Collection**	**Recycling**	**Reduction**	**Collection**	**Recycling**

Company	Project period (year)	Baseline project (t/year)			GEF project (t/y)			Incremental (t/y)		
		8	97 592	62 000	1 971	161 170	211 488	1 963	63 578	149 388

1a.f) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

83. The project is expected to reduce marine littering by 13,051 tons during the project life and approximately 3,267 tons annually beyond the life of the project.

84. The project plans to avoid the releases of 8.92 gTEQ unintentionally produced POPs particularly through reducing the open burning of plastics at backyards, in households and dump sites. Further the project aims to facilitate the collection and environmentally sound elimination of waste PVC products and potential POPs-containing plastics (plastics with flame retardant additives, Poly-Urethane Foams, plastic parts of end-of-life vehicles, etc). The baseline studies of the NPAP concluded that approximately 14.96% of Ghana's plastic waste is disposed of by open burning annually. This means that 14.96 % of the collected plastics of the project would have been open burned. If these pilots did not exist, then this waste stream could go into the environment. The uPOPs calculations are based on the POPs Toolkit: https://toolkit.pops.int/ specifically Source Group 6 dealing with open burning processes: https://toolkit.pops.int/Publish/Main/II_061_OpenBurning.html?panel=1#SpryAccordion1. Since PVC in general has a higher POP impact factor, the PVC stream was calculated separately. The NPAP baseline study was able to calculate the fraction of plastic waste within municipal solid waste and therefore plastic waste values were used.

85. The GEF-7 Climate Change Focal Area Strategy aims to support developing countries to make transformational shifts towards low emission and climate-resilient development pathways with a GHG mitigation target of 1.5 billion t CO2eq. Without requesting financial resources from this focal area, the project will eliminate 378,410 tons CO_2e emissions based on enhanced collection of plastics and reducing opportunities for open burning of plastic wastes. The baseline studies of the NPAP concluded that approximately 14.96 % of Ghana's plastic waste is disposed of by open burning annually. Plastic collected and reduced during the GEF project period is 40,785.05 t/y. Fifteen percent of this is 6,117.75 t/y.

86. Based on the studies of the PPG and the selected pilot demonstration concepts the project is expected to reach the following global environmental impacts. To formulate these global environmental benefits, it was assumed that the full benefits would be realized after the first year since pilot project companies will need to upgrade equipment, policies and practices to ensure the benefits to the circular economy are realized. Therefore, the benefits were calculated for four (4) rather than the five (5) year project duration.

Avoided plastic marine litter

87. According to Maple Consult estimates 8% of the total plastic waste generated in Ghana ends up in the ocean[4][4]. The pilot projects will avoid 3 263 tons of marine litter annually. In total the project (4 years period) is expected to avoid the releases of 13 051 tons of plastic litter into the ocean.

The impacts of the project on marine litter is presented in the following table.

Avoided marine litter	**Baseline project**	**GEF project**	**Incremental**
1, Collected plastics from waste streams [t/a]	24,398	40,292	15,894
2, Amount of plastics decoupled from fossil feedstock [t/a]	2	493	491
3, Total amount of plastics diverted from waste streams [t/a]	24,400	40,785	16,385
Amount of marine litter avoided (8% of 3) [t/a] *	1,952	3,263	1,311

Total amount of marine litter avoided by the project (4 years) [t]	7,808	13,051	5,243

UPOPs releases mitigated

88. The baseline studies of the NPAP concluded that approximately 14.96 % of Ghana?s plastic waste is disposed of by open burning annually. It means that 14.96 % of the collected plastics of the project would have burned open on dump sites. The project has specific activities to collect PVC and potentially POPs containing plastics. The UPOPs releases of these highly chlorine content substances are higher than what is listed in the Dioxin and Furan Toolkit of the Stockholm Convention[5][5] . Therefore, as it is included in the Annexes of the toolkit the emission factors recommended by the study of Merk at al[6][6] were used to estimate the UPOPs release reduction of the open burning of this waste stream. The project is expected to reduce UPOPs releases by 8.92 gTEQ.

The calculation of the UPOPs releases are elaborated in the following table[7][7].

Saved UPOPs releases	**Category**	**Annual amount of waste**	**UPOPS emission factors [?g TEQ/t]**		**Annual UPOPS releases saved**	**Total UPOPS releases saved *(4 years)***
		[ton waste/year]	Air	Land	[gTEQ/year]	[gTEQ]
Baseline project	1, Amount of collected plastics from waste streams	24 398.00				
	2, Amount of plastics decoupled from fossil feedstock	*2.00*				
	3, Amount of PVCs and potentially POPs containing plastics	*0.00*				
	Open burning of plastics (15 % of 1+2)	***3,660***	**300**	**10**	**1.13**	
	Open burning of PVCs (15 % of 3)	***0.00***	**560**	**2 200**	**0.00**	
	Total				**1.13**	**1.13**
GEF project	1, Amount of collected plastics from waste streams	39 382.4				
	2, Amount of plastics decoupled from fossil feedstock	*492.65*				
	3, Amount of PVCs and potentially POPs containing plastics	*910.00*				

	Open burning of plastics (15 % of 1+2)	***5,981.26***	**300**	**10**	**1.85**	
	Open burning of PVCs (15 % of 3)	***136.50***	**560**	**2 200**	**0.38**	
	Total				**2.23**	**8.92**
Incremental	1, Amount of collected plastics from waste streams	14 984,40				
	2, Amount of plastics decoupled from fossil feedstock	*490,65*				
	3, Amount of PVCs and potentially POPs containing plastics	*910,00*				
	Open burning of plastics (15 % of 1+2)	***2,321.26***	**300**	**10**	**0.72**	
	Open burning of PVCs (15 % of 3)	***136.50***	**560**	**2 200**	**0.38**	
	Total				**1.1**	**4.39**

-

Reduction of greenhouse gas emissions

89. Through the burning of the plastic waste significant amount of GHG gases are released into the air. The proposed pilot projects would significantly reduce the amount of plastics that are open burned and could help avoid the release of 15,294.4 tons of CO_2 equivalent (CO_2e) annually. Further, with recycling, 79,308 t/a CO_2e could be saved. In total the project would achieve 94,602.4 tons of CO_2e release reduction annually. Until the end of the project implementation 378,410 tons of CO_2e is expected to be saved. The emission factors are based on UNIDO Toolkit for the design of waste management plans (UNIDO, 2020).

The calculation of the GHG emissions are elaborated in the following table.

Saved greenhouse gases	**Category**	**Annual amount of waste**	**GHG emission factors EF**	**Annual GHG emissions saved *GHG***	**Total GHG emissions saved *(4 years)***
		[ton waste/year]	[ton CO2,eq/ton recycled or open burned]	[ton CO_2,eq/year]	[ton CO_2,eq]
Baseline project	**Plastics ?** recycled	*15 500,00*	1.50	23 250.00	
	Plastics ? open burning	*3 660,00*	2.50	9 150.00	
	Total			**32 400.00**	**129 600.00**
GEF project	**Plastics ?** recycled	*52 872,00*	1.50	79 308.00	
	Plastics ? open burning	*6 117,76*	2.50	15 294.39	

	Total			**94 602.39**	**378 409.58**
Incremental	**Plastics ?** recycled	*37 372,00*	1.50	56 058.00	
	Plastics ? open burning	*2 457,76*	2.50	6 144.39	
	Total			**62 202.39**	**248 809.58**

Gender dimensions

90. The selected pilot demonstrations will provide incremental employment of 746 direct jobs and 9,864 indirect jobs.

Employment	**Formal**		**Informal**	
	Female	**Male**	**Female**	**Male**
Existing	196	200	2,877	1,582
GEF	419	327	6,055	3,629
Total	**615**	**527**	**8,932**	**5,211**

1a.g) Innovativeness, sustainability and potential for scaling up

Innovation

91. The project has selected pilot project companies along the plastic value chain that represent the three pillars of the New Plastics Economy. These pilots will develop and expand innovative solutions to design out plastic materials and include recycling and reuse as part of the production of new plastic materials. The project also promotes innovative solutions to improve recycling rates and strengthen company business models to improve the economic outcome of actors of the sector creating a sustainable value chain for sound plastic waste management. This approach will introduce (i) technologies, practices, and approaches that have been applied elsewhere in the region and which have proven successful and considered to be fitting for local or national circumstances in Ghana, as well as (ii) approaches that have not yet been tested in the region, but which are technically and financially feasible and sustainable. Partnering with private sector partners and GPAP and using the outputs from the NPAP Plastic Action Roadmap and Investment Strategy will serve as an important means to developing longer-term innovative approaches and technologies that are appropriate at the national and local levels. By operationalizing the PWMF for the establishment of the RRS and Center of Excellence, the Government of Ghana intends to invest significantly in the plastic waste management infrastructure in the country. This investment will attract additional private sector investment, especially at the local and national level, and will enable private-public partnerships in the circular economy to develop.

92. The project will also introduce a Center of Excellence dedicated to research and development activities and innovations that address hard-to-recycle plastics and circular economy innovations. In collaboration with the government and the private sector, the Center of Excellence will develop pilot projects to address these hard-to-recycle plastics and promote the application and scale-up of technologies that will enable the Government to transition to a circular economy for plastics in the country.

Sustainability

93. The legal framework and institutional and technical capacities developed by the project will ensure the long-term sustainability of outcomes. Involving all key stakeholders in relevant project activities, including local participation from the beginning of project formulation and throughout its implementation, demonstrating the effectiveness of circular economy innovations, supporting local and national capacity building, putting in place and demonstrating pilot projects along the plastic value chain, and developing public awareness of plastic pollution and its effects on human and environmental health will ensure the project is sustainable and supported nationally and attract international interest. The development of standards for the plastics and circular economy sector will further strengthen the sustainability of the project.

94. The degree of commitment shown by the private sectors partners to introduce BAT/BEP for environmentally-sound production processes and technologies enhances the sustainability and potential for scale-up of the outputs of the project. To support the sustainability of these business models and to create an enabling environment for other businesses to invest into this niche market, the required regulatory and institutional measures will be put in place. These measures will support the development and enacting policies to support the reduction of the production of single-use plastics (e.g plastic bag bans or taxes) and support innovative solutions that target prevention of single-use plastics.

95. The set-up of the Resource Recovery Secretariat will also enhance project outcomes. The set-up of the RRS will ensure that inter-ministerial collaboration occurs during the implementation of the NPMP. The Ghana NPAP will ensure coordination between relevant stakeholders, and also ensure that additional projects build on work that is ongoing or completed in the country on plastics and the circular economy. In addition, the oversight provided by the RRS will ensure there is a designated focal point within the government on circular economy within the country. The Center of Excellence will also act to improve the sustainability of circular economy interventions in the country and test new

circular economy innovations. The Center of Excellence will be responsible for conducting research and development within the plastic sector and plastic waste management sector to ensure circular plastic innovations are tested, piloted and commercialized and these innovations are de-risked for the private sector to raise additional capital from regional and international investors. The Center will assist the RRS in collecting relevant data from pilot projects and this data will be used to develop responsive plastic and circular economy policy and attract local, regional and international investment. The experience gained through the piloting and commercializing circular plastic technology will provide the Center with the expertise to identify promising technologies that could be piloted in addition to the existing pilots within the project.

Potential for scaling up

96. The large number of companies operating in the plastic and plastic waste management sector, coupled with the expected growth of the sector based on the implementation of the NPMP, would provide replicability potential at the local, national and regional level. The Government is committed to Ghana becoming a circular economy hub in Africa and the expertise obtained during the course of the project could be shared and broadcasted widely. The experience gained throughout the project can be very helpful for other countries in other regions of the world that have a plastic waste pollution problem. Approaches, procedures and business models developed and applied during the project for the introduction and implementation of BAT/BEP in the plastics and circular economy sector could be replicated elsewhere.

97. The experience gained through the piloting and commercializing of circular plastic technologies will provide the Center with the expertise to identify promising technologies that could be piloted and would assist in attracting investment into research and development within the plastic sector, the plastic waste management sector and circular economy innovations within the country. The project will also closely monitor ongoing circular economy initiatives at a national and regional level to ensure research and development is conducted in close cooperation with potential partners. Regular monitoring and feedback on results of the pilots will also ensure the right business models are applied and scaled-up. Over the duration of the project, the pilots will become an important resource to showcase circular economy efforts in the plastic sector in Ghana. These pilots will attract visitors and be used to showcase Ghana?s efforts to address plastic waste in the country. Field trips and site visits will be organized during the project to provide visitors with real world examples of circular plastic practices, technologies and innovations. In addition, the project will ensure that financial mechanisms and financial innovations for the deployment of circular economy technologies and practices are monitored and where necessary, partnerships are formed with financial institutions.

98. The demonstration activities during project implementation will develop a body of information, data and knowledge on circular economy practices in the plastic value chain. The project will also establish a centralized data management system that would collect the required information from different plastic value chains of the circular economy and make it available for analysis. Knowledge and information gained during the project will be widely distributed through the GPAP network and the UNDP WRP. Through these platforms, sustainable business models will be disseminated to a range of stakeholders who can use this information to design improved business models along the plastic value chain that contribute to the development of a circular economy.

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[1]UNEP (2016). Marine plastic debris and microplastics ? Global lessons and research to inspire action and guide policy change. United Nations Environment Programme, Nairobi.

[2] Eriksen, M., Lebreton, L. C., Carson, H. S., Thiel, M., Moore, C. J., Borerro, J. C. & Reisser, J. (2014). Plastic pollution in the world's oceans: more than 5 trillion plastic pieces weighing over 250,000 tons afloat at sea. PloS one, 9(12), e111913.

[3] Abreu A. and Pedrotti M. L. (2019) Microplastics in the oceans: the solutions lie on land. *Field Actions Science Reports* [Online], Special Issue 19 | 2019, Online since 01 March 2019, connection on 15 October 2019. URL: http://journals.openedition.org/factsreports/5290

[4] Baseline Analysis conducted by MAPLE Consult, September 2020, Presentation, Slide Nr. 10.

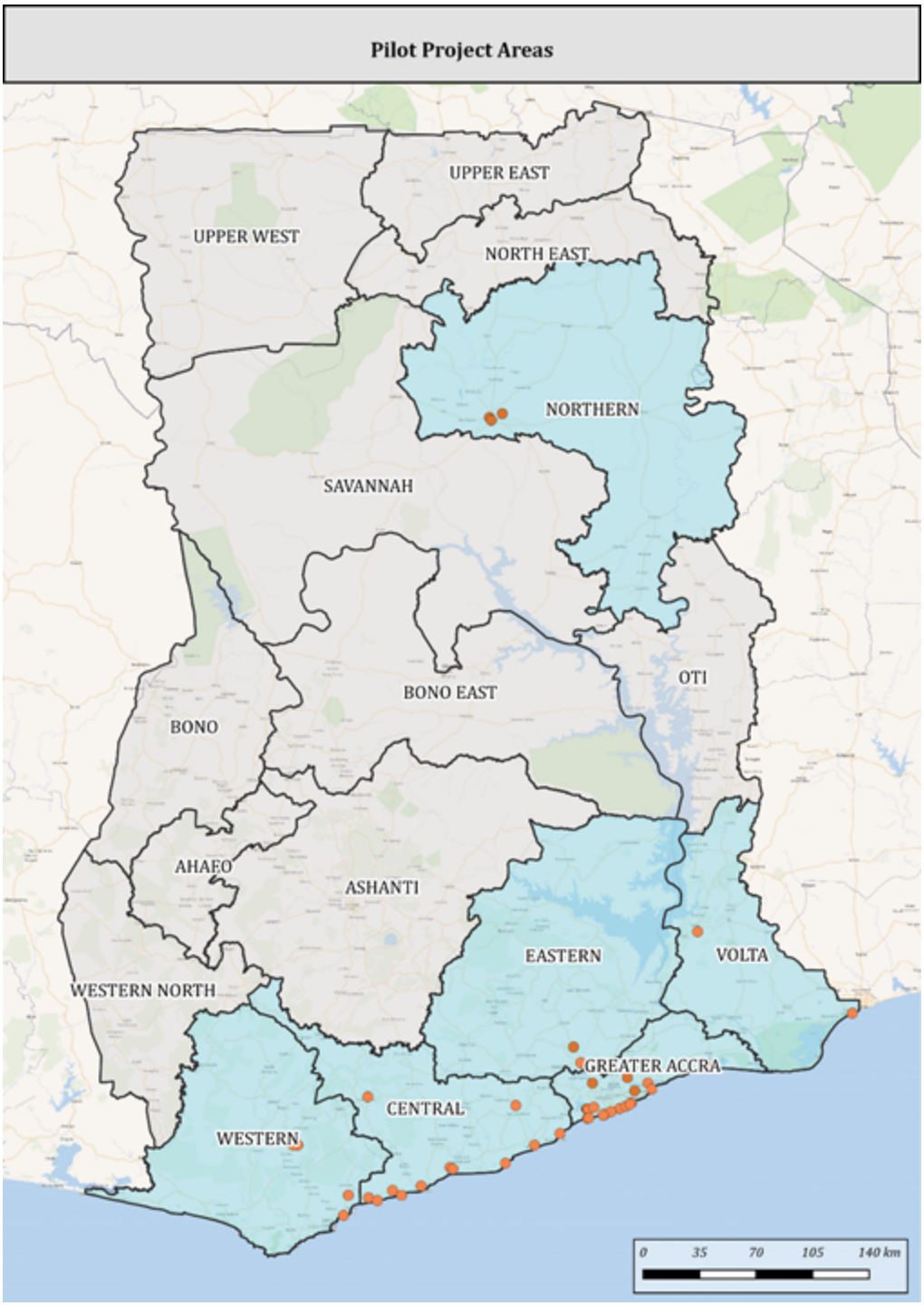
[5] http://toolkit.pops.int/Publish/Annexes/A_46_Annex46.html

[6] Merk, M., Schramm, K.W., Lenoir, D., Henkelmann, B., Kettrup, A. 1995. Determination of the PCDD/F Concentration in the Fumes from a PVC Fire. Organoholgen Compd. 23: 491-494.

[7] http://toolkit.pops.int/Publish/Main/Download.html

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.



Pilot projects	GPS Coordinates
Coliba Waste Recycling	N 05. 96108o W 000.10292o
Zoomlion Ghana Ltd - IRECOP	N 05.54080o W 000.22391o Elevation 24

UPPR	N 05.66603o W 000.07117o Elevation -89
rePATRN Ltd	N 05.68600o E 000.04461o
Pure Home Water ? Tamale (Stadium CREATE Station)	N 09.41467o W 000.86007o Elevation 649
Pure Home Water ? Tamale (Sub-metro CREATE Station)	N 09.39891o W 000.84986o Elevation 657
Pure Home Water ? Tamale (Taha Factory)	N 09.43564o W 000.78833o Elevation 443
Komenda Polymer Recycling Plant Ltd. (KPRPL)	N 05.06782o W 001.53339o Elevation 64
Maintenance and Sustainability Africa	N 05.68246o W 000.19508o Elevation 279
Mckingtorch Africa	N 05.70271o W 000.14177o Elevation 203
Asase Foundation ? CASH IT Recycling Plant	N 05.73703o W 000.09199o Elevation 95
Sesa Recycling	N 05.66300o W 000.05142o Elevation 71
City Waste Recycling (CWR) current Office	N 05.68496? W 000.27269? Elevation 226
City Waste Recycling CWR facility for recycling fridges	N 05.71145? W 000.28778? Elevation 206
City Waste Recycling (CWR) facility for recycling plastics	N 05.70661? W 000.28686? Elevation 139
City Waste Recycling (CWR) proposed site for new facility at Teacher Mate	N 05.90754? W000.39182? Elevation 295
Nelplast Ghana Limited	N 05.7363856? W000.0755489? Elevation 44
Davero Ice	N 05.864444? W000.365000? Elevation 71
Eco-Solve Innovations Africa Ltd.	N 05.58177o W 000.21229o Elevation 54

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

Not applicable.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none of the above, please explain why:

Please provide the Stakeholder Engagement Plan or equivalent assessment.

99. The project will have active collaboration with civil society and private sector entities for its activities. The participation of indigenous people is not foreseen during the project. Key project stakeholders have been engaged and consulted during the project development mainly on data validation, research activities and future engagement in the project. Relevant ministries have been met and consulted and close collaboration with the private sector was undertaken. The Ghana NPAP contributed to the development of the project design and given the NPAPs ability to convene multi-stakeholder feedback, the Ghana NPAP will continue to play a critical role during project implementation. The stakeholder list of the Ghana NPAP has been attached as Annex P. The Stakeholder Engagement Plan is attached as Annex Q and includes additional details not contained in this section. During the inception phase of the project, the current list of project stakeholders will be revised and validated to ensure actors from the entire plastic value chain and actors within the circular economy are fully engaged and aware of the project. Specific attention will be paid to the relevant public sector entities including Ministries that may be involved in upstream circular economy business models such as reuse and refill systems. Additionally, stakeholders representing the food and beverage, food service and retail (groceries, pharmacies, corner stores, etc.) industries will also be engaged and consulted given the project?s activities in the area of reuse and refill.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

Please refer to the attached Stakeholder Engagement Plan (Annex Q)

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor;

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

100. Gender equality and empowerment of women (GEEW) considerations were developed as an integral part of the project strategy in consideration of the Gender policies of the GEF, UNIDO and the Government of Ghana. In line with the UNIDO guide on gender mainstreaming for environmental management projects and UNIDO gender mainstreaming tools, a detailed gender analysis of the project was undertaken during the preparatory phase of the project to mainstream gender dimensions into the project elements. The complete Gender Analysis and Action Plan is provided in Annex R.

101. It has been noted that one of the key actions undertaken by the GEF relative to gender mainstreaming was to incorporate gender responsive approaches and indicators in all GEF projects. UNIDO, for its part, recognizes the significant positive impact on sustained economic growth and sustainable industrial development generated by gender equality and the empowerment of women. UNIDO adopted a policy on Gender Equality and the Empowerment of Women in 2009, which was further strengthened in 2019. As a consequence, the organization commits to engage all men and women equally in all of its organizational practices, policies, programmes and projects. In line with UNIDO?s Gender Equality and Empowerment of Women Strategy 2020-2023, considerations for gender mainstreaming, gender equality, and women?s empowerment in this project are as follows: i) ensuring women?s access to resources and technologies that enhance their health and well-being, ii) recognizing women?s role as key agents of environmental actions; iii) promoting women?s engagement, leadership and decision-making; and iv) having a fair representation of women and men?s distinct needs and priorities in the process.

102. To ensure gender mainstreaming is embedded and measured consistently, the NPAP Gender Advisor will be required for the duration of the project. The NPAP gender advisor will carry out a number of gender-related tasks, including but limited to implementing the NPAP Gender Strategy, leading the Gender Taskforce and also becoming the Environmental, Social and Gender Consultant for the GEF project to implement activities related to ongoing E&S and Gender monitoring and implementation of gender mainstreaming for the GEF project. Given the importance on upstream circular economy business models such as reuse and refill for the project, women?s role within this sector of the economy will be investigated as part of the project activities. Gender relevant outcomes

from Activities 1.1.2.2 and 1.1.4.11 will be incorporated into the project to ensure inequities are reduced and eliminated and women are empowered to participate and develop businesses within the upstream circular economy.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes
Closing gender gaps in access to and control over natural resources; No

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Does the project?s results framework or logical framework include gender-sensitive indicators?

Yes
4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

103. Organizations in the private sector are primary beneficiaries of the project, so ongoing engagement of the private sector is essential for the delivery of project GEBs. Outcome 2.1 (Capacity built among all relevant stakeholders to ensure integration and mainstreaming of circular economy approaches within plastics management), and Outcome 2.2 (Pilot projects implemented to deliver circular economy benefits) involve the explicit provision of technical assistance and investment in the private sector. Component 1 and Component 3 also integrate private sector engagement primarily through the Ghana NPAP platform and the associated Subcommittees of the NPAP. A list of the Ghana NPAP?s members, including private sector members can be found attached Annex P. A list of private sector organizations consulted for the project can be found in Appendix B of Annex Q. The engagement of the private sector is also outlined in Annex Q.

104. During the PPG phase of work, a call for pilot project concepts under Component 2 of the project was announced by UNIDO. The call invited key organizations, including the private sector, in the plastic value chain in Ghana to participate. UNIDO received input from the NPAP platform about private sector organizations that could participate in the call. The call for proposals received 14 applicants within the prescribed timeline. Two additional applications were received after the call for proposals was closed. UNIDO undertook the technical and financial evaluation of these applications based on an agreed set of criteria. In consultation with MESTI, 12 pilot projects were selected for support by the project. The list of organizations selected for funding are provided below:

Stakeholder	Role in the project
Maintenance and Sustainability Africa (MSA)	Executor, plastic waste collecting and awareness raising

COLIBA Waste Management Service Ltd.	Executor, plastic waste collecting
Komenda Plastic Recycling Plant	Executor, plastic waste collecting and product-grade recycling
Mckingtorch Africa	Executor, reusing of plastic waste
ASASE	Executor, plastic waste collecting and product-grade recycling, awareness raising
Zoomlion Ghana Ltd.	Executor, recycling hard to recycle plastic waste from MSW
Universal Plastic Product and Recycling Ghana Ltd.	Executor, plastic waste recycling
rePATRN Ltd.	Executor, food-grade recycling
Pure Home Water Ltd.	Executor, prevention of plastic waste generation
Eco-Solve Ltd.	Executor, replacement of plastic waste using new technology
NelPlast Ltd.	Executor, construction-grade recycling
Davero Ice Ltd.	Executor, prevention of plastic waste generation

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

105. Detailed environmental and social risks are outlined in the ESMP in Annex S. The following table provides an overview of the broad risks that may prevent the project objectives from being met. Specific COVID-19 Pandemic risks and opportunities have been added to a separate table.

Risk	Level	Mitigation
Impact of climate change	M	A major risk related to climate change is flooding of project waste management infrastructure. New infrastructure being developed for the project will be assessed and monitoring for climate risk as outlined in the Environmental and Social Management Plan (ESMP) of the project found in Annex S.
Inadequate plastic and plastic waste data collection systems may significantly reduce the impact of the legal measures of the Government to regulate circular plastic economy.	M	Data collection methodologies will be conducted in line with globally accepted practices and use both existing and emerging guidelines, including on the environmentally sound management of plastic waste. Ghana NPAP Baseline Model was developed and additional support will be provided to ensure data is collected to support the future development of the model and improve accuracy. Capacity building and training will support improved data accuracy.
On the long-term regulatory control of littering at public places will be reduced, consequently release reduction of plastic leakage to the environment will not be achieved.	M	Dedicated programs will be organized to facilitate behavioral change of the public and households on littering.

Difficulties in enhancing cohesion and cooperation between government ministries and other stakeholders for the achievement of the NPMP	M	Robust engagement conducted through the NPAP platform during the project will ensure stakeholders are able to provide feedback to the government on implementation of the NPMP. The set-up of the RRS will ensure national coordination between government ministries and set-up arrangements for sharing knowledge, information and data about plastics and circular economy.
Municipal government employees /inspectors will not have enough power to issue fines for littering. People will not pay the fines.	M	Capacity building and training of enforcement officers will support broader implementation of existing laws and regulations on plastic waste. At the same time, behavioral changes promoted through the project will reduce the amount of plastic waste littering. Support for pilot projects will also improve the collection of plastic waste and scale up critical plastic waste management infrastructure.
Many businesses in the plastic value chain will fail to comply with the new regulatory measures which will make the market environment for plastics challenging and distorted.	L	Inspection programs will be undertaken at different sectors of the plastic value chain to assure that businesses comply with the regulatory and inclusiveness requirements.
R&D project results may not fulfill the expectations or regulatory standards.	M	One of the catalytic roles of the Center of Excellence will be to facilitate private sector stakeholders to cooperate with research and development organizations and/or Universities prior to and during the R&D programs to minimize failures.
Large scale enterprises have the means to largely monopolize plastic collection and recycling sectors which may create market distortion	L	The project plans to assure a fair and equal competition for the medium and small-scale enterprises through partnership agreements along the value chain.
The financial mechanisms developed through the project may not be equally available for all sectors of the plastic value chain	L	Lessons learned from the pilot demonstration projects will be used to develop specific financial and protection mechanisms for different value chains. This is why demonstration projects are grouped along their specific target points of the CE.
Transition to circular plastic economy will significantly restructure current business models which may result business closures and increased unemployment	L	The project will strengthen plastic collection networks, household participation and recycling sector which require significant skilled human labor. Those who fall off from the linear plastic economy may have places in the increasing plastic collection networks or recycling sector.
The behavioral change of the public towards using recycled/repurpose articles will be slower than expected.	L	New innovative communication strategies would be developed beyond the conventional ones (leaflets, jingles, etc.), like on-line advertisements with opinion leaders, interactive docudrama series, video ads or introduction of a labeling system for recycled articles. Children and women will be particular foci to this end as they have large impact on how families/households behave.

Most of the local recycling initiatives stop at flake or granulates level. These products are generally exported which makes the local plastic recycling value chain vulnerable to international demand of recycled raw materials.	M	The project aims to build new business models to produce products from the recycled flakes and/or granulates. This will generate more value addition on the local market and makes this value chain less dependent to international market prices of recycled flakes or granulates.

COVID-19 Specific risks, mitigation and opportunity analysis

106. During the PPG phase of the project, the COVID-19 pandemic began. In Ghana, as of 26 November 2020, the number of confirmed cases was 51,225, the number of recoveries stood at 50,127 and the total number of deaths was 323. The following analysis was conducted to assess the risks of the pandemic to project implementation and the immediate mitigation measures that the project will use to overcome these risks. These considerations have been integrated into the ESMP and project activities. An opportunity analysis was completed on the risks to assist with longer-term considerations for the project and for pandemic planning in the country. The COVID 19 pandemic introduced unexpected but rapid changes in work routines, commercial activities, health care and other social practices within the country. This resulted in changes in the volumes and types of waste generated throughout the country, especially during the early days and as a consequence of various directives issued along with the regular presidential updates that were provided on the pandemic. Estimates suggest that the general impact of COVID 19 increase waste generation by approximately 20%. This estimate includes plastic waste streams, such as Single Use Plastics (SUPs). In Ghana, waste generation within commercial centers was reduced due to the stay-home orders issued by the government while residential waste generation increased as people stocked food, water and drinks and mostly worked from home with all schools closed. Household plastic waste generation also increased due to the purchases of hand sanitizers, disinfect-ants, gloves, disposable nose masks, and liquid soaps among others. Additionally, due to that fact that the stay home orders required restaurants and food service providers to provide ?takeaway? services, the use and disposal of straws, disposable food packs, cups, spoons and other cutlery increased. This coupled with the free packed food distribution programmes by government, NGOs, and other philanthropists increased the use and generation of SUPs. Many of the SUPs such as plastic gloves were also generated at health facilities as health staff applied enhanced safety practices in attending to all patients, including those who did not present COVID symptoms. The small and informal waste collection and processing individuals and companies were not classified as essential workers leading to a situation of inadequate waste collection. Furthermore, many of the small collectors were also concerned about the risk of contracting the virus due to an adequate capacity to handle hazardous waste as well as their lack of capital to procure appropriate PPE to protect themselves from the virus. This issue was presented at one of the NPAP meetings and proposals were put together to provide appropriate reusable PPE for some vulnerable waste collectors in the Accra Metropolis. The NPAP was able to provide various forms of support to informal waste pickers and waste collectors in Ghana through partner-ships with some institutions, notably WIEGO, the Environmental Service Providers Association (ESPA) and UNDP Ghana. The interventions were planned and executed as a response to the COVID-19 pandemic and with the goal of building the capacity of waste pickers and collectors to better protect themselves against injuries and illnesses. The interventions included, but not limited to, the provision of assorted food items, personal protective equipment, registration with National Health Insurance Scheme (NHIS), and cash grants to vulnerable workers. The project has considered the COVID-19 pandemic in the design of certain

activities including improving capacity building and enhancing training on PPE especially for the informal sector and ensuring that reuse systems can be effectively used during infectious disease outbreaks and pandemics.

Risk	Level	Mitigation	Opportunity
In-person training and capacity building sessions were postponed and cancelled due to COVID-19 induced restrictions.	M	During implementation, training and capacity building activities conducted through online meetings and recorded for future use.	Recordings of meetings, trainings, and capacity building sessions hosted online for stakeholders to access as needed. These recordings will democratize access to training opportunities and enable capacity building to extend beyond intended beneficiaries. Access to recordings provided through a secure and data privacy compliant system and provides a chance to collect demographic and sex-disaggregated data. On-line tests will also be developed for measuring the impact of the trainings.
Health and safety risk of exposure to COVID-19. Well-being and safety of project team, stakeholders and beneficiaries negatively impacted.	M	Follow guidelines and recommendations of government authorities and healthcare professionals. Additional capacity building for workers on proper health and safety procedures. Intensifying existing safety measures to account for COVID-19, such as by changing operating practices and schedules to ensure physical distancing and proper sanitation. Health and safety training to include pandemic and infectious disease considerations.	Development of workplace health, safety and infectious disease guidance and standards will provide employers and employees with standard operating procedures in the case of future pandemics. The guidance would educate workers about potential routes of disease exposure in the workplace, non-occupational risk factors at home and in community settings, workers? individual risk factors and controls necessary to address those risks. Improved opportunity for training and awareness on proper PPE usage.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The project management structure and institutional arrangements are provided in Figure 3 below.

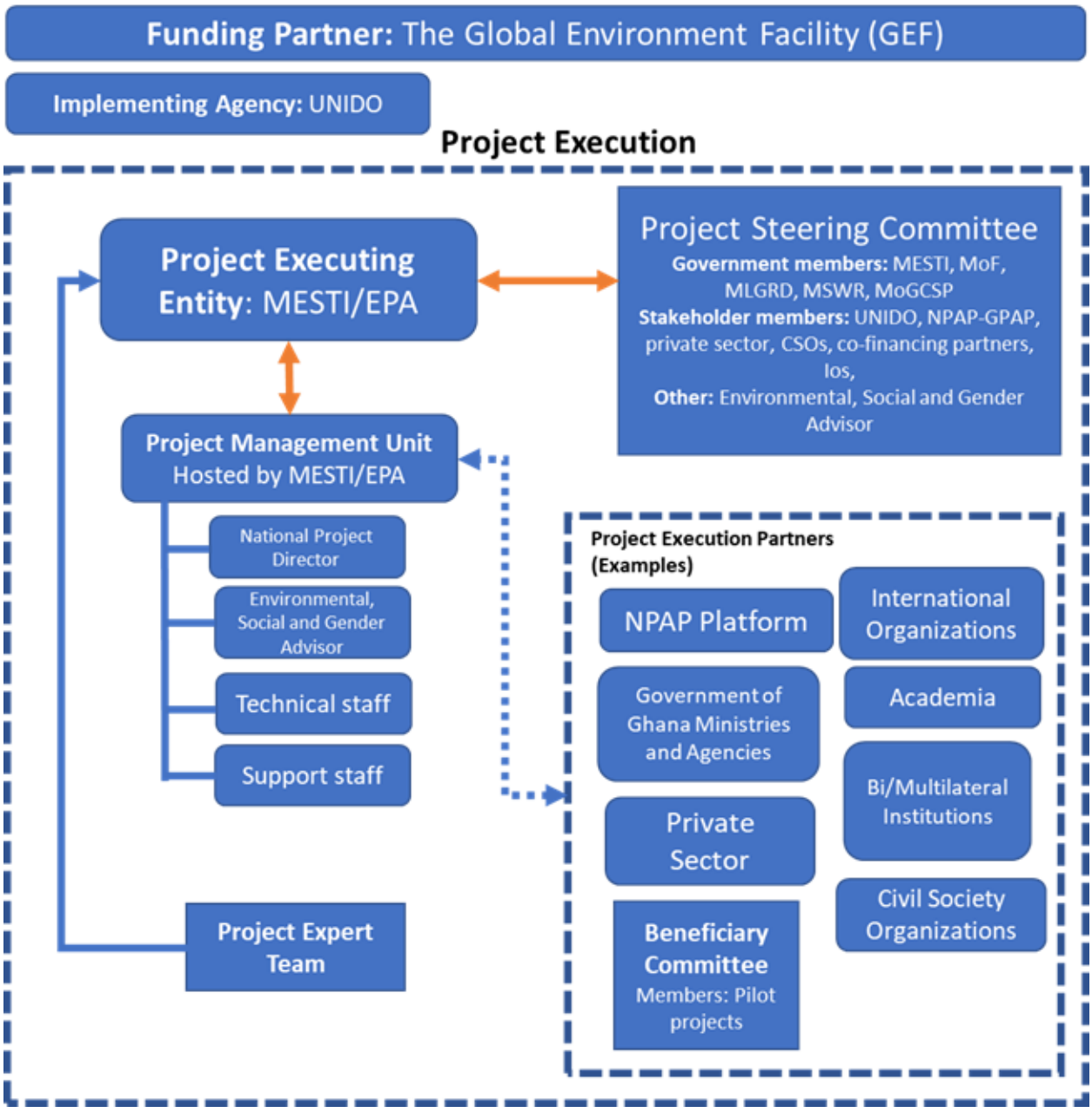


FIGURE 3: INSTITUTIONAL ARRANGEMENTS OF THE PROJECT

107. UNIDO is the GEF Implementing Agency (IA) for the project. As the GEF implementing agency, UNIDO will maintain the overall oversight on the project implementation, manage the overall project budget and supervise the project execution. A Project Manager will be appointed in UNIDO HQ to oversee

the implementation of the project and the UNIDO Country Office in Ghana may also provide in-country support. UNIDO country-level monitoring will be provided as part of the in-kind contribution of the organization to the project.

108. Full or partial title and ownership of equipment purchased under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the UNIDO Project Manager in consultation with project stakeholders.

Project Executing Entity (PEE)

109. The GEF Political Focal Point is within the Ministry of Environment, Science, Technology and Innovation (MESTI) and the GEF Operational Focal Point is within the Environmental Protection Agency (EPA), an Agency under the MESTI. In April 2016, MESTI underwent a Harmonized Approach to Cash Transfer (HACT) assessment which was conducted by the United Nations Development Programme (UNDP). Issues identified during the HACT assessment were followed up by UNIDO and sufficient reassurances were provided that the issues had been resolved. Based on the resolution of these issues, it was determined that MESTI/EPA would meet the requirements as the Project Executing Entity. MESTI/EPA will be the executing entity for the project and will be responsible for the full execution of the project under a contractual agreement with UNIDO as the implementing agency. The contractual arrangements will be processed through UNIDO?s procurement and finance division which will charge a Direct Service Cost (DSC) for the use of their services. Direct Service Costs (DSC) are costs for services that are rendered to deliver specific programme/project inputs such as: Procurement services (staff costs for procurement of services, equipment and supplies for a specific project or programme managed by procurement division) and Treasury and payments services (staff costs for travel advance and expense report processing, payroll processing, settlement of invoices). The DSC is outlined in the budget attached as Annex U. Annex V provides the Terms of Reference for the contractual agreement between UNIDO and MESTI/EPA.

110. As the Ministry coordinating plastics and circular economy related projects within the Country, MESTI will be the primary point of contact for the project. MESTI will report on project progress to the Project Steering Committee (PSC) and UNIDO. MESTI/EPA will execute project activities through a Project Management Unit and through bilateral or multilateral agreements with executing partners including: other government ministries, departments and agencies, international organizations, civil society organizations, and the private sector.

111. Importantly, MESTI will work with the multi-stakeholder platform, the Ghana NPAP and other stakeholder groups to solicit feedback about planned project execution activities to ensure buy-in from a range of stakeholders. The NPAP will contribute to project execution by providing recommendations to support the implementation of the NPMP based on results of findings from the NPAP Baseline Analysis, Action Roadmap, Investment Strategy and Gender Action Plan. MESTI will also work with the UNDP and leverage the Waste Recovery Platform when necessary to execute project activities.

Project Steering Committee (PSC)

112. The PSC will be established to review and monitor project execution progress, provide strategic advice, facilitate co-ordination between project partners, provide transparency and guidance, and ensure ownership and sustainability of the project results.

113. The Terms of Reference and the final composition of the PSC will be defined during the project start-up phase and will include representation from MESTI/EPA, UNIDO, MoF, MoGCSP, MLGRD, MSWR, NPAP-GPAP, CSOs and selected private sector representatives. Co-financiers will be invited to sit on the PSC to ensure additional oversight of the project. The chair of the PSC will be selected during the project start-up phase. The primary roles of the PSC are: (1) to provide overall guidance to the execution of the project; (2) to ensure good coordination among participating agencies and other organizations; and (3) to approve any substantial change or addition of new project outputs in response to the emerging issues. The PSC will meet at least once yearly to review and monitor the progress of the project implementation and to approve the work plan for subsequent years. Given the large number of stakeholders involved in the NPAP, the organization will participate in the Project Steering Committee to improve the coordination and communication amongst plastic and circular economy stakeholders. UNIDO will participate in the Project Steering Committee to promote integration and homogenous approaches vis a vis the NPMP.

Project Management Unit (PMU)

114. A Project Management Unit (PMU) will be set up in MESTI/EPA. The PMU function will end when the final project terminal evaluation report, and other documentation required by the GEF and UNIDO, have been completed and sub-mitted to UNIDO. The PMU responsibilities will include (1) assignment and supervision of project activities; (2) recruitment of national consultants; (3) coordination with stakeholders, donors, the IA, relevant national agencies and the private sector including the Ghana NPAP; (4) preparation of terms of reference (TORs) for project activities; (5) re-view of project progress reports and ESMP data, (6) supervising project procurement and financial resources (7) organizing and convening project coordination stakeholder meetings, and (7) review of project outputs and outcomes, and other tasks as may be required by the project. The PMU will be staffed with a National Project Coordinator (in-kind contribution of MESTI/EPA) and an Environmental, Social and Gender Advisor (jointly funded by the NPAP and the project), a Monitoring and Evaluation Expert, and other experts. Other support staff such as administrative and communication coordinators will be brought on board as required and as determined by the PEE.

Beneficiary Committee

115. The beneficiary committee will be composed of a representative from each of the pilot projects within the project. The beneficiary committee will report to the PMU and PSC as required and will allow pilot companies to provide feedback about the effectiveness of project execution and the effects of project activities on their pilot projects. Ghana NPAP will be invited to participate in the beneficiary committee given the broad range of stakeholders engaged in the NPAP platform which can efficiently and effectively collect feedback from beneficiaries beyond the pilot projects.

Project Expert Team (PET)

116. MESTI/EPA will recruit subject matter experts (circular economy policy experts, gender experts, waste management experts, R&D and innovation experts, and monitoring and evaluation experts) as required for initial staffing of the Resource Recovery Secretariat. These experts will form a Project Expert Team (PET) and assist the PEE with specific activities including: (1) Provision of technical support for the development of the circular economy policy framework and allied documentation, institutional strengthening, demonstration activities, technology selection, market promotion, awareness raising and education, results and experience dissemination, project monitoring and evaluation, replication program development, and project management; (2) Support for development of training materials; (3) Development of technical workplans for the RRS in consultation with stakeholders and line with the NPMP, NPAP Baseline Analysis, Action Roadmap and Investment Strategy; (4) set-up of the Center of Excellence and develop the framework for the selection and evaluation of pilot projects under the Centre of Excellence. The PET will liaise with the Ghana NPAP to ensure coordination and incorporate recommendations, where appropriate, from the Technical Committee, Steering Board and Subcommittee meetings.

117. The Midterm Review of the project will be under the responsibility of UNIDO, including recruitment of consultants. The Final Independent Evaluation will be managed by UNIDO, in coordination with UNIDO?s Independent Evaluation Division. The allocated budget for the project evaluation is USD 150,000, of which USD 60,000 is budgeted for the Midterm review and USD 90,000 for the Terminal Evaluation. As the midterm review and terminal evaluation falls under UNIDO's responsibility, the budget for this activity will be managed by UNIDO.

118. The present project is governed by the provisions of the Standard Basic Cooperation Agreement between the Government of the Republic of Ghana and UNIDO, signed on 2 December 1999.

Relevant GEF projects

119. The project will build on the past efforts in Ghana to address plastic waste, POPs, and UPOPs. Experience gained in the completed Capacity Building for PCB Elimination project regarding strengthening the legal framework will also be applied to this project. The project will also be coordinated with the current GEF-funded National Action Plan (NAP) for the Artisanal and Small Scale Gold Mining (ASGM) sector (for which UNIDO is the GEF Agency) and Development of Minamata Convention Initial Assessment (MIA) for Ghana regarding possible synergies and lessons learned in information dissemination, awareness raising, and project coordination. The project will also coordinate closely with the current Environmental Health and Pollution Management Program (EHPMP) in Africa, particularly regarding the e-waste activities such as situation analysis, value chain analysis, strategy development, legal framework strengthening, BAT/BEP and economic approaches, training, and demonstration activities. Especially regarding the pilot, experiences will be drawn from the following projects:

? Under regional project 104064 in ECOWAS UNIDO implemented a pilot initiative in Guinea on plastic waste management including the recycling and manufacturing of plastic bags in bags, ropes, civil engineering materials and household items. The overall objective of this pilot was to strengthen the environmentally sound management of plastic waste. Prior to investment and technology transfer, specific studies on the plastic waste value chain in Guinea were conducted, and capacity building activities were implemented to strengthen the collection and recovery segments of the sector. Pilot project comprised three

main activities: (1) eco-technological upgrade of the plastic recycler Sodiaplast in clean production (installation of a smoke treatment system), waste pre-treatment to optimize the production capacity from 9 to 12 tons per day; energy efficiency measures and workers safety. (2) capacity-building of operators of the plastic waste management sector : 64 associations and 536 waste collectors involved in trainings and awareness raising activities, equipped and brought in cooperatives to optimize the collection and supply of plastic waste to recyclers; (3) documentation and dissemination of BAT/BEP in plastic waste management: 145 trained in BAT/BEP on plastic waste management; 6 guidance documents developed to provide baseline data on the value chain and BAT/BEP to be encouraged

? Under project 100114 in Senegal for the sound management of solid municipal and hazardous waste in Senegal, UNDO implemented a pilot plant for sorting and pre-processing of plastic waste in Ziguinchor. The plastic waste treatment platform was implementing via a PPP, formalized in a Tripartite Convention between the national counterpart, the municipality and the private recyclers in charge of operating the plant. The pilot plant has the capacity to process 80% of the plastic waste produced in Ziguinchor, and will become a driving force for the rest of the value chain.

? Under regional project 104064 in ECOWAS, another pilot project in Niger executed by UNIDO improved and upscaled the processes of GVD, a recycling unit that produces pavement blocks from mixed plastics. Training in BAT/BEP for sound collection and segregation of plastic was provided to waste pickers and collectors; pilot plant benefited from technology transfer for production increase (from capacity of 2 tons/day to 10 tons/day) and improvement of products quality; and workers received health and safety at the workplace training and personal protection equipment.

? Under the regional project, Guinea Current Large Marine Ecosystem in ECOWAS, techniques for controlling marine littering will be shared with project stakeholders and lessons learned disseminated through the relevant stakeholder platforms. The circular economy policies developed by the project will assist Ghana with its contributions to GCLME project.

120. Agencies developing, designing and implementing projects under the GEF Focal areas of International Waters and Chemicals and Waste in Ghana will be consulted on an ongoing basis to ensure projects are coordinated.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

121. The project aims to implement aspects of Ghana?s National Plastic Management Policy (NPMP) and is consistent with Ghana?s 2006 Stockholm Convention NIP, including action plans addressing institutional and regulatory strengthening measures and measures to reduce releases from uPOPs, and national priority areas such as information, education, and communication to create awareness on POPs; improvement in the policy and legal framework; institutional strengthening and capacity building; and

development of appropriate and environmentally sound technologies, cleaner production, and promotion of BAT and BEP. The action plan on measures to reduce releases from uPOPs in particular includes a focus on the open burning of waste (including plastics).

122. The project is also consistent with to the Basel Convention Technical Guidelines on the Identification and Environmentally Sound Management of Plastic Wastes and their Disposal. At the fourteenth meeting of the Conference of the Parties to the Basel Convention (COP-14, 29 April?10 May 2019), amendments were made to Annexes II, VIII and IX to the Convention with the objectives of enhancing the control of the transboundary movements of plastic waste and clarifying the scope of the Convention as it applies to such waste. The Project will assist Ghana in implementing its obligations under these amendments. The Basel Convention requires Parties, including Ghana to ensure that hazardous and other wastes, including plastics, are managed (which includes collection, recycling, disposal) in an environmentally sound manner.

123. Ghana has also ratified a number of chemical and waste related Multilateral Environmental Agreements (MEAs) and adopted a number of codes and international declarations including the following:

? The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal;

? International Convention for the Prevention of Pollution from Ships (MARPOL);

? The Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter;

? The Vienna Convention on Protection of the Ozone Layer;

? Montreal Protocol on Control of Substances that Deplete the Ozone Layer;

? The Rotterdam Convention on the Prior Informed Consent (PIC) Procedure of certain Hazardous Chemicals and Pesticides in International Trade;

? The Stockholm Convention on Persistent Organic Pollutants;

? ILO Convention on the Safety of Chemicals at the Workplace;

? The Basel Convention Ban Amendment;

? London Amendment of the Montreal Protocol on Substances that Deplete the Ozone Layer;

? The Johannesburg Plan of Implementation on Environment and Development;

? The Rio Declaration on Environment and Development - Agenda 21; and

? The Strategic Approach to International Chemicals Management (SAICM).

124. The NPMP makes specific note of the following international agreements and conventions, including those pertaining to the ECOWAS protocols and agreements including:

? Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West, Central and Southern Africa Region (Abidjan convention), 2017

? Convention on Biological Diversity.

? Bamako Convention, 1998.

? Agenda 2030 for Sustainable Development (2015-2030)

? United Nations Framework Convention on Climate Change, 1992

? Convention on the Conservation of Migratory Species of Wild Animals, 1979

? Convention Concerning the Protection of World Cultural and Natural Heritage, 1972

? Convention on Wetlands of International Importance, Especially as Waterfowl Habitats, (Ramsar Convention), 1971

? Convention on Fishing and Conservation of the Living Resources of the High Seas ? Geneva, 1958

? Africa Convention on the Conservation of Nature and Natural Resources, 2014

? Africa Union Agenda 2063 (2013-2063)

? Gaborone Declaration on Sustainability in Africa, 2012

? Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1992

? The Rio Declaration and Agenda 21 on Environment and Development, 1992

? The Rotterdam Convention Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998

? The Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty, 2001

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

125. Knowledge management activities have been integrated throughout the project. More specifically, Component 3 of the project will be central to the implementation of knowledge management activities. Several publications, including posters, brochures, and peer reviewed journals, as well as video documentaries of project experiences will be prepared and disseminated among both national and international stakeholders and interest groups. In this regard, both the physical and virtual platforms of the

NPAP and the UNDP Waste Recovery Platform will be utilized for the dissemination of knowledge materials, in addition to the virtual platform to be created for the RRS under the project. This will ensure wide dissemination of the project lessons learnt and experiences to strengthen the national and global knowledge base on plastic circular economy best practices.

126. For example, the pilots? results and lessons learned for plastics management and circular economy practices will be disseminated widely through the NPAP platform and shared with GPAP countries to maximize the impacts and the gain from the project interventions both nationally and internationally. The knowledge shared with the Ghana NPAP is expected to reach other GPAP countries through the GPAP?s networks enable even greater distribution of knowledge about circular economy and plastics management to beneficiaries around the world. The project will ensure that the knowledge obtained through the implementation of the project in Ghana will be shared with other countries, especially in the West African region and the rest of the world. Ghana will also benefit from implementation of the Indonesian and Vietnam NPAP project as well as learn from other countries with initiatives related to plastic waste and marine plastic litter management.

127. The information shared by the pilot projects through regular updates provided to the Project Steering Committee through the Beneficiary Committee will provide further evidence-based information of project interventions that are yielding success for the private sector and which are not. This will allow the Project Steering Committee to alter project activities to better respond to pilots? needs and this information can be shared through the NPAP platform to amplify best practices.

128. The knowledge shared with the Ghana NPAP is expected to reach other GPAP countries through the GPAP?s networks enabling even greater distribution of knowledge about circular economy and plastics management to beneficiaries around the world. The project will ensure that the knowledge obtained through the implementation of the project in Ghana will be shared with other countries, especially in the West African region and the rest of the world. Similarly, Ghana will benefit from implementation of the Indonesian and Vietnam NPAP project as well as learn from other countries with initiatives related to plastic waste and marine plastic litter management.

129. As stated above detailed knowledge management activities have been outlined in Component 3, including promotional activities, awareness raising, exposure and exchange visits and training which are anticipated to be implemented with the support of the GPAP and UNDP knowledge management platforms. In order to ensure that lessons and experiences are well captured and widely disseminated, the project will provide support for MESTI to ensure that data systems of the RRS are robust enough to capture granular data about the performance of pilots? which can be analysed so as to help formulate responsive policies for the benefit of the actors. Data on the efficacy of pilot circular economy and plastics technology, tested at the Center of Excellence, will also establish a body of knowledge on circular economy innovations that lead to GEBs and this information will be distributed through partner organizations to reach the local, national, regional and international levels.

130. Actionable knowledge will also be shared through the IWLEARN tool of the GEF through webinars, blogs, participation in the annual marine conference and biannual IW conference. The project will also share information, knowledge and experiences with the Guinea Current Large Marine Ecosystem project, and where appropriate, contribute to meetings, papers and events of the GCLME project. Specifically, the

project will highlight how circular economy approaches within the country have lead to a reduction of marine litter and outline both the policy incentives and business models other countries can replicate to reduce and eventually eliminate marine littering. Information exchange between similar initiatives is expected to take place via accumulated knowledge at UNIDO Headquarters in Vienna, Austria, which will provide technical oversight to plastic waste and marine plastic litter management, and through engagement of qualified technical expertise that will be beneficial to the project in Ghana. Coordination with other UN agencies working on plastic waste and marine plastic litter globally will be ensured so that the best quality of services can be provided to the country and that experiences gained through this project are fully disseminated in Africa and beyond. UNIDO?s active membership within GPAP will continue to facilitate the exchange of knowledge with international partners and also enable UNIDO to stay informed about the most recent developments in terms of global project activities and newly developed technologies plastic waste and marine plastic litter management that can benefit the project.

131. A final project report and project lessons learned workshop will give other countries facing similar challenges regarding plastic waste and marine plastic litter management the opportunity to learn from the project outcomes and use a similar approach in their country. In this respect the project will enhance South-South cooperation. National Experts and International Consultants hired by the project will provide capacity building and training to MESTI/EPA staff and project stakeholders to ensure that knowledge about the technologies, policies and practices for a transition to a circular economy framework for the plastic sector is retained within the country. The capacity building and knowledge built up during the project will also enable the country to transition other sectors of the economy toward circularity.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

132. Project monitoring and evaluation (M&E) will be conducted in accordance with established UNIDO and GEF procedures. An effective monitoring and evaluation system which will ensure the sustainability of project impact will be designed and implemented. It will include SMART output and outcome indicators with periodic review processes to monitor the project implementation progress as well as the quality of project implementation. The main purpose of the M&E program will be to measure and document progress towards the achievement of project results, as well as the overall development objectives as evidenced by the related means of verification. In so doing, it will help in identifying underperforming activities and suggesting remediation actions. The system will monitor project risks early on and implement mitigation measures as and when needed, in order to ensure a coherent, coordinated and timely achievement of project objectives in accordance with the project results framework. It will further support the communication and coordination mechanisms of the project network by compiling the lessons learnt and experiences from the project, and disseminating this information among the primary stakeholders as well as the international community. Moreover, evaluation of performance will assist in assessing the relevance, effectiveness, efficiency, impact and sustainability of the project?s results to ensure that the project is well on track to deliver its development objectives. Gender issues and environmental and social safeguards will be fully integrated in the monitoring and evaluation of the project.

133. The M&E system will include participatory elements for joint planning and review with project stakeholders and beneficiaries. Effective mechanisms will be adopted for the engagement of project

partners throughout the duration of the project. This may include the involvement of project partners and stakeholders in annual project planning sessions, project Technical Working Group (TWG) activities, periodic field monitoring visits as well as in joint project review or evaluation sessions.

The Monitoring and Evaluation (M&E) Work Plan and Estimated Associated Budget are presented below:

M&E activity	**Responsible Parties**	**Indicative costs to be charged to the Project Budget (USD)**		**Timeframe**
		GEF Grant	**Co-financing**	
Design and implementation of M&E system	PEE in consultation with other project partners	0	20,000	Within the first six months
Tracking output and outcome indicators and general project progress, including ESMP and gender related indicators	PEE, UNIDO, local and international consultants and other project partners as needed	50,000	80,000	Regular project activity
Field monitoring visits and project reporting	PEE, UNIDO, local and international consultants as needed	50,000	200,000	Bi-annually
Annual project reporting	PEE, PSC, local and international consultants as needed	0	50,000	Annually
Annual joint work-planning session	PEE in collaboration with project partners	0	50,000	Annually
Independent mid-term review (external) and project response	PEE, UNIDO, Independent evaluators	60,000	80,000	Midpoint of project implementation
Independent terminal evaluation (external) and management response	PEE, UNIDO, Independent evaluators	90,000	100,000	At least two months before end of project

Knowledge management (technical reports, lessons learned, dissemination activities, thematic impact studies,etc.)	PMU, UNIDO, local and international consultants and other project partners as may be needed	70,000	500,000	As appropriate
Total indicative costs		320,000	1,080,000	

134. According to the Monitoring and Evaluation policy of the GEF and UNIDO, follow-up studies such as Country Portfolio Evaluations and Thematic Evaluations can be initiated and conducted within the scope of the M&E plan. All project partners and contractors are obliged to (i) make available studies, reports and other documentation related to the project and (ii) facilitate interviews with staff involved in the project activities. The M&E will specifically comply with the rules and regulations governing the M&E of UNIDO technical cooperation projects, in particular the UNIDO Evaluation Policy and the Guidelines for Technical Cooperation. Within the M&E plan, Integrated Results and Performance Framework (IRPF) indicators will be incorporated to ensure alignment with the UNIDO Medium Term Programme Framework (MTPF) 2018-2021 and its subsequent editions and support the implementation of the UNIDO Quality Assurance Framework (QAF) and the Evaluation Policy.

135. The project results, based on the agreed logical framework, will be monitored annually and evaluated periodically during project implementation as part of the planning processes undertaken by the project team in accordance with established GEF and UNIDO monitoring and evaluation procedures. The evidence of outputs as indicated in the Project Results Framework such as the number of participants in training activities, the release of reports and manuals, site visits at pilot facilities, etc. will confirm congruence of outcomes and objectives.

136. Day to day monitoring of project execution progress will be performed by the project team according to the work plan and identified indicators reported in the project's Annual Work Plan. The Project Team will inform UNIDO of any delays or difficulties faced during execution so that the appropriate support or corrective measures can be adopted in a timely manner. Periodic monitoring will be performed through site visits at the project demonstration facilities by UNIDO, the PMU and other members of the PSC wishing to join these visits. Field visit reports will be prepared to ensure adherence to the agreed work plan. M&E will be a collective function but in order to ensure effectiveness and accountability, an M&E Expert will be engaged as a member of the PMU who will be assigned a clear responsibility for routine day-to-day M&E functions including results (output and outcome) indicators tracking and collation of periodic project reports including the coordination of the annual GEF PIR report. Additionally, the M&E expert will provide project level leadership for the annual joint or participatory stakeholder planning sessions as well and provide guidance to other technical experts on the project in planning and reporting field activities so as to ensure that the right indicators are reported on. Where the project baseline is found to be inadequate, the M&E expert will support the PET to fill the data gaps by providing the needed guidance for collecting such unavailable data. Other functions of the M&E Expert will be elaborated during the recruitment process.

137. Annual project reviews will be done through PSC meetings which will take place once a year with a UNIDO representative present. The PMU may also organize PSC meetings, as required. The first of such meetings will be held within 12 months of the start of full project implementation or as agreed during the Inception Meeting. The terminal evaluation will be performed at the end of project life and will consider the implementation of the project as a whole, paying attention to whether the project has achieved its development objective and contributed to the GEBs. Thematic impact studies may be conducted during the project implementation, and particularly in the last year of implementation, to gather knowledge on the impact of various interventions.

Reporting Requirements

138. Regular reporting of the achievement of the project objectives and activities forms part of the monitoring and evaluation process. During project lifetime, the project team in conjunction with the PSC members and UNIDO will prepare and submit the following reports:

Inception Report (IR)

139. An Inception Workshop (IW) will be held within the first 3 months of project inception. The IW will serve as the official launch of the project to provide relevant stakeholders and project partners an overview of the project. The first year Annual Work Plan (AWP), including appropriate indicators and related means of measuring performance will be presented during the meeting. A detailed schedule of project review meetings and related M&E requirements and reporting activities, including the scheduling of the mid-term review and terminal evaluation, will also be developed during the IW. Subsequent meetings of the PSC will be planned and scheduled, too. The first PSC meeting should be held within the first 12 months following the IW. As an overall objective, the meeting will provide an opportunity to all partners to better understand and assimilate the goals and objectives of the project and take ownership of the project.

140. A Project Inception Report (IR) will be prepared at the beginning of project implementation and immediately following the Project Inception Workshop (IW). It will include: (i) a detailed Annual Work Plan (AWP) for the activities of the first year of the project; (ii) a fine-tuning of verifiable indicators and corresponding means of verification to effectively measure project performance during the targeted 12-month timeframe of the AWP; (iii) a detailed project budget for the first year of implementation, prepared on the basis of the AWP. The Inception Report will be prepared by MESTI/EPA and agreed with UNIDO.

Project Implementation Report (PIR)

141. The Project Implementation Report (PIR) is an annual management and monitoring process. It is an essential monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. After the first year of project implementation, the project team shall prepare and submit the GEF PIR in collaboration with MESTI/EPA and other project partners. The annual PIR is one of the mandatory tools used by the GEF for monitoring its portfolio and reviewing financial status, procurement activities, progress in implementation and project impacts. The project team will be required to prepare the PIR at the end of every reporting year for submission to the GEF through UNIDO as per standard procedures.

Project Terminal Report

142. During the last three months of the project, the project management unit will prepare the Project Terminal Report (PTR), which will be the last PIR. It will be a comprehensive report summarizing the results achieved, areas where results may not have been achieved and lessons learned. The Project Terminal Report and the Terminal Evaluation (TE) report will form the final project documentation package to be discussed with the PSC during the Terminal Project Workshop.

143. The Terminal Project Workshop will be held in the last month of project implementation. The TPW will be aimed at assessing the implementation of the project as a whole and if it has achieved its stated objectives and contributed to the broader GEBs expected within the project and the development of a circular economy framework within Ghana. Particular focus will be given to lessons learned and opportunity for sustainability and replicability of the project?s results.

144. The Project Terminal Report (PTR) will be the definitive statement of the Project?s achievements. This comprehensive report will be the overall evaluation of the project and will summarize all activities, outputs and outcomes of the Project, objectives met (or not met), structures and systems implemented, etc., paying particular attention to whether the project has achieved its immediate objectives and contributed to the GEBs. It will also serve as a source of lessons learned and will lay out recommendations for follow-up activities that may need to be taken to ensure sustainability and replicability of the Project?s activities. The project team will prepare the PTR during the last three months of the project lifetime. It shall be prepared in draft sufficiently in advance to allow review and technical clearance prior to the final PSC meeting.

Thematic Reports

145. As and when called for by UNIDO, the project team will prepare specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNIDO and will clearly state the issue or activities that need to be reported on. These reports will be used as a form of lessons learned exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered.

146. Additionally, Thematic Impact Studies may also be commissioned by the PMU or upon request by UNIDO. These impact studies will assist the project to gather detailed knowledge and lessons on the impacts of specific interventions implemented under the project. The Thematic Impacts Studies will be employed during the final year of implementation to for in-depth analysis of specific interventions to gather data for enriching the PTR.

Technical Reports

147. Technical Reports are detailed, comprehensive documents covering specific areas of research within the framework of the overall project. The key areas where Technical Reports are expected to be prepared during the course of the Project will be individuated during annual PSC meetings. Technical Reports may also be prepared by external consultants and will be used as working documents for the Project implementation as well as to disseminate relevant information at local, national and international levels.

Project Publications

148. Project Publications in the form of articles in academic and peer-reviewed journals, multimedia publications, informational texts or other forms of distribution, will represent a method for wide

dissemination of relevant results and achievements of the Project. Publications can be based on Technical Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if Technical Reports merit formal publication, and will also (in consultation with UNIDO, the governments and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Publications setting out methodologies adopted in this project, achieved results and lessons learnt will be distributed to the industry, governments, Parties to the Convention. Any publication will observe UNIDO and GEF advocacy guidelines.

Independent Evaluations

Midterm Review

149. The mid-term review (MTR) will be undertaken at mid-term (between the second and third year of project implementation) by an independent consultant to review the progress of each project activity and assess effectiveness of implementation according to the output and outcome indicators presented in the Project Results Framework. The Terms of Reference for this mid-term review will be prepared jointly by MESTI/EPA and UNIDO.

150. The MTR will assess the effectiveness, efficacy and timeliness of project execution, evaluate the effectiveness of the Partnership composition and of the interaction between partners, identify potential issues which could prevent optimal development of the project. This assessment will be extended to the administrative aspects and will also consider the provision of financial resources and co-financing provided by the project partners. The MTR findings could propose recommendations and remedial actions to be incorporated as improvement in the implementation strategy and execution for the remainder of the project?s duration, if necessary. This review will also highlight initial technical achievements, achievement of GEBs and lessons learned derived from project implementation. The final MTR report will be reviewed by UNIDO and presented to the PSC.

Terminal Evaluation

151. The terminal evaluation (TE) is under the responsibility of UNIDO and will, ideally, begin three months before the completion of the project and after the end of the main planned project activities. This will allow the independent consultant to carry out the evaluation when major activities are already completed but with the project team still in charge. The TE will focus on the same issues as the mid-term evaluation. However, since all the planned project activities set-out in the Project Results Framework will be completed at the start of the evaluation, a greater focus on identifying and extracting project impacts including the contribution in building local capacity, the achievement of global environmental goals, lessons learned, sustainability and replicability of project results will be reserved. This evaluation will be performed on the basis of the delivery of the project?s results as initially planned, eventually as corrected after the mid-term evaluation, if any such correction took place. The TE will also provide recommendations on how to disseminate products and outputs of the project most efficiently within and outside the country. The Terms of Reference for this evaluation will be prepared by UNIDO with support from its Independent Evaluation Division. The PMU and other stakeholders will be involved and consulted during the terminal evaluation process.

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

152. Broadly, the project will result in the creation of jobs within the circular economy and encourage enterprises operating within the circular plastic economy to hire more workers, conduct product innovation and ensure resilience of business models during a transition to the circular economy. First, companies will hire more workers. Secondly, product and service innovation will allow consumers to make more informed choices about their consumption of plastic products and alternatives. The support for market making activities such as the promotion of plastic alternatives and the adoption of circular economy standards for plastics products provides further opportunities to afford consumers a more sustainable consumption choice.

153. The circular economy provides significant opportunities for new forms of employment, especially for the most vulnerable members of society including women and the informal sector. Livelihoods that depend on plastics will be protected through training and upskilling offered in the project such that the transition to a circular plastics economy does not have a detrimental impact on the informal workforce operating in the plastics sector. This will make the transition from linear to circular economy a just transition. As a result of the Gender Mainstreaming Strategy outlined in the project, women will be provided with specific training and learning opportunities to encourage their active participation within the circular economy. Furthermore, the adoption of the gender mainstreaming strategy will take consideration of both men?s and women?s experiences, concerns, and needs. With the setting of targets for improving female participation in training in this project, as well as the enlargement of female participation in decision making, this project will contribute to an improved condition of gender equality within existing companies.

154. Due to training and communication activities within the project, behavioural changes are also expected. These behavioural changes will reduce pressure on the environment by encouraging Ghanaian citizens to think of plastics as having value and prevent its disposal in the environment. By incentivizing pilots to scale up operations in the project, additional plastic waste will be collected which will reduce the presence of plastics in communities and help prevent both UPOP and GHG emissions from the open burning of plastic waste. Through communication activities, the project will raise awareness of the health hazards of POPs and UPOPs which will help shift consumption patterns toward sustainable plastics alternatives.

155. These socioeconomic benefits will directly translate into global environmental benefits in the following ways:

? Behavioural changes and attitudinal changes will promote the use of plastic and shift the perception of plastics from waste to a resource with value.

? It will ensure that plastic waste is properly collected and sorted and sent to designated enterprises for recycling and upcycling.

? It will reduce the amount of plastic waste which is open-burnt and reduce both UPOPs and GHG emissions.

? Furthermore, proper collection promoted through the project and the accompanying pathways for plastic use promoted by the project will reduce the amount of plastic waste littered on land. Therefore, the amount of waste ending up in the waterways and ultimately in the marine environment will also be reduced.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification *

PIF	CEO Endorsement/Approval	MTR	TE
	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

Please see attached Environmental Social Management Plan (Annex S).

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Annex S - ESMP	CEO Endorsement ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Project Objective: To strengthen the national capacity of Ghana to transition to a circular economy framework that addresses plastic leakage into the country?s oceans and waterways, facilitates sustainable plastics management through operationalising the National Plastic Action Partnership (NPAP-GPAP) and the National Plastic Management Policy (NPMP; and ultimately ends marine plastic pollution and reduces the unintentional emissions of POPs (u-POPs).	Implemented regulatory and legal initiatives for the set-up of a circular economy framework for plastics Indicator 5.3 Amount of Marine Litter Avoided Core Indicator 6 Greenhouse Gas Emissions Mitigated (metric tons of CO2e) Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste Indicator 9.5 Number of low-chemical/non-chemical systems implemented particularly in food production, manufacturing and cities Core Indicator 10 Reduction, avoidance of emissions of POPs to air from point and non-point sources (grams of toxic equivalent gTEQ) Indicator 10.1 Number of countries with	ENV.1: Cumulative reduction of CO2eq emissions ENV.2: Cumulative tons of pollutants reduced or phased out	N/A	Comprehensive circular economy framework set-up and functional 1 LME with reduced pollution (GCLME) >13,000 tons marine litter avoided >378,000 tons CO2e 2 low chemical/non chemical systems implemented > 8.92 gTEQ 1 country (Ghana) >1100		

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Component 1: Establishing an enabling framework for a circular economy in plastics management						
Outcome 1.1: Legal and institutional framework realigned to support a circular economy in the plastics sector under Ghana?s National plastics management policy and the NPAP	Number of new or amended policies and legislation relevant to plastics and circular economy with GEEW responsiveness	POL.1: Cumulative number of new or revised policies adopted by policymakers	No specific regulatory framework for circular economy in the plastics sector	Circular economy in the plastics sector framework is developed and is gender-responsive.	Draft and final versions of regulation, guidelines, standards, SOPs Participants list (female/male)	Key stakeholders will actively participate in the process of regulatory improvement. Government of Ghana is committed to examine and endorse studies, draft legislation and other institutional arrangements developed under the project within the project timeframe.
Output 1.1.1: Situational analysis: Plastic flows assessed for community-level archetypes	# methodology developed for collection of data in plastic value chains	TCO.3: Number of toolkits and guidelines produced	No existing methodology for plastic data collection in value chains.	Methodologies developed	Project progress and evaluation reports Draft and final versions of the methodologies	Inaccurate plastic data collection may significantly reduce the effectiveness of the legal measures of the Government to regulate circular plastic economy.

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 1.1.2: Legal, and institutional capacities for a circular economy in the plastics sector assessed.	# completed assessment reports on legislative and policy initiatives for a circular economy	POL.1: Cumulative number of new or revised policies adopted by policymakers	Assessments of various plastic and circular economy legal and regulatory initiatives have not taken place. .	>2 assessment reports completed	Project progress and evaluation reports Draft and final versions of the assessment report and action plan. Meeting and workshop Minutes Participants list (female/male)	Strong cooperation between all interested stakeholders. Continuous cooperation between Government entities and private sector.

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 1.1.3: National implementation/actionable plans, and technical guidelines on bottom-up approach to circular economy in plastics and marine litter management developed in close cooperation with NPAP and within the context of the National plastics management policy (NPMP)	# of technical guidelines for ESM of plastic waste developed # of training workshops held (female/male)	TCO.3: Number of toolkits and guidelines produced TCO.1: Number of capacity building activities provided	No technical guidelines or standard operating procedures for incorporating circular economy practices for plastics available.	4 technical guidelines developed for ESM of plastics in a circular economy 4 training workshops held (recorded for later online use)	Project progress and evaluation reports Training participant lists (female/male) .	National and international consultants with the relevant qualifications available to develop technical guidelines and international standards can be adapted for Ghana Active participation of enforcement bodies in training. Continuous support from the Government and national partner institutions

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 1.1.4: Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures and quality standards	# of policy amendments/policy recommendations	TCO.3: Number of toolkits and guidelines produced POL.1: Cumulative number of new or revised policies adopted by policymakers	No specific plastic and circular economy standards in the country	>2 toolkits/guidelines provided >3 policy/strategy revised and updated	Project progress and evaluation reports Strategy document Draft and final versions of standards, implementation plans and strategies	High level political support to develop and implement a circular economy for plastics in the country. Stakeholders affected by a single-use plastic phase-out will participate and provide meaningful feedback to the Government
Output 1.1.5: A Secretariat/ national commission for plastic pollution established	RRS and Center of Excellence established Workplan for new institutions developed and agreed Number of men and women employed at RRS	GOV.1: Number of institutions established or strengthened	A formal government organization for supporting a circular plastic economy in Ghana is non existent	2 workplans developed At least 40% of employees at the RRS are women	Agreements that leads to the formation of the RRS and the Center of Excellence Progress reports Final and draft workplans	The Government will establish the RRS under the control of MESTI. The RRS will need workplans to fulfill its mandate.
Component 2: Capacity building and pilot projects, including public-private partnerships (PPP), and district and household partnerships, technology transfer using BAT/BEP for a circular economy in plastics management						

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Outcome 2.1: Capacity built among all relevant stakeholders to ensure integration and mainstreaming of circular economy approaches within plastics management	People trained (total) Number of men and women who participate in capacity building programmes	BUS.1: Cumulative/Annual number of firms with improved management practices . TCO.1: Number of capacity building activities provided	None	2 000 people trained At least 40% of each gender represented at each capacity building event >10 firms with improved management practices >5 capacity building activities	Progress reports Capacity building event report/minutes Participant lists Training materials	
Output 2.1.1: Stakeholders from the public sector including targeted, municipalities, industrial private sector associations, and public trained on respective policies, regulations and technical guidelines within the NPMP and NPAP National Action Roadmap, including the gender dimension.	% of primary enforcement agencies which have capacity to enforce the respective plastic economy related policies. # of inspections # of people trained on new circular economy related policies and regulations (female/male)	TCO.1: Number of capacity building activities provided	None	90% of primary enforcement agencies able to enforce plastics and circular economy policies 50 inspections carried out during project >2000 people trained on circular economy polices and regulations (female/male)	Project progress and evaluation reports Strategy documents, training material Workshop minutes and attendance lists Feedback from those trained Attendance records from training	Many businesses in the plastic value chain will fail to comply with the new regulatory measures which will make the market environment for plastics challenging and distorted.

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 2.1.2: Capacities of private sector strengthened at all stages of the value chain on new responsive regulations, procurement procedures or quality standards in view of implementing circular economy practices in the industrial sector	# of successfully completed R&D programs # of innovative products, collection points or business models entering the market		None	>3 R&D programmes completed to support pilot companies >3 new products/services entering the market	Project progress and evaluation reports Strategy documents, training material Workshop minutes and attendance lists Feedback from those trained Attendance records from training	The economy of Ghana will remain stable; R&D programs receive financial support; the Government will actively support novel approaches that move the plastic economy towards circularity
Outcome 2.2: Pilot projects and their supporting collection networks implemented to deliver circular economy benefits	Tons of plastic waste recycled Tons of marine litter avoided gTEQ U-POPs release reduction GHG release reduction (tons CO2e)	TEC.1: Number of new technologies developed or adapted TEC.3: Number of new technologies adopted	62,000 7,808 1.13 129,600 0 0	211,448 13,051 8.92 378,409 >2 new technologies developed or adapted >2 new technologies adopted	Project progress and evaluation reports	The Global Environmental Benefits of the intervention are realistic and achievable within project timeframe.

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 2.2.1: Sustainable financing, business models and Public-Private Partnerships (PPP), and district-community partnerships (DCP) developed and applied in the pilots	Number of business models developed Number of demonstration projects analyzed for economic and environmental efficiency Number of reuse/refill pilot project application received	TCO.4: Number of business plans developed	None	>5 business models for the circular economy developed (at least 2 for reuse/refill projects) >2 financial mechanisms developed >5 pilot project applications received	Developed business models and financial mechanisms	Partnership agreements among players in the plastic value chains will positively influence collection, reuse and recycling efficiency.
Output 2.2.2: Pilot projects for reducing plastics from fossil feedstock implemented	Tons of plastics avoided from fossil feedstock by pilot companies annually due to capacity provided	TCO.1: Number of capacity building activities provided	2 tons 0	493 tons avoided from fossil feedstock >2 new or improved green products	Project progress and evaluation reports	
Output 2.2.3: Pilot projects for reducing plastic leakage into nature implemented	Tons of plastics collected annually by pilot companies	TCO.1: Number of capacity building activities provided	24,398 tons	40,292 tons	Project progress and evaluation reports	Transition to circular plastic economy will significantly restructure current business models which may result business closures and increased unemployment

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 2.2.4: Pilot projects for demonstrating effective after-use plastic economy implemented	Tons of plastic recycled for food-grade plastic materials Tons of plastic recycled for products Tons of plastic recycled for materials	TCO.1: Number of capacity building activities provided	0 tons 15,500 tons 345 tons	9,000 tons 41,555 tons 1,382 tons	Project progress and evaluation reports	
Component 3: Coordination, communication strategy and knowledge management among key partners and stakeholders for achieving Ghana?s NPAP-GPAP and NPMPs objectives						
Outcome 3.1: Coordinated action and synergies with key international, regional and national partners and stakeholders ensured to achieve Ghana?s NPAP-GPAP and NPMPs objectives	Effective cooperation achieved among key international, regional and national partners	GOV.2: Number of actors participating in enhanced collaboration settings (clusters, networks)	Existing NPAP framework	Improved coordination with increasing number of actors	NPAP-GPAP reports	Increasing number of donors remain interested in supporting Ghana?s NPMP objectives

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 3.1.1 Enhance continuity of NPAP-GPAP Secretariat in Ghana to improve transparency, accountability and coordination of the various legislative instruments, capacity building efforts and pilot demonstration activities for a circular plastics economy framework	Number of expert groups established Number of reports generated regarding evidence-based policy options	CPO1. Global fora/workshops/EGMs organized	2 2 1	6 Expert/working groups facilitated to drive action across impact areas (policy, financing, innovation, metrics, inclusion, behaviour) 6 policy white papers to be prepared by 6 working groups (one each) 6 policy dialogues to introduce and discuss policy papers	NPAP Annual Impact Report / Steering Board Minutes of Meeting NPAP Annual Impact Report / working group action roadmaps Policy White papers / GPAP Website Minutes of meeting / post meeting briefs	Senior leaders across public, private and civil society will continue to prioritize plastic action Leading institutions will commit to co-developing and implementing recommendations and action plans Leading institutions are willing to engage with government on proactive policies to transform sector RRS will coordinate an inter-ministerial body to engage with private sector and civil society on policies needed to drive change

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 3.1.2 Enhance capacity of RRS for coordination of circular economy and plastics partnerships, cooperation frameworks and agreements within the NPMP implementation objectives.	Number of partnership agreements signed Training curricula developed for national regional and international professionals and private sector	TCO.1: Number of capacity building activities provided	None	At least 5 partnerships/ cooperation agreements signed At least 100 people trained (50% of whom are women)	Signed partnership agreements, MOUs, contracts, permits etc. Progress reports Training reports Training curricula Training manuals	Partnership agreements will enable the government through the RRS have effective oversight of activities within the plastic management space and lead to effective Organizing capacity building workshops for regional and international partners will entrench Ghana?s position as a centre of excellence in circular economy whiles it makes project lessons and experiences available to partners in the region.
Outcome 3.2: Communication strategy in place to raise awareness about NPAP-GPAP, NPMP and relevant plastic topics	Number of actors reached	REA.1: Number of actors reached (by kind of actor)		>20000	Dissemination lists/ website views	

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 3.2.1: Communication strategy along the CE perspective developed and implemented to raise awareness on the negative impacts of the plastic pollution on natural environmental systems (including marine litter, POPs, GHG emissions and human health) towards consumers behaviour change	Number of communication strategies developed Number of communications materials (reports, press releases, newspaper articles, radio shows, etc) specifically developed on gender issues in the circular economy	TCO3. Toolkits and guidelines provided	None	One strategy developed >15 communications materials developed		Effective communication strategy will change public behavior in two areas, first the littering will be reduced, secondly more recycled/repurposed articles will be sold on the market. Situational analysis will help to confirm the baseline information and identify potential partners in support of the communication strategy
Outcome 3.3. Knowledge management set up to share project information and knowledge locally, nationally and globally	Number of actors gaining awareness/knowledge	KASA.1: Number of actors gaining awareness/knowledge on UNIDO knowledge areas		>20,000	Demographic data from outreach activities	

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 3.3.1: Effective knowledge management done through the RRS, NPAP-GPAP, UNDP platform sharing experience, raising awareness, promoting replication and best practices on the national level	documentaries prepared (Video, radio, written) per year Exposure visits organized for partners/ stakeholders	TCO3. Toolkits and guidelines provided	None	Twenty documentaries (Video, radio, written) created At least 20 exposure visits organized to pilot projects and Centre of Excellence project sites	Knowledge material developed Final knowledge materials Event participant lists Event agendas and event reports Exchange platform demographic data	
Output 3.3.2: A knowledge exchange platform to promote national and regional partnerships, to learn from other countries? experiences, and innovation, and share state-of-the-art knowledge products related to circular plastics framework strengthened and disseminated among the GPAP countries, and partners in the region, and other key stakeholders	Number of digital knowledge exchange platforms created or upgraded	TCO1. Toolkits or guidelines developed	No digital platform exists for the RRS UNDP Waste Recovery Platform will be launched in 2021.	At least 1 digital platform created or upgraded	Functional platforms Progress reports Social media handles	Digital platforms aid information dissemination and creates traction for an issue
Component 4: Monitoring, evaluation, and replication						

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Outcome 4.1: Effective and efficient implementation of the project based on GEF and UNIDO requirements	Project on schedule Project on budget Project meets objectives % Project Team that participate in gender sensitization and took the ?I-know gender? training	IRPF 4.8c: Percentage of personnel completing UNIDO training programmes in a given year. Disaggregation by purpose of trainings: Mandatory ?I know gender? course or equivalent.	N/A	Project on schedule Project on budget Project meets objectives 100% of project team takes ?I-know gender? training	Project documentation Training certificates Final monitoring plan	Continuous support from the Government and national partner institutions
Output 4.1.1: The project and its activities are monitored and evaluated on a periodic basis in line with GEF, UNIDO and Government requirements	Annual work plans		None	Annual work plans completed	Project reporting and project correspondence ESMP reports and monitoring Project webpage	Continuous support from the Government and national partner institutions Sufficient commitment and participation by national experts and mentors
Output 4.1.2: Project monitoring plan designed and executed	Monitoring and evaluation framework for the project Gender indicator framework for M&E plan developed and adopted		None	Monitoring and evaluation framework designed and deployed 1 gender responsive indicator framework for M&E developed and adopted		

Interventions	KPIs/Indicator	IRPF Indicator	Baseline	Target End of Project	Sources of Verification	Assumptions
Output 4.1.3: Mid-term review and terminal project evaluations conducted	Mid-term review and evaluation completed Terminal evaluation report		None	Midterm evaluation report completed Terminal evaluation report completed (including evaluation on execution of gender action plan and all related gender dimensions)		

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Please find Annex B: Responses to Project Reviews uploaded as an attachment.

Comments from GEF Council		
	Comment	*Answer*

Comments from GEF Council		
	Comment	***Answer***
France	Funding, in part via a deposit fund for eco-taxes levied on plastics, seems solid. However, it is unclear whether it includes investment in infrastructure, especially for pilots. Given the large amount of the project, we expect it is the case.	The pilot projects funded by this project will receive funds for investing in infrastructure and for upgrading existing equipment and infrastructure to bolster plastic collection and recycling capacity. The Government of Ghana has committed USD 40 million in co-financing for the project. This USD 40 million will be used to execute activities that have been outlined in the NPMP Implementation Plan such as developing infrastructure along the entire value chain for plastics management in cooperation with relevant ministries and the private sector. For further details, please see description of pilot projects in Annex N.

Comments from GEF Council		
	Comment	***Answer***
	The duration of the project, 5 years, seems relatively short in view of the program and the scale of the project. The implementation schedule will have to be scrutinized.	Through Component 1, the project will build the capacity of the Government of Ghana and stakeholders to ensure the benefits of the 5-year project are continued into the future. The activities related to the establishment of the Center of Excellence and the Resource Recovery Secretariat in particular (Output 1.1.5) will ensure that a circular economy framework for the plastics sector is coordinated across the government into the future. The NPAP will also play a key role in coordinating the efforts of stakeholders in the development of a circular economy for plastics. The NPAP platform brings together organizations including government, international organizations, civil society organizations, the private sector and others to discuss, coordinate and recommend actions the government can take to implement the NPMP effectively. As a key partner in this project, the NPAP will help contribute to the long-term success and sustainability of the project interventions and scale-up. This institutional capacity building will provide a strong foundation for Ghana to become a circular economy leader in West Africa and tackle plastic waste on a regional basis in cooperation with West African states. Please see the

Comments from GEF Council		
	Comment	***Answer***
	The project must attract the private sector, but there is no economic assessment at this stage, which could demonstrate the profitability of the sector to set up. No company, apart from Veolia and Seureca, is mentioned as a potential partner, either in Ghana or in other countries where plastic sectors exist.	The pilot projects selected for inclusion in this project represent private sector organizations from across the plastic value chain and are providing significant co-financing during project implementation. The NPAP is a key partner for including the private sector in the project. The NPAP platform brings together a number of private sector actors from along the plastic value chain including: Nestl? Ghana Ltd., Coca-Cola West Africa, Dow?s Packaging and Specialty Plastics Business in Africa, Ghana Plastic Manufacturers Association (GPMA), Association of Ghana Industries (AGI), and the Environmental Service Providers Association. The NPAP Expert Panel also includes representatives from these organizations in addition to: City Waste and Recycling, Borla Taxi and Tricycle Association, rePATRN, and the Accra Compost and Recycling Plant. Please see Annex N for a list of the pilot projects selected for inclusion in the project.

Comments from GEF Council		
	Comment	***Answer***
	Maybe real partnerships with countries that have developed these sectors should be considered, rather than a simple exchange of good practices. But no example seems to be cited.	The Ghana NPAP has linkages into the GPAP. The project activities on knowledge management will facilitate knowledge transfer from GPAP countries (Vietnam, Indonesia, Nigeria and any future GPAP countries) to Ghana.
	In Ghana, GIZ is fairly present in the waste sector, in particular in electronic waste. Synergies could be identified in order to benefit from their experience.	The GIZ was consulted as part of the project. A problematic area for the GIZ e-waste project has been the disposal of PVC insulation stripped from electric wires. The project will fund a Center of Excellence (Component 2), which will address the issue of hard-to-recycle plastics including PVC. Other activities in the project will help support the regulatory and policy infrastructure that supports the GIZ?s ongoing projects in the plastics value chain and circular economy solutions.

Comments from GEF Council		
	Comment	***Answer***
	On the content: the project goes beyond Circular Economy, because it deals more broadly with waste management and reduction, without however putting them at the same level. However, it seems essential to integrate source reduction, alternative materials, end-of-life waste treatment and the implementation of large-scale selective sorting to obtain convincing results. Pilots should integrate all these dimensions, as well as the logistics linked to transporting waste to recycling facilities (and therefore the associated carbon impact). The feasibility of developing such an industrial sector in Ghana, to international standards, does not seem really evaluated (for example based on comparable cases in Ghana or similar countries). As such, the environmental aspects will have to be considered in the definition and implementation of the pilots.	The pilot projects selected for the project are located along the plastic value chain and help link plastic waste management with the creation of value-added plastic products. The pilots were selected based on their contributions to the three pillars of the New Plastic Economy and the project framework has been structured to support the pillars. 1) Create an effective after-use plastic economy (Output 2.2.4); 2) drastically reduce the leakage of plastic into natural systems and other negative externalities (Output 2.2.3); and 3) Decouple plastics from fossil feedstocks (2.2.2). Developing and/or adapting international standards for Ghana in line with these three pillars will also take place in standards development activities in Activity 1.1.4.3, 1.1.4.4 and 1.1.4.5. Importantly, the selected pilot projects were also organized into groups that include both formal and informal collectors and aggregators and recyclers. This grouping was done to secure plastic supplies and ensure a consistent throughout at recycling facilities. The Government of Ghana has allocated USD 40 million in co-financing for the project. These funds will be invested into activities outlined in the NPMP Implementation Plan

Comments from GEF Council		
	Comment	***Answer***
	the project?s output on education, which could be an entire component, is underdeveloped. Significant resources are required to bring about necessary behavior change. Many innovative initiatives are proposed in the project, but they are not directly related to the education of the young. The Ministry of Education does not seem to be mentioned among the stakeholders.	The project helps to support the ongoing projects in Ghana on education and behavioural change for plastics and circular economy. Of specific note is the ongoing work of the Norad-1 project on integrating educational materials on plastic waste in relevant curricula in Ghana?s school system at various levels. Education and training activities as identified in Component 3 have been designed with these ongoing projects in mind. Component 3, Output 3.2.1 (Communication strategy along the CE perspective developed and implemented) will also distribute educational materials to engage citizens of Ghana, including youth. The NPAP platform has also convened a sub-committee on Education, Awareness Creation & Community Engagement that will investigate how youth can be engaged in the circular economy and plastics policy conversation. Knowledge sharing is also an integral part of Component 3. Lessons learned and knowledge materials from the project will be widely disseminated through knowledge sharing platforms which will be accessible to all.

Comments from GEF Council		
	Comment	***Answer***
	Job creation, which can be very important in this kind of sector, does not seem to be completely evaluated. Particular attention must be paid to working conditions.	Job creation and retention is a key focus of the project. The project will provide funding to pilot projects to invest in expansion of existing operations, fund new product lines, upgrade equipment, and invest in circular economy innovations. These investments will result in the creation of 746 new jobs (419 for women and 327 for men). The investments will also assist these companies in retaining an existing 396 jobs. In total, the project will directly impact 1,142 jobs. With the scale up of these enterprises, informal sector jobs will also be created. During project implementation, 9,684 informal jobs will be created (6,055 women and 3,629 men). The investments will also support an existing 4,459 informal jobs. The project will provide occupational health and safety training in additional to pandemic and infectious disease training to the workers to the informal and formal sector. During project implementation, working conditions will be monitoring and capacity building exercises will be conducted to ensure local, national and international best practices are being followed. Measures to train these workers are provided in several Outputs including Output 1.1.1, Output 2.1.1 and Output 2.1.2. Further details

Comments from GEF Council		
	Comment	***Answer***
	performance indicators only refer to the GEF indicators, without proposing project-specific indicators.	The project has adopted a number of project-specific indicators that will be monitored and reported on throughout the project. At a high-level, the project specific indicators are as follows: ? Cumulative number of new or revised policies adopted by policymakers ? Cumulative number of new standards adopted or implemented ? Number of institutions established or strengthened ? Number of capacity building activities provided ? Number of new or improved green products made available or used A detailed list of project specific indicators can be found in Annex A: Project Results Framework.

Comments from GEF Council		
	Comment	***Answer***
	The prerogatives of the Secretariat to be created and hosted within the Ministry of the Environment could perhaps be extended to the global circular economy. The funding of this Secretariat is not defined.	The funding of the Resource Recovery Secretariat is outlined in Output 1.1.5. The mandate of the RRS is broader than plastics and extends to circular economy. The project will fund specific aspects of the RRS set-up including the development of workplans, budgets and financial mechanisms for the dispersal of funds for circular economy R&D investments. The co-financing for the RRS set-up will come directly from the Government of Ghana as described in the NPMP Implementation Plan, through annual Government of Ghana budget allocations to MESTI and from the Plastic Waste Recycling Fund (PWRF). The MESTI will be allocated 50% of the proceeds from the PWRF to manage plastic waste. A joint memorandum outlining arrangements for the management of the Plastic Waste Recycling Fund (PWRF) was submitted and approved at a Cabinet meeting held on 15 October 2020. Through the activities under Output 1.1.5 the RRS will develop a workplan which will include circular economy considerations.

Comments from GEF Council		
	Comment	***Answer***
Norway/Denmark	We very much welcome this project. We would like to mention that Norway is currently supporting work by the Secretariat of the Basel, Stockholm and Rotterdam Conventions on marine plastics in Ghana (through Norad). We would strongly encourage this project to build on our project in terms of the legal and institutional gap analysis and recommendations, the draft national plastic waste inventory, as well as the pilot tests in the packaging, fisheries and wastewater sectors	The Norad-1 project team has been consulted extensively and reviewed the CEO Endorsement document. Several of the activities under Component 1 were designed based on consultation with the Norad-1 project team to ensure consistency between the projects. Norad-1 pilot projects related to training, education and curricula development were considered in Component 3. The results of the draft national plastic waste inventory were also considered in the project. During the PPG phase, a plastic waste mass-flow was conducted for the project. Other mass flow studies have been conducted in Ghana with varying results based on assumptions used by the study proponents. This project seeks to address discrepancies between project studies by collecting plastic and plastic waste data on an annual basis for the completion of the NPAP baseline and the national plastic waste inventory. One of the pilot projects selected for inclusion is a Water ATM project which was also under consideration for funding through the Norad-1 project. Due to the different timelines of the Norad-1 project and the GEF project, there is an opportunity to integrate the results and/or activities of the Norad-1 project during

Comments from GEF Council		
	Comment	***Answer***
	While the PIF states that the project ?will also enable Ghana to comply with its obligations under the Stockholm, Basel, and Rotterdam Conventions?, there is little else on how Basel is relevant (no mention of the amendments to the Basel convention agreed at the last COP); perhaps the PIF was drafted prior to COP 14?	Section 7 outlines how the Basel Convention is relevant to the project. The project is consistent with the Technical Guidelines on the Identification and Environmentally Sound Management of Plastic Wastes and their Disposal. At the fourteenth meeting of the Conference of the Parties to the Basel Convention (COP-14, 29 April?10 May 2019), amendments were made to Annexes II, VIII and IX to the Convention with the objectives of enhancing the control of the transboundary movements of plastic waste and clarifying the scope of the Convention as it applies to such waste. The Project will assist Ghana in implementing its obligations under these amendments.

Comments from GEF Council		
	Comment	***Answer***
	The project aims among others to ?operationalize? the National Plastic Management Policy (NPMP); the potential issue here is that as it is currently drafted it can be seen as having some shortcomings that would translate into challenges during the implementation phase. While the recommendations provided in the legal report vis-?-vis the NPMP will hopefully be taken up in finalizing the NPMP, perhaps this GEF project could anticipate some shortcomings and adjust activities accordingly/leave a door open for further refinement of the NPMP (if that is at all possible given national decision-making procedures), which could fall under output 1.1.2 of the GEF project. One important recommendation is that the NPMP would need to envisage specific measures aimed at preventing waste and incentivizing reuse.	A revised NPMP (dated March 2020) and Implementation Plan (dated March 2020) was approved by Cabinet on 21 May, 2020. The shortcomings of the original draft NPMP were noted during the PPG phase. Consultation with the UK FCDO and Norad-1 project team and documentation reviewed also pointed to these shortcomings. The project activities have been designed to address these shortcomings where possible. For example, Activity 1.1.1.5: Develop and strengthen institutional structures for intragovernmental and inter-agency cooperation on the exchange of plastics related data ? addresses lack of cohesion between government departments on plastic data sharing arrangements. Activity 1.1.2.1: Assessment and strengthening of NPMP implementation strategy will develop an action plan to resolve NPMP shortcomings. The NPMP Implementation Plan contains a number of activities that seeks to prevent waste and incentivize reuse. The NPMP and Plan will promote source separation and support the private sector to establish and operate recycling and remanufacturing enterprises. Importantly, the NPAP is developing a Plastic Action Roadmap and

Comments from GEF Council		
	Comment	***Answer***
	Further regarding the NPMP?s operationalization and as also recommended in the above-mentioned legal report, it is recommended to prioritize development and adoption of by-laws and other secondary legislation (including a clear timeline for this). This is beyond the scope and timeframe of the Norad supported project and could thus be included in the GEF project (notably under output 1.1.3).	The project has a number of activities that support the NPMP and the development of guidelines, standards and procedures that could be adopted used secondary legislation to support the NPMP. These include: Activity 1.1.3.1 Development and training on technical guidelines for plastic value chain activities and actors Activity 1.1.3.2 Development and training on Standard Operating Procedures for plastic value chain activities and actors Activity 1.1.3.3: Strengthen municipal enforcement bodies to control public littering Activity 1.1.4.8: Develop schedule of proposed increases in fines for littering in public places

Comments from GEF Council		
	Comment	***Answer***
	Component 2 could build on the outputs from the NORAD project component-tackling source, i.e. the list of stakeholders and mapping of designs, processes and best practices in the fisheries, wastewater and packaging sectors, as well as the lessons learned from the pilot projects, once implemented. Perhaps some of the pilots from the NORAD project (if successful) could be replicated/scaled-up as part of the GEF supported project.	Ongoing consultation with stakeholders including the Norad-1 beneficiaries will occur as part of the Stakeholder Engagement Plan. It has been specifically noted that successful Norad-1 pilot projects may not continue unless additional funding is found. The GEF project has anticipated these potential shortfalls and designed activities to be flexible to ensure the continuation of successful pilots. The GEF project would build on the results of the Norad-1 project during implementation. For example, the Norad-1 project has investigated the use of water ATM?s pilot projects. The GEF project will fund a water ATM pilot project and lessons learned and potential synergies will be explored during implementation.
	The project baseline scenario could build on the more detailed baseline studies conducted in the NORAD project. It would be important to avoid inconsistencies in these reports	The results of the Norad-1 baseline scenario and gap analysis were incorporated into the baseline analysis of the project. The project used the NPAP Baseline Analysis as the basis for GEB calculations and during the course of the project, the NPAP baseline will be used.

Comments from GEF Council		
	Comment	***Answer***
	The PIF refers to ?Others NORAD / Basel, Rotterdam, Stockholm Convention In-kind Recurrent expenditures 500,000? in C, indicative sources of Cofinancing but does not specify any role in Table 2. In general, we would appreciate specifying the role of the BRS more clearly in the project document.	Co-financers will sit on the Project Steering Committee to provide oversight of finances committed to the project. The BRS and Norad will be engaged and consulted to ensure cohesion between the GEF project and the ongoing Norad-1 project.

Comments from GEF Council		
	Comment	***Answer***
USA	While the project document appropriately assesses many elements of the baseline scenario, it underrepresents the importance of several key partners and sectors, including informal waste pickers, the Ministry of Sanitation and Water Resources, and Metropolitan and Municipal Authorities. The informal waste collection sector is becoming more organized and represents a large workforce, many of whom are women and children that depend on waste for their livelihoods. ?As collection systems are perhaps the most fundamental pillar of project success, this element needs considerable rethinking. Additionally, the current proposal does not fully reflect the current growing and undersupplied demand for/use of recycled plastics by the existing plastics industry in Ghana?	Appendix B of Annex Q: Stakeholder Engagement Plan lists the stakeholders that were engaged and consulted during the course of project development. Ongoing engagement through the NPAP platform will occur to ensure stakeholders are adequately consulted during project implementation. The project will support coordination activities between the ministries involved in sanitation, environmental issues and plastic waste. Output 1.1.1 seeks to address the lack of plastic and plastic waste data sharing arrangements between different government ministries. Output 1.1.5 will address inter-ministerial coordination issues on plastic and circular economy by setting up the Resource Recovery Secretariat. Both the MSWR and the MMDA?s are listed as lead and collaborative implementation partners in the NPMP Implementation Plan. Informal sector waste pickers will be engaged during the project and provided with training opportunities during project implementation so they can fully participate in the transition to a circular economy and are not left behind. The project has prepared specific capacity building and strengthening activities for the informal sector through Activity 2.1.1.5 and Activity

Comments from GEF Council		
	Comment	***Answer***
	Overall, the proposed activities of this project are so broad it seems likely they will only superficially touch the various pillars proposed by the National Plastics Management Policy (NPMP). Greater attention to alignment with NPMP may result in greater project outcomes, as well as more sustainable capacity gains over time. For example, focusing the projects enforcement efforts on the enforcement-related challenges to operationalization of the 2015 Ghana EPA directive on producing oxo-biodegradable plastic material, in lieu of on new enforcement measures, seems both productive and cost-effective.	During project preparation a detailed policy and regulatory barrier analysis was conducted. Please see Annex J. Based on the review, a number of activities were developed that will support greater cohesion between government ministries on regulatory efficiency to support implementation of the NPMP. The project will improve the capacity of enforcement officers to enforce existing regulations (Activity 1.1.3.3 and Activity 2.1.1.3). The 2015 oxo-biodegradable directive has been the subject of intense debate. According to the UNEP, the behaviour of oxo-degradable plastics once released to the environment are poorly understood. There is significant risk that these types of plastic will not degrade completely and will instead add to the quantity of microplastics produced. There are also noted difficulties associated with recycling oxo-plastics since it affects the quality and recyclability characteristics of plastics. The NPMP Implementation Plan specifically outlines an activity to address this concern by conducting a detailed assessment of the environmental and human health risks of different classes of biodegradable additives.

Comments from GEF Council		
	Comment	***Answer***
	?We would also advocate for a more consolidated focus on plastic recovery and collection, processing, and distribution to markets, which could feed existing demand, provide product to catalyze new demand/markets and significantly reduce the amount of plastic waste entering the ocean compared to the meager ocean plastic pollution reduction projected?	The pilot projects selected for demonstration are focused on improving the efficiency of existing collection systems and scaling up collection systems under Output 2.2.3, Activity 2.2.3.1 (Komenda Polymer Recycling Plant, COLIBA ASASE - SESA ? CWR, McKingtorch and NelPlast) and improving the quantity of plastic processed for recycling under Output 2.2.3 and 2.2.4 (Komenda Polymer Recycling Plant, ASASE - SESA ? CWR, McKingtorch IRECOP, NelPlast, UPPR) The project has also organized selected pilot projects into groups that include collectors, aggregators and recyclers. This grouping was done to secure plastic supplies and ensure a consistent throughout at recycling and remanufacturing facilities.

Comments from GEF Council		
	Comment	***Answer***
	Additionally, the project?s proposed national plastics secretariat, appears to duplicate the Resource Recovery Secretariat planned to be established by Government of Ghana. Finally, we would appreciate additional information on the correlation between the secretariat/commission proposed in the project and the Resource Recovery Secretariat	Clarification of the roles of the Resource Recovery Secretariat and the NPAP Secretariat are provided in Output 1.1.5. The RRS will be established by MESTI and will be a government run organization dedicated to implementation of the NPMP and a circular economy framework for the country. The NPAP is a multi-stakeholder platform that will support the RRS with the implementation of the NPMP by focusing on three strategic pillars: convening and curating stakeholder communities, generating new insights and action roadmaps, and matching high potential solutions with financial resources. The work of the two organizations will be truly complementary and the work of NPAP will facilitate broad stakeholder consultation and support the decision making of the RRS.

Comments from GEF Council		
	Comment	***Answer***
	We also suggest that close attention be paid to the feasibility of proposed cofinancing activities from the Plastic Wastes Management Fund. While the government established the revenue scheme in 2013 and has collected tax since inception, to our knowledge no funds have yet been disbursed.	A joint memorandum outlining arrangements for the management of the Plastic Waste Recycling Fund (PWRF) was submitted and approved at a Cabinet meeting held on 15 October 2020. The PWRF will be jointly managed by the Minister for Local Government and Rural Development, the Minister for Finance and the Minister for Environment, Science, Technology and Innovation. The adjustment would ensure that MESTI would become the beneficiary of 50% of the funds from the PWRF for the purpose of managing plastics.
Germany	Financing a sustainable plastic management system as part of a circular economy will require substantial financial resources. Germany would recommend identifying possible risks that might hamper the mobilization and targeted spending of financial resources, based on the experience gained so far with the establishment of the Plastic Wastes Management Fund (PWMF) and the collection of the eco-levy on imports of electric and electronic goods.	Please see risks outlined in Section 5 ? Risks. The mobilization of the Plastic Wastes Management Fund will occur as part of the project through the MESTI.
	?Germany would also recommend clarifying if and how such resources shall be used for enhancing a national plastic recycling industry in which the informal sector, together with small and medium-sized companies, plays a prominent role.?	The Center of Excellence will supervise the pilot projects. The role of the Center of

Comments from GEF Council		
	Comment	***Answer***
	?Germany would recommend clarifying how the pilot projects will consider experience gained in ongoing projects, e.g. for developing a collection and reverse logistic for PET, incorporating the informal sector in Kumasi (GIZ in cooperation with Environment360) and how the pilot projects will contribute to a structural change in the sector. Synergies with the ongoing projects on sustainable management of e-waste, implemented by the German and Swiss cooperation, are explicitly encouraged to develop viable options for improving recycling options for plastics from e-waste?.	Excellence is to support the pilot projects with experience, information and data gathered from ongoing projects and scientific novelties. Most of the pilot project groups demonstrate a plastic value chain (from the informal sector at the collection level through the plastic waste collection to the recycling facility) providing synergies for sustainable and efficient operation after scaling up. The GIZ was consulted as part of the project. A problematic area for the GIZ e-waste project has been the disposal of PVC insulation stripped from electric wires. The project will fund a Center of Excellence (Component 2), which will address, among others, the issue of hard-to-recycle plastics including PVC. Other activities in the project will help support the regulatory and policy infrastructure that supports the GIZ?s ongoing projects in the plastics value chain and circular economy solutions.
Comments from the GEF Secretariat		

Comments from GEF Council		
	Comment	***Answer***
	?Consider how to include a pilot activity that incorporates policies to reduce the production of single-use plastics (e.g. plastic bag bans or taxes). The pilot (v) is more about awareness-raising than directly limiting production?.	Under Activity 1.1.4.2, the project will develop a single-use plastic phase-out strategy to discourage the production, import, and use of single-use plastics. To support the phase out of single use plastics, the project will develop the requisite policy and technical infrastructure to ensure alternatives for single use plastics will exist if/when single use plastics are banned or taxed. For example, under Activity 1.1.4.3, Activity 1.1.4.4, Activity 1.1.4.5 standards will be developed and/or adapted for plastic alternatives, circular plastics, and eco-design of plastics. The selected pilot projects also represent three pillars of the New Plastics Economy as described by the Ellen MacArthur Foundation: 1) Create an effective after-use plastics economy (Output 2.2.2); 2) drastically reduce the leakage of plastics into natural systems (Output 2.2.3); and 3) Decouple plastics from fossil feedstocks (Output 2.2.4). Furthermore, the Center of Excellence will evaluate technology options for the replacement of single use plastics. Once there are demonstrated solutions, there will be an opportunity to issue bans or taxes.

Comments from GEF Council		
	Comment	***Answer***
	?Further refine plans, including under Output 1.1.1 to ensure all stages of the plastic lifecycle are addressed and the relevant stakeholders, particularly the private sector, are actively engaged. There tends to be a focus on waste collection and recycling; whereas the GEF is committed to ensuring upstream players, particularly from the private sector are engaged to create alternative materials, redesign products for circularity, promote repair, resale, and foster other shared economy options. These players are fundamental to moving to a circular economy approach.?	The pilot projects cover the main elements of the circular economy for plastics. The Center of Excellence will implement interventions (pyrolysis, bacterial degradation) for hard-to-recycle plastics and investigate plastic alternatives. The current portfolio of demonstration projects sufficiently addresses the up-cycling and other value added models. The selected pilot projects also represent three pillars of the New Plastics Economy as described by the Ellen MacArthur Foundation: 1) Create an effective after-use plastics economy; 2) drastically reduce the leakage of plastics into natural systems; and 3) Decouple plastics from fossil feedstocks. Further the Center of Excellence will support the development of alternative materials, shared economy business models and other initiatives beyond the life of the project.
STAP		
	?It is commendable that the project is not only focusing on end-of-pipe solutions but also targeting the upstream side of plastic production. This is a good indication that the holistic aspects of the circular economy are being considered?.	During the project development, the project aimed to implement the holistic aspects indicated in the PIF. Please see previous answer.

Comments from GEF Council		
	Comment	***Answer***
	?Achieving a holistic and sustainable result in the plastic sector will require the incorporation of the three strategies of achieving circular economy transformation as proffered in the New Plastic Economy publication. These include: focusing on fundamental redesign and innovation; encouraging significant reuse; and promoting recycling in the plastic sector. STAP recommends that the project should focus on all three strategies?	Output 2.2 was split into three outputs specifically addressing the mentioned CE strategic points. Under each strategic point the project will present several demonstration activities. Similarly their impact on the respective strategies will be measurable.
	?The project has the potential to generate Global Environment Benefits (GEBs) beyond the chemicals and waste and international waters focal areas. The project can achieve climate change benefits (through mitigation of greenhouse emissions from the burning of plastics). The increase in the reuse and recycling of plastics expected from the project would also mitigate greenhouse gas emissions associated with plastic production. STAP recommends that a detailed analysis of the climate co-benefits from this project should be carried out at the PPG stage and the final interventions designed in such a way to maximize them. Furthermore, STAP recommends that a detailed analysis of how the estimated chemicals and waste and international waters GEBs were arrived at should be presented at the PPG stage.?	The project presents the detailed GHG co-benefits and presents the calculation methods of the GEBs in Section 4
	Paragraph 95 in the PIF indicates that the pilot project will build on previous and current plastic waste and marine litter efforts in Ghana. Several examples of plastic waste management abound in Ghana, and all of these should be considered, and relevant actors and stakeholders in these efforts should be included in this project. Two examples include the University of Ghana Plastic Recycling Project - http://www.iess.ug.edu.gh/projects/institutional/university-ghana-plastic-recycling-project-ugprp; and the recycling of plastic into pavement blocks - https://www.youtube.com/watch?v=aEb6ihZBoeg	Several pilots are aiming for awareness-raising and upcycling goals. The demonstration project of NELPLAST is expected to produce pavement blocks. There will be R&D activities in the project to take it further and produce wall brick. In this case, the likelihood of micro-plastics releases through friction is further reduced.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

Please find Annex C: Status of Utilization of Project Preparation Grant (PPG) uploaded as an attachment.

PPG Grant Approved at PIF: USD 200,000			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***
Stakeholder engagement activities during PPG (consultations, workshops)	10,000	$10,868	$11,734
Verification of baseline data and PPG assessments for the pilots, including selection of companies, GEBs, potential technological feasibility study	50,000	$48,792	$49,462
Preparation of environmental and social management plan (ESMP) (for Category B projects)	10,000	$7,649	$8,404
Gender Assessments	10,000	$11,408	$12,025
Description of the project implementation/execution modalities and agencies (incl. draft TOR for contractual arrangements, assessments of proposed executing agency capacity)	15,000	$14,455	$15,014
Obtaining of co-financing letters from donors, NGOs, Agencies and government	5,000	$5,014	$5,838
Finalization of project documents	100,000	$73,075	$97,523
Total	200,000	$171,261	$200,000

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

Please find Annex D: Project Map(s) and Coordinates uploaded as an attachment.

ANNEX E: Project Budget Table

Please attach a project budget table.

Please find the Project Budget Table uploaded as Annex U: Output based budget in the attachment.

	Input Type	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Component 1: Establishing an enabling framework for a circular economy in plastics management							
Outcome 1.1: Legal and institutional framework realigned to support a circular economy in the plastics sector under Ghana's National plastics management policy and the NPAP							
Output 1.1.1: Situational analysis: Plastic flows assessed for community level archetypes	International consultants	10,000	4,000	4,000	4,000	4,000	26,000
	National Experts	5,000	4,000	4,000	4,000	4,000	21,000
	Travel	-	-	-	-	-	-
	Equipment	5,000	10,000	5,000	5,000	5,000	30,000
	Workshops/training	10,000	5,000	5,000	4,000	4,000	28,000
	Subcontracts	15,000	14,500	12,500	10,000	9,000	61,000
	Sub-total Output 1.1.1	**45,000**	**37,500**	**30,500**	**27,000**	**26,000**	**166,000**
	Total output	**45,000**	**37,500**	**30,500**	**27,000**	**26,000**	**166,000**
Output 1.1.2: Legal, and institutional capacities for a circular economy in the plastics sector assessed.	International consultants	10,000	5,000	4,000	-	-	19,000
	National Experts	10,000	4,000	4,000	-	-	18,000
	Travel	1,000	4,000	4,000	-	-	9,000
	Equipment	-	-	-	-	-	-
	Workshops/training	5,000	4,000	5,000	-	-	14,000
	Subcontracts	6,000	8,000	6,000	-	-	20,000
	Sub-total Output 1.1.2	**32,000**	**25,000**	**23,000**	**-**	**-**	**80,000**
	Output total	**32,000**	**25,000**	**23,000**	**-**	**-**	**80,000**
Output 1.1.3: National implementation/actionable plans, and technical guidelines on bottom-up approach to circular economy in plastics and marine litter management developed in close cooperation with NPAP and within the context of the National plastics	International consultants	4,000	4,000	4,000	4,000	4,000	20,000
	National Experts	3,000	2,000	2,000	2,000	2,000	11,000
	Travel		2,000	2,000	2,000	2,000	8,000
	Equipment	-	-	-	-	-	-
	Workshops/training	2,000	7,500	7,500	7,500	7,500	32,000
	Subcontracts	4,500	4,500	4,500	3,500	3,000	20,000
	Sub-total Output 1.1.3	**13,500**	**20,000**	**20,000**	**19,000**	**18,500**	**91,000**
	Output total	**13,500**	**20,000**	**20,000**	**19,000**	**18,500**	**91,000**
Output 1.1.4: Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures and quality standards	International consultants		3,500	4,000	3,500		11,000
	National Experts	4,000	6,500	6,500	6,500		23,500
	Travel						-
	Equipment						-
	Workshops/training		2,000	2,000	2,000		6,000
	Subcontracts		3,500	2,000	2,000	-	7,500
	Sub-total Output 1.1.4	**4,000**	**15,500**	**14,500**	**14,000**	**-**	**48,000**
	Output total	**4,000**	**15,500**	**14,500**	**14,000**	**-**	**48,000**
Output 1.1.5 The Resource Recovery Secretariat established	International consultants	2,500	2,500	2,500	2,500	2,500	12,500
	National Experts	4,500	4,500	4,500	4,500	4,500	22,500
	Travel						-
	Equipment	10,000	10,000	2,500	2,500	2,000	27,000
	Workshops/training	17,000	17,000	17,000	3,500	3,500	58,000
	Subcontracts	45,000	40,000	40,000	35,000	35,000	195,000
	Sub-total Output 1.1.5	**79,000**	**74,000**	**66,500**	**48,000**	**47,500**	**315,000**
	Output total	**79,000**	**74,000**	**66,500**	**48,000**	**47,500**	**315,000**
	International consultants	**26,500**	**19,000**	**18,500**	**14,000**	**10,500**	**88,500**
	National Experts	**26,500**	**21,000**	**21,000**	**17,000**	**10,500**	**96,000**
	Travel	**1,000**	**6,000**	**6,000**	**2,000**	**2,000**	**17,000**
	Equipment	**15,000**	**20,000**	**7,500**	**7,500**	**7,000**	**57,000**
	Workshops/training	**34,000**	**35,500**	**36,500**	**17,000**	**15,000**	**138,000**
	Subcontracts	**70,500**	**70,500**	**65,000**	**50,500**	**47,000**	**303,500**
Subtotal for Component 1		**173,500**	**172,000**	**154,500**	**108,000**	**92,000**	**700,000**
TOTAL Component 1 plus DSC		**173,500**	**172,000**	**154,500**	**108,000**	**92,000**	**700,000**
Component 2: Capacity building and pilot projects, including public-private partnerships (PPP), technology transfer using BAT/BEP for a circular economy in plastics management							
Outcome 2.1: Capacity built among all relevant stakeholders to ensure integration and mainstreaming of circular economy approaches within plastics management							
Output 2.1.1: Stakeholders from the public sector including targeted, municipalities, industrial private sector associations, and public trained on respective policies, regulations and technical guidelines within the NPMP and NPAP National Action Roadmap, including the gender dimension.	International consultants		4,000	4,000	4,000	2,000	14,000
	National Experts	4,000	4,000	4,000	3,000	2,000	17,000
	Travel	-	1,500	1,000	1,000	1,000	4,500
	Equipment	-	-	-	-	-	-
	Workshops/training	6,000	15,000	25,000	7,500	6,000	59,500
	Subcontracts	7,500	7,500	9,500	3,500	2,000	30,000
	Sub-total Output 2.1.1	**17,500**	**32,000**	**43,500**	**19,000**	**13,000**	**125,000**
	Output total	**17,500**	**32,000**	**43,500**	**19,000**	**13,000**	**125,000**
Output 2.1.2: Capacities of private sector strengthened at all stages of the value chain on new responsive regulations, procurement procedures or quality standards in view of implementing circular economy practices in the industrial sector	International consultants	3,500	3,500	3,500	3,500	3,500	17,500
	National Experts	6,000	5,500	5,500	5,500	5,500	28,000
	Travel	2,500	3,000	3,000	3,000	3,000	14,500
	Equipment	5,000	5,000	5,000	5,000	5,000	25,000
	Workshops/training	15,000	15,000	15,000	15,000	15,000	75,000
	Subcontracts	45,000	45,000	45,000	45,000	35,000	215,000
	Sub-total Output 2.1.2	**77,000**	**77,000**	**77,000**	**77,000**	**67,000**	**375,000**
	Output total	**77,000**	**77,000**	**77,000**	**77,000**	**67,000**	**375,000**
Outcome 2.2: Pilot projects implemented to deliver circular economy benefits							
Output 2.2.1: Sustainable financing business models and Public-Private Partnerships (PPP) developed and applied in the pilots	International consultants						-
	National Experts	3,000	1,000	2,000	2,000	2,000	10,000
	Travel	-	-	-	-	-	-
	Equipment	-	-	-	-	-	-
	Workshops/training	-	-	-	-	-	-
	Subcontracts	5,000	5,000	5,000	2,000	1,000	18,000
	Sub-total Output 2.2.1	**8,000**	**6,000**	**7,000**	**4,000**	**3,000**	**28,000**
	Output total	**8,000**	**6,000**	**7,000**	**4,000**	**3,000**	**28,000**
Output 2.2.2 Pilot projects for reducing plastics from fossil feedstock implemented	International consultants	2,500	5,000	5,000	5,000	5,000	22,500
	National Experts	2,500	7,500	7,500	7,500	7,500	32,500
	Travel	-	-	-	-	-	-
	Equipment	-	200,000	105,000	40,000	20,000	365,000
	Workshops/training	-	12,000	10,000	3,500	-	25,500
	Subcontracts	36,000	40,000	40,000	15,000	7,500	138,500
	Sub-total Output 2.2.2	**41,000**	**264,500**	**167,500**	**71,000**	**40,000**	**584,000**
	Output total	**41,000**	**264,500**	**167,500**	**71,000**	**40,000**	**584,000**
Output 2.2.3: Pilot projects for reducing plastic leakage into nature implemented.	International consultants	10,000	10,000	10,000	10,000	10,000	50,000
	National Experts	3,000	15,000	12,500	12,500	12,500	55,500
	Travel	-	-	-	-	-	-
	Equipment	-	400,000	250,000	30,000	20,000	700,000
	Workshops/training	10,500	15,000	17,500	17,500	7,500	68,000
	Subcontracts	35,000	35,000	37,500	12,500	12,500	132,500
	Sub-total Output 2.2.3	**58,500**	**475,000**	**327,500**	**82,500**	**62,500**	**1,006,000**
	Output total	**58,500**	**475,000**	**327,500**	**82,500**	**62,500**	**1,006,000**
Output 2.2.4: Pilot projects for demonstrating effective after use plastic economy implemented	International consultants	10,000	10,000	5,000	5,000	5,000	35,000
	National Experts	10,000	11,000	12,500	12,500	12,500	58,500
	Travel	10,000	10,000	4,000	4,000	4,000	32,000
	Equipment	100,000	1,400,000	725,000	45,000	25,000	2,295,000
	Workshops/training	27,500	65,000	25,000	10,500	8,000	136,000
	Subcontracts	45,000	75,000	30,500	12,500	12,500	175,500
	Sub-total Output 2.2.4	**202,500**	**1,571,000**	**802,000**	**89,500**	**67,000**	**2,732,000**

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

Not applicable.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

Not applicable.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

Not applicable.