Establishing a circular economy framework for the plastics sector in Ghana

Part I: Project Information

GEF ID

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
- ☐ CBIT
- ☐ NGI

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 World Economic Forum (GPAP)/ UNDP

Executing Partner Type
Others

GEF Focal Area

Multi Focal Area

Taxonomy

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

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 0

Duration

60 In Months

Agency Fee($)

665,000

Submission Date

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CW-1-1	GET	3,500,000	30,000,000
IW-1-1	GET	3,500,000	30,000,000
	Total Project Cost ($)	**7,000,000**	**60,000,000**

B. Indicative Project description summary

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) 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	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
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 Legal, and institutional capacities for a circular economy in the plastics sector assessed. 1.1.2 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) 1.1.3 Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures and quality standards. 1.1.4 A Secretariat/ national commission for plastic pollution established	GET	700,000	8,000,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
2. Capacity building, technology transfer, PPPs, and demonstration activities for a circular economy in plastics management	Technical Assistance	2.1 Circular economy principles in the plastic sector to deliver global environmental benefits promoted, demonstrated, integrated, and mainstreamed	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 of all 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 2.1.3 Sustainable financing and business models developed and applied in the pilots	GET	500,000	8,000,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
2. Capacity building, technology transfer, PPPs, and demonstration activities for a circular economy in plastics management	Investment	2.1 Circular economy principles in the plastic sector to deliver global environmental benefits promoted, demonstrated, integrated, and mainstreamed	2.1.4 Pilot projects to demonstrate circular economy approaches along the plastics value chain and to achieve GEBs	GET	4,350,000	40,100,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
3. Communication strategy and knowledge management.	Technical Assistance	3.1 Coordinated action and synergies with key international,regional and national partners and stakeholders to support the implementation and achieving the objectivesof Ghana’s NPAP and the outcomes of NPMP	3.1.1 Communication strategy developed and implemented to raise awareness on the negative impacts of the plastic pollution on natural environmental systems (including marine litter, POPs and human health) towards consumers behaviour change 3.1.2 Effective knowledge management done through the NPAP/UNDP platform sharing experience, raising awareness, promoting replication and best practices on the national level. 3.1.3 A knowledge exchange platform to promote national and regional partnerships, learning, 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	GET	800,000	2,750,000

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
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	750,000
			Sub Total ($)		**6,670,000**	**59,600,000**
Project Management Cost (PMC)						
				GET	330,000	400,000
			Sub Total($)		**330,000**	**400,000**
			Total Project Cost($)		**7,000,000**	**60,000,000**

C. Indicative 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($)
Government	MESTI and EPA (stream of fonds from Ecotax plastics)	Grant	Investment mobilized	40,000,000
Government	MESTI and EPA	In-kind	Recurrent expenditures	500,000
GEF Agency	UNIDO	Grant	Recurrent expenditures	145,000
GEF Agency	UNIDO	In-kind	Recurrent expenditures	500,000
Private Sector	Unknown at this stage	In-kind	Recurrent expenditures	6,000,000
Others	Climate Innovation Centre Ghana	In-kind	Recurrent expenditures	500,000
Others	World Economic Forum - Global Plastic Action Partnership (GPAP)	In-kind	Recurrent expenditures	500,000
Others	Unknown at this stage*	In-kind	Recurrent expenditures	11,855,000
			Total Project Cost($)	**60,000,000**

Describe how any "Investment Mobilized" was identified

40,000,000 $ MESTI AND EPA (STREAM OF FONDS FROM ECOTAX PLASTICS) * GPAP IN CONSULTATION WITH OTHER proposed STAKEHOLDERS (E.G. WORLD BANK GROUP, NORAD / BASEL, ROTTERDAM, STOCKHOLM CONVENTION, OTHER BI-LATERAL CONTRIBUTIONS (E.G. UK, GERMANY, CANADA. OTHER PRIVATE-SECTOR CONTRIBUTIONS (E.G. THE ALLIANCE TO END PLASTIC WASTE, CIRCULATE CAPITAL)

D. Indicative 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($)	Fee($)	Total($)
UNIDO	GET	Ghana	Chemicals and Waste	POPs	3,500,000	332,500	3,832,500
UNIDO	GET	Ghana	International Waters	International Waters	3,500,000	332,500	3,832,500
				Total GEF Resources($)	**7,000,000**	**665,000**	**7,665,000**

E. Project Preparation Grant (PPG)

PPG Amount ($)
200,000

PPG Agency Fee ($)
19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNIDO	GET	Ghana	Chemicals and Waste	POPs	100,000	9,500	**109,500**
UNIDO	GET	Ghana	International Waters	International Waters	100,000	9,500	**109,500**
				Total Project Costs($)	**200,000**	**19,000**	**219,000**

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			

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			

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			

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			

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			

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			
Male	700			
Total	1000	0	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

Example (to be verified during PPG) *Core indicator 5 “Area of marine habitat under improved practices to benefit dioversity”, indicator 5.3: 7300 tons of marine litter avoided. Other indicators addressed: - 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 (food production), manufacturing (and cities)= 2 (biodegradable plastics production, PET recycling) - Indicator 10.1 Number of countries with legislation and policy implemented to control emissions of POPs to air= 1

Part II. Project Justification

1a. Project Description

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

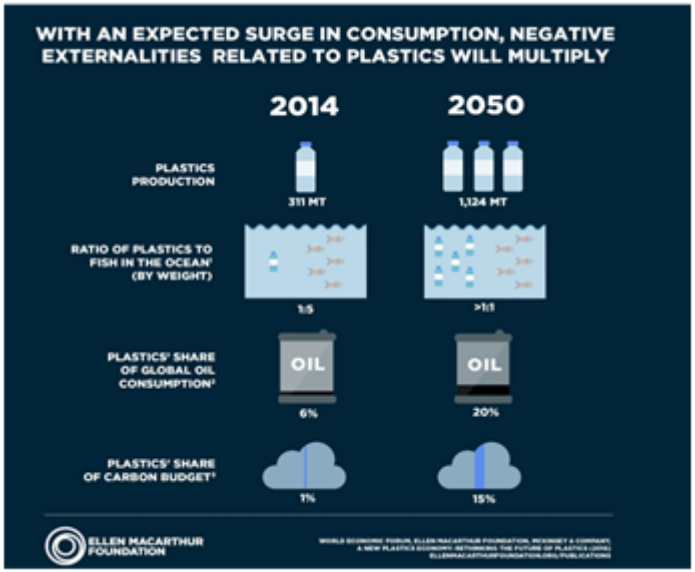
1. Global production of plastics increased by more than twenty-fold between 1964 and 2015, with an annual output of 322 million metric tonnes (MMT), and is expected to double by 2035, and almost quadruple by 2050. Plastics have been used in numerous industrial sectors, including packaging, electronics, automotive, agriculture, health care, consumer goods etc. However the current production and consumption pattern on a linear model of 'take, make, use, and dispose', is a primary driver of natural resource depletion, waste, environmental degradation, climate change, and has adverse human health effects. Global environmental problems associated with unsound management, use and disposal of plastics are manifold. For example, some plastics contain toxic chemical additives, including persistent organic pollutants (POPs), which have been linked to health issues such as cancer, mental, reproductive, and developmental diseases. It is difficult to recycle some plastics without perpetuating these chemicals.

2. Plastics also stay in the environment for a long time; some take up to 500 years to break down; causing damages to the environment, harming biodiversity, and depleting ecosystems. In addition, in many developing countries including Ghana, only a small fraction of plastics 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 being dumped in water environment and oceans leading to marine plastics pollution and clogging urban infrastructure. This not only leads to the unintentional emissions of POPs (uPOPs) posing severe threats to the environment and human health, but also neglecting the potential economic benefits in terms of circular management of plastics. A linear model fails indeed to include economic benefits (including job creation) associated with a more resource-efficient design, re-use, and recycling and production of secondary materials to be re-manufactured and enter into the supply chain again business approaches including job creation. .

3. In the marine environment, plastic litter is a major global-based problem with an estimate of 8-12 million tonnes per year of plastics littered into the global oceans. Approximately 20% of marine plastics pollution results from marine international water sources (e.g. fisheries, aquaculture, illegal dumping, fishing gears) with the majority of pollution (>80%) originating from land-based plastic pollution mainly caused by mismanagement of waste. Generally, the mismanagement of waste includes (a) waste not being collected or disposed of in controlled dumps together with solid waste, (b) releases of plastic pellets and manufacturing waste from industrial sites; (c) plastics blown by wind, water away from dump places, and (d) micro-plastics in wastewater.

4. Plastics can then either enter the marine environment as harmful debries and/or can further degrade under the influence of sunlight, mechanical stress and oxidation into tiny pieces (microplastics) which threaten marine biodiversity. Furthermore, microplastics can end up in the food chain, with potentially damaging effects, because they may accumulate high concentrations of POPs and other toxic chemicals.[1][1] A failure to act could result in more plastic than fish in the Ocean by 2050.[1]

[1] Global Plastic Action Partnership. Shaping a circular economy for plastics – from source to sea. https://wef.ch/gpap



5. It is estimated that more than 150 MMT of plastics have accumulated in the world's oceans, while 4.6-12.7 MMT are added every year (Jambeck et al.). It is broadly assumed that approximately 80% of marine litter is land-based, with regional fluctuations. Marine litter can cause serious economic damage: losses for coastal communities, tourism, shipping and fishing. Taking into account its accumulation and dissemination, marine litter may be one of the fastest growing threats to the health of the world's oceans.

6. The problem of resource-inefficient packaging design, plastic manufacturing and environmentally unsound management of waste result in plastic pollution on land and in marine waters. The identified barriers at each stage of the value chain should be addressed through implementing circular economy practices.

7. Looking beyond the current take-make-waste extractive industrial model, a circular economy is a concept that aims to redefine current production and consumption patterns and to achieve growth and positive economic, social and environmental benefits . It entails gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system. The circular economy builds economic, natural and social capital based on three principles:

- Design out waste and pollution
- Keep products and materials in use at their highest value for as long as possible
- Regenerate natural systems [3][2]

Witin that framework, the New Plastics Economy promotes a vision and key actions, targeted with the broad involvement of key players from the public and private sector for circular economy applied to the plastic sector. The New Plastics Economy is a global initiative led by the Ellen MacArthur Foundation with the amibition to build a momentum towards a circular economy for plastics. Its main ambitions to: (i) create an effective after-use plastics economy by improving the economics and uptake of recycling, reuse and controlled biodegradation for targeted applications; (ii) drastically reduce leakage of plastics into natural systems (in particular the ocean) and other negative externalities; (iii) provide an enabling framework through provision of incentives such as tax rebates and exemptions; and (iv) decouple plastics from fossil-based feedstocks by – in addition to reducing cycle losses and dematerialising – exploring and adopting renewably sourced feedstocks.[1]

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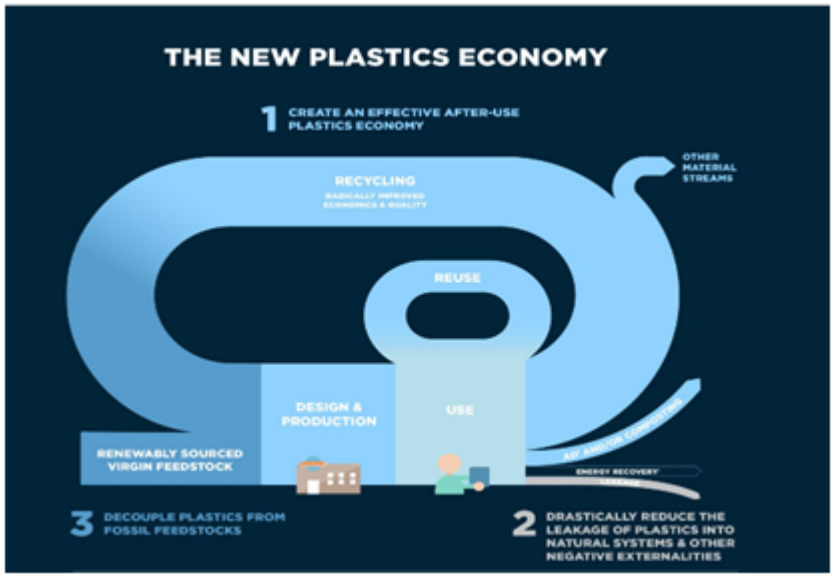
[1] Ellen MacArthur Foundation. 2018. The New Plastics Economy: Rethinking the Future of Plastics & Catalysing Action



Graphic from: Ellen MacArthur foundation: 2016 Report: Rethinking the Future of Plastics

8. In Ghana, about 13,000 MT of solid waste is being generated per day. Of this amount, it is estimated that 22% is not disposed of properly. The 2010 Housing and Population Census (GSS, 2013) observed that in 9.1% of dwelling units, solid waste disposal was done indiscriminately and the proportion of dwellings that burnt their solid waste increased from 7.8% in 2000 to 10.7% in 2010. Only about 2-5 % of plastics are being collected for re-use and/or recycling in Ghana.

9. In the last three decades Ghana, like many of the neighboring countries, has been challenged with exponential growth rates of plastics use and its alarming mismanagement, including wide-spread littering and indiscriminate dumping, causing serious risk to the environment and public health.

10. Ghana has witnessed how plastics have been indiscriminately disposed into water bodies resulting in perennial floods across the country. It has also experienced low fish yields as some toxic chemicals in plastics enter the digestive system of the aquatic animals thereby destroying fish stocks. In the long run, the hazardous effects of plastics tend to have cumulative and compounding negative impacts on human health from pollution of air, marine, freshwater, terrestrial environments, agriculture, fisheries and the food web, and environmental quality in general, highlighting the emerging global concern of micro- and nano-plastics.

11. The Government of Ghana has responded to the above mentioned situation by preparing and designing the National Plastics Management Policy (NPMP), within the context of national sustainable development priorities, including achieving the objectives of the Government's Coordinated Programme of Economic and Social Development Policies (2017-2024).

12. The overarching policy purpose of the NPMP is to comprehensively manage plastics to address current environmental challenges while acting as a vehicle for sustainable development, employment creation and greatly contributing to socio-economic development especially at the base of the economic pyramid and amongst vulnerable community groups. The NPMP is the output of a number of consultations with key stakeholders. Responsibility for implementing the various components set out in the policy will be by key line Ministries and Agencies, who work in close collaboration with each other, civil society and the business community. The Ministry of Environment, Science, Technology and Innovation (MESTI) is lead the way in the implementation of the NPMP while continuing to advance national economic development.

13. This NPMP is built on four focal areas considered essential to achieve a comprehensive system for managing plastics and contribute to socio-economic development. The following strategic actions represent an integrated approach for systems-level structure and support to collectively enable the achievement of the four focus areas of this Policy:

(1) Behavioural change,

(2) Strategic planning and cross-sectoral collaboration,

(3) Resource mobilization towards a Circular Economy, and

(4) Good governance, inclusiveness and shared accountability.

14. In a strategic move, the Government of Ghana has formally joined the Global Plastic Action Partnership (GPAP) and became the first African member. GPAP, the public-private platform dedicated to fostering action to combat the plastic pollution crisis. Ghana's National Plastic Action Partnership (NPAP) was announced on 1st October 2019, In Ghana, it will work closely with the Ministry of Environment, Science, Technology and Innovation (MESTI) to develop a national roadmap for sustainably managing and reducing the country's plastic waste challenge, while continuing to boost its economic growth.

15. Ghana's National Plastic Action Partnership (NPAP) was announced on 1st October 2019. NPAP will support the country's public, private and civil society sectors in transitioning to a circular plastics economy, which directly addresses the root cause of plastic pollution by fundamentally reshaping the way plastics are produced, used and re-used.

16. In the NPMP document a considerable number of barriers and challenges have been identified for achieving a circular economy based sustainable plastics management; these are ranging from poor public awareness and attitudes, low resource mobilisation for effective solutions, weak waste collection services, inadequate recycling facilities and technical know-how, to lack of clear accountability as the challenges associated with plastics are cross-cutting.

17. The main barriers at policy level are the *Weak legal framework, weak enforcement, and absence of policy incentives:* 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. While some foundational legal tools exist, such as the National Environmental Sanitation Policy (revised 2010) and Environmental Sanitation By-Laws (2003), these do not provide the necessary legal guidelines for circular plastic waste management. A Plastic Wastes Management Fund (PWMF)/Environmental Tax was established in 2013 by an Act of Parliament, but the framework for disbursing funds has not been yet set up. Similarly, a directive to ban plastics less than 20 microns and the use of bio-degradable additives in plastics (2015) was

introduced by the Ministry of Environment, Science, Technology & Innovation (MESTI), but seems not yet operational. A National Plastic Management Policy was also drafted by MESTI in December 2017 and is pending parliamentary approval. Therefore, the existing legal and institutional framework needs to be realigned with to support a circular economy based management policy in the plastics sector.

18. *Cost of waste management and lack of national appropriate business models:* Waste management services require a lot of funding from public budget from municipal government. For example, the Accra Metropolitan Assembly (AMA) spends more than 65% of its annual budget to "keep the city clean and healthy", approximately 185,000 USD/month, with around 56% of this paid to the private sector for the collection of wastes. Resources are much more scare in other MMDAs (i.e. local government "Metropolitian, Municipal and District Assemblies") and regions. In order to generate more revenue for waste management services and reduce the municipalities financial burden, with the assistance of the World Bank Environmental Sanitation Project, the AMA implemented a fee-based performance (FBP) scheme in 2010, following the polluter pays principle, requiring every waste generator to contribute a waste management fee based on three tiers of affluence (i.e. low-income, middle-income, high-income). The AMA reported in 2016 that only 40% of residents were paying for waste management services; this puts strain on both the private and public sector, and is a consistent source of conflict and critical impediment to comprehensive waste management service provision.

19. *Informality of the current waste collection and disposal system:* 60% of the residential units in Ghana are informal, meaning they have not received the legally required certificates for building, do not conform to building codes, and evade property taxes. Informality most often occurs in highly dense settlements within inner cities. In addition, residents in these typically low-income areas evade payment of waste management services and resort to alternative sources of waste disposal. The alternative solutions are often dumping directly into gutters, especially prior to rainfall, expecting the rains to dispose of waste, dumping on street corners, indiscriminate dumping in vacant lots, and open burning. Although some plastic recyclers (like Environment 360 and Jekora Ventures) provide collection services for plastic waste from households, these services are not yet mainstreamed or available in all areas/district of Ghana.

20. The main barriers at the technical and sectoral level are the *lack of environmentally sound national capacity, infrastructure and investment:* There is a lack of environmentally sound and and economic-profitable plastics infrastructure, especially for plastics sorting and pre-processing, technologies for recycling and/or re-use of plastics in line with product quality and standards required on international market*s*. Poor business outcome and lack of added value for recyclers negatively impact the waste management system. Inadequate marketing and business strategies for recycling plastic products, inadequate planning within the plastics value chain, unattractive policy incentives in plastic management are factors that decrease the incentive to provide adequate waste management services.

21. *Low collection and recycling rate due to limited separation at source, distance to disposal sites:* Metropolitan Municipal and District Assemblies (MMDAs) provide waste management services, as they are in charge of municipal household collection in Ghana. However, segregation is not made at household level and plastic is collected together with the rest of municipal waste. Sorting centres do not exist yet (only one is currently being piloted in Accra) and the lack of capacities to sort plastic waste from regular waste impedes its recycling. In addition, trucks travel over long distances and queue for a considerable amount of time in traffic to dispose of collected waste. This is a leading cause of some 500 t of waste left uncollected in the capital city Accra every day.

22. The main barriers at the consumption side is the awareness and attitude of the general public which is characterized by *the lack of awareness of the adverse effects of unsound plastic waste management*: Despite efforts deployed during various plastic waste management related initiatives and campaigns in Ghana (see next section), the general public and private sector are generally not aware of the adverse effects (or the severity) to human health and the environment of plastic waste, nor are they aware of fitting BAT/BEP practices and economic benefits of implementing circular economy approaches for the plastics sector. As stated in the Report on the Options for the Effective Management of Plastic Waste in Ghana, "Both formal and informal education is urgently needed to raise Ghanaians' awareness of the negative impact of irresponsible waste disposal in general and plastic waste in particular. Education must also be used to forge a positive change in behaviours towards plastic waste management. Information materials such as bill boards, posters, fliers, leaflets etc. should be distributed among the general public." The Report recommends that "social responsibility for plastic waste management should be initiated at all levels of our education system, right from the primary school level upwards. The role of communities (church, youth, and women groups) in plastic waste management should be strengthened".[5][3]

2) Baseline scenario or any associated baseline projects

· ***Baseline scenario***

23. For Ghana estimations of solid waste generation range from 13.000 to 30,000 MT daily (an average of 0.47kg/person/day in the household) and 75% of waste is discarded in public dumps or burned (with huge differences in services availability between rural-to-urban areas). Importantly, 86% of waste generated is readily recoverable with a value of 83 billion GHC per annum if transformed into secondary feedstocks for new industries.. From the amount of solid waste generated, only 14% is collected, 38% is dumped in open spaces, 9% is dumped indiscriminately, and 11% is burned. Large disparities exist between regions and rural and urban areas, with rural areas in the Northern Regions having the lowest access to formalized waste management services in the country, with only 5% of waste collected, 57% dumped in open spaces, and 17% dumped indiscriminately.

24. Some 120 companies manufacture over 52,000 tonnes of various plastics and plastics products per year. It is estimated that more than one million tons of plastic wastes are generated every year. According to Ghana EPA, approximately over 3,000 MT of waste plastic are generated across Ghana every day, which constitutes 14% of the entire municipal solid waste stream.[6][4]

25. Approximately 2-5% of plastic waste is collected for recycling, which is almost entirely performed by the informal sector. Most of this activity involves the thin-film 'pure water' sachet, which is mostly recycled into black carrier bags. A few of the formal waste management companies recover modest quantities of plastic waste in Accra, the capital city, and attempt to export the material as scrap. However, there are many complications as they are unable to collect sufficient quantities to compete on the international market and because pre-processing facilities to turn the plastic waste into flakes or recycle pellets, which are higher value materials in greater demand globally, are critically lacking in

Accra and the rest of the country. As of 1996, about 20 plastics manufacturing companies had formed in Ghana, which grew to approximately 895 companies in 2010 directly employing over 14,700 Ghanaians, with about 90% of the companies located within the Accra-Tema Metropolitan Area.

26. There are approximately 50 different groups of plastics in Ghana, with hundreds of different varieties. Not all types of are recyclable. Sorting, which presents the easiest way of controlling plastic waste that allows recycling and other forms of managing plastic waste, is non sufficiently part of the Ghanaian waste management culture. Elsewhere in the world, plastic industry authorities have developed a standard marking code to help consumers identify and sort the main types of plastic.[7][5]

27. Plastic is used in Ghana for some or all the following economic activities:

- High density black plastic bags for shopping, films and sheets, and garbage storage
- High density transparent plastic for packaging electronic and canned and bottled products
- Low density plastic bags for storing vegetables, granular sugar, salt, spices, etc.
- Polypropylene plastic woven sacks (rice, sugar, salt) and plastic strip bags ("Ghana must Go") for travelling
- Light transparent plastic for wrapping meat and fish products
- Bottling water, dairy products, and fruit drinks
- Floor and door mats
- Egg crates and plastic cutlery

The following are identified as the most common types of plastic bags in Ghana:

- Low density polyethylene (LDPE): black/white (transparent)/other coloured carrier bags
- Polyvinyl chloride (PVC): Food trays, cling film, bottles for squash, mineral water, and shampoo
- High-density polyethylene (HDPE): Bottles for milk and washing-up liquids
- Polyethylene terephthalate (PET): Fizzy drink bottles and oven-ready meal trays
- Polystyrene (PS): Yoghurt pots, foam meat or fish trays, hamburger boxes and egg cartons, vending cups, plastic cutlery, and protective packaging for electronic goods and toys

The types of plastics manufactured in and imported into Ghana are presented in Table 1 below.

Table 1. Plastics manufactured in and imported into Ghana

Types of Plastics	Examples of Uses
Polyethylene terephthalate (PET)	Fizzy drink bottles and oven-ready meal trays
Polyvinyl chloride (PVC)	Food trays, cling film, bottles for squash, mineral water and shampoo
High-density polyethylene (HDPE)	Bottles for milk and washing-up liquids
Low density polyethylene (LDPE)	Carrier bags and bin liners
Polypropylene (PP)	Margarine tubs, microwaveable meal trays
Polystyrene (OS)	Yoghurt pots, foam meat or fish trays, hamburger boxes and egg cartons, vending cups, plastic cutlery, protective packaging for electronic goods and toys

28. Plastic waste in Ghana can be divided into two categories: primary and secondary waste. The primary plastic waste is mostly generated from plastic producing and goods manufacturing industries and the quality of plastics recovered for reprocessing is almost as high as that of virgin plastics. The waste is pure and suitable for reprocessing with standards equipment into the same kind of products manufactured from virgin materials. Primary plastic waste is usually homogeneous and therefore its recycling is comparatively economical and easier.

29. The secondary waste, which refers to waste plastics from sources other than the industrial ones, is predominant in Ghana due to the consumption and littering habits of the inhabitants. This category of plastic waste is impure, i.e. it may be contaminated and often consist of mixtures of various types of plastics. The direct reprocessing of such mixed plastics/supplies (i.e. secondary recycling) results in products with poor mechanical properties because of the different characteristics of the plastics it contains. The potential for marketing these materials is relatively low.

30. The main sources of plastic waste in Ghana can be classified as municipal, commercial, marine, and industrial:

· *Municipal waste*: Plastic waste can be collected from residential areas (in the form of domestic or household waste), streets, parks, collection depots, and waste dumps. The most common type of plastic waste within the municipal waste steam is the sachet: water-filled bags that are discarded indiscriminately soon after consuming its contents. Unless they are sorted and bought directly from households, they typically become mixed with other waste materials and such plastic waste is likely to be dirty and contaminated.

Sometimes the plastics can be separated and cleaned quite easily, but contamination with hazardous waste is not always visible and may be more difficult to remove. Litter that has been waiting for collection for some time may have been degraded by sunlight.

· *Commercial waste*: Workshops, craftsmen, shops, supermarkets, and wholesalers generate significant quantities of plastic waste that may be viable for recovery. A great deal of such waste is likely to be in the form of packaging material made of polyethylene (PE), either clean or contaminated. Hotels and restaurants are often sources of contaminated PE materials.

· *Marine litter*: Marine litter and micro plastics have not received much attention until the last decade. It is estimated that 10% of plastics produced will enter into the sea (Thompson, 2004). Marine litter menace is found along shorelines, in coast waters, estuaries, and oceans throughout the world. Ghana has a long and productive coastline of about 550 km facing the Gulf of Guinea. Marine litter travels over long distances with ocean currents and winds and is found everywhere in the marine and coastal environment. The litter found in these environments could be as a result of people dumping deliberately or unintentionally. Currently, it is estimated that Ghana has an average daily waste generated per capita of 0.45 kg, equating to 3 MMT of solid waste annually. It is estimated that only 10% of solid waste generated is properly disposed of mainly through landfill sites, but options are rapidly depleting (GhIE, 2011). If not reversed, this trend can result in major changes in the environmental conditions and interdependent relationships can cause the marine ecosystem to fail and hence affect the coast's ability to adequately provide for the plants, animals, and humans that depend on it and each other to survive.

· *Industrial plastic*: The plastics processing, manufacturing, and packaging industries generate waste material that typically has relatively good physical characteristics, i.e. it is sufficiently clean, since it is not mixed with other materials. Such plastic is exposed to high temperatures during the manufacturing process, which may have decreased its characteristics, but it has not been used in any product applications. Many industries discard PE film wrapping that has been used to protect goods delivered to the factory. This is an excellent material for reprocessing, because it is usually relatively thick, free from impurities, and in ample supply. Plastics processing industries in Ghana sometimes recycle the waste they generate, but this is at a relatively low level. Considerable amounts of waste plastics generated by many industries remain uncollected or end up at the municipal dump. However, industries are often willing to cooperate with private collecting or reprocessing units.

Plastic waste generation in Ghana is summarized in the figure below.

Figure 1. Plastic Waste Generation in Ghana[8]

	Plastic Distribution, by grade (%)	Daily (tonnes)	Annually (tonnes)
Plastic Generation (tonnes/day)	*14% of Municipal Solid Waste*	3,000	1,095,000
LDPE (film)	25.31	760	277,145
PET	23.00	690	251,850
HDPE	19.19	576	210,131
PP (rigid)	10.61	318	116,180
PS	03.75	113	41,066
PVC	04.31	129	47,195
Other	13.83	415	151,439

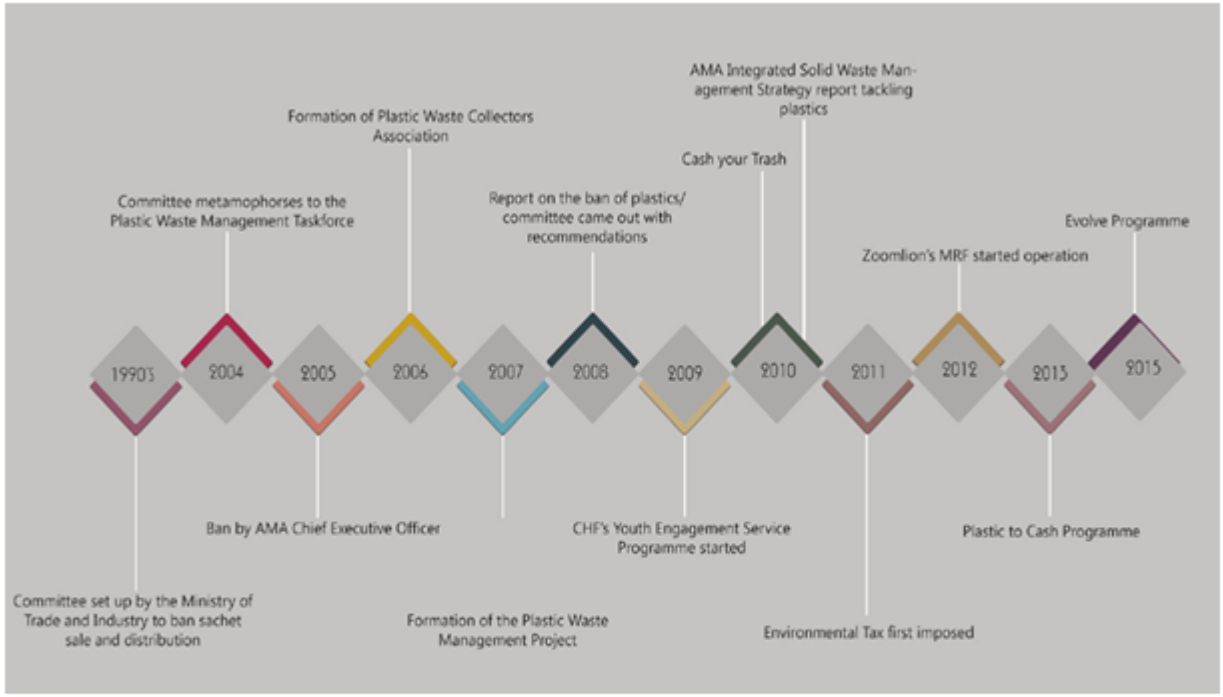
•Baseline projects:

National initiatives at policy level:

31. There are a number of key tools in the legal framework guiding sanitation and environment at both the national and local levels. These include the National Environmental Sanitation Policy (revised 2010); Environmental Protection Agency Act - Act 490 (1994); The Constitution - Section 41k (1992); Environmental Sanitation By-Laws (2003); the National Water Policy (2007), the National Environmental Policy (2012), the Public Health Act (2012) and the Local Governance Act - Act 936 (20161990). The National Environmental Sanitation Policy (prepared in 1999 and revised in 2010), which was developed to support Ghana in achieving the Millennium Development Goals (MDGs), specifies a framework where national development resources will be used to achieve a clean and healthy environment. It is supported by the National Environmental Sanitation Strategy and Action Plan (NESSAP), which recognizes waste as “materials in transition” (MINT) demonstrating that wastes are materials with value that have the potential to

minimize costs for waste management. It also recognizes public-private partnerships as a driver for achieving effective waste management. NESSAP identified waste segregation, re-use, recycling etc. as practical means by which wastes can be dealt with to minimize their environmental impacts, create “green jobs”as well as reduce costs for waste management. In addition, NESSAP aimed to prepare the grounds for achieving “total sanitation”as a logical next step beyond 2015.

32. The National Plastic Management Policy was recently drafted by MESTI in December 2017 and was submitted for Parliamentary approval in April 2019. This new policy aims to provide a clearly defined pathway for dealing with the challenges of plastic waste within the socio-economic context of Ghana and achieving effective coordination of all plastics management initiatives across the material life-cycle. It will promote a paradigm shift from linear processes of managing plastics, i.e. extraction, processing, consumption, and disposal, to a circular framework that mimics nature and re-integrates materials into economic and natural systems – waste is instead viewed as a potential resource. The National Plastic Management Policy supported by MESTI will play an overarching role over all the initiatives on plastic management to be implemented in Ghana, and shall be considered as a framework and basis for any further policy-building and regulations to be proposed.



History of plastics waste management initiatives in Ghana (Source: draft document NPMP)

33. The MMDAs are mandated under the local Governance Act 2016 (Act 936) and other related laws to implement the policies and strategies and enforce the laws on sanitation and environmental health. Metropolitan and Municipal Assemblies (MMAs), which are responsible for large urban areas, have set up Waste Management Departments, which account for 6 of 260 MMDAs across the country. This indicates that the vast majority of local government (i.e. MMDAs) lack the resources and technical capacity to effectively manage solid wastes, including plastics.

34. A Plastic Wastes Management Fund (PWMF)/Environmental Tax was established in 2013 by an Act of Parliament Act 863 to be "computed on the Cost, Insurance, and Freight (CIF) value of the goods" and paid at the point of entry. Act 863 outlined that "the revenue accruing shall be paid into a fund designated as Plastic Waste Recycling Fund

which shall be dedicated to recycling of plastic waste and production of plastic bins and bags and the production and use of biodegradable plastics". However, although according to Ghana Plastic Manufactures Association (GPMA) the 10 per cent tax apparently accrued a total sum of GHC 912 million, , no funds had been released from the PWMF as the disbursement framework has still not been set up. GPMA is calling for the setting up of an Authority as the calls for single use plastics to be banned intensify and also to establish a Plastic Levy Fund Authority to mobilise sustainable financial resources to tackle plastic waste.

35. In response to the June 2015 flood, which claimed 273 lives and was directly attributed to a 5-meter diameter storm drain being lodged with wastes, a directive (2015) to ban plastics less than 20 microns and the use of oxo-bio-degradable additives in plastics was introduced by the Ministry of Environment, Science, Technology & Innovation (MESTI). However, due to a lack of enforcement and a lack of assessments on the environmental and human health risks of oxo-biodegradable additives especially in connection with chemical migration in food and beverage packaging applications, compliance with the directive has not been achieved. The standard on - oxobiodegradable plastics has since been developed in Ghana.

36. A number of coordination bodies have been established to address plastic waste management:

- 1980s: A committee was first put in place in the late 1980s to research the issue and propose recommendations for the government.

- 1990s, another committee was set up when plastics from sachet water began creating problems and the government threatened to ban production and supply of water sachets.

- In 2004, the National Plastic Waste Management Taskforce was established, which supported a number of campaigns to convert waste plastics into resources and commodities for trade.

- In 2008, the Committee on the Proposed Banning of Plastics in Ghana was established with representatives from the Office of the President; MESTI; EPA; Association of Ghana Industries; Ghana Plastics Management Programme; and the Accra Metropolitan Assembly. This committee has since disbanded.

37. The AMA developed an Integrated Solid Waste Management Strategy in 2010 and a Franchise Agreement in 2016. The Franchise Agreement compels service providers to engage in recycling within their respective service zones. The Franchise Agreement set targets for separated plastics over the estimated contract periods stipulated in the agreement as follows: private service providers are to identify locations within their service zone where salvaged plastics or recyclable materials will be stored by 2017; 12 MT of plastics are to be separated by 2018; and 30 MT of plastics are to be separated by 2021. It is unclear if this clause is being monitored or enforced.

38. In April 2018, Ghana has joined the UK and Vanuatu-led Commonwealth Clean Oceans Alliance – "an agreement between member states to join forces in the fight against plastic pollution". Strong commitment of the Ghanaian stakeholders and committed funding from the Department for International Development (DFID) resulted in one-year-pilot project for plastic management in Accra. The project intends to be a catalyst for enhanced and funding for other pilot projects as well as an integrator for coordinating efforts which will contribute to plastics management projects worldwide. Thus, it aims to tackle global plastic pollution via 4 pillars: (1) Facilitation and Partnership support; (2) Technical support and Action-Innovation; (3) Investment; and (4) Replication and scaling-up.

39. The project will be implemented in the collaboration with SYSTEMIQ, Seureca Veolia, WasteAid and other stakeholders from international and national institutions, civil society, and private sector, such as Global Plastics Action Partnership (GPAP) / World Economic Forum / World Resources Institute, Government of Ghana Accra Municipality,

Ghana Recycling Initiative by Private Enterprises (GRIPE), , etc. Thus, the project is a model of public-private partnership with focus on improving waste management and increasing recycling capacity in Accra. It is expected that a waste management pilot programme will be established for Accra, strong partnership will be built among key stakeholders, a clear strategy and roadmap to support for regulatory reform and implementation will be formed and opportunities for replication and scaling-up in Ghana and the West Africa region will be identified.

40. Initiatives on plastic waste management: In 2004, the National Plastic Waste Management Taskforce successfully supported initiation of the plastic collection and recycling industry in Ghana. As Ghanaians learned that plastic recovery was a lucrative business, many micro,- small and medium enterprises (SMEs) emerged to recycle plastics domestically, with some 10,000 to 30,000 Ghanaians eventually participating in informal plastics collection activities including export to neighbouring countries. While this initiative was bolstered by the high price of virgin plastics prior to the crude oil price crash of 2008, the key to success was secured financial backing in the form of a subsidy. The subsidy was organized as a voluntary fund under the Task Force, and mainly funded by private sector plastic manufacturers. Collectors and recyclers were assured that there was an active market to sell to, and domestic re-manufacturers (of mostly thin carrier bags and lawn furniture) secured a subsidized premium for using domestically recycled plastics rather than imported virgin plastics.

41. In 2006, the plastic collectors (pickers and intermediaries) formalized themselves into an association known as the Plastic Waste Collectors Association of Ghana (PWCA). By 2016, PWCA had some 8,000 members in the Accra-Tema Metrooplitian Area and 20,000 members nationwide and established a close partnership with some 30 plastic manufacturing companies in Ghana, with a focus on the recycling of sachet water plastics (HDPE thin-film).

42. A Plastics Manufacturers Association (PMA) was also established in 2009. It initiated the Plastic Waste Management Project (PWMP), under which incorporated industry members voluntarily put up money for plastic recovery initiatives. Since the plastic manufacturers were not contributing equally to this voluntary fund, the environmental tax (Plastic Wastes Management Fund) on all plastic imports was implemented in 2013 by the government to fund plastic waste management (as mentioned above). The is under the management of the Ministry of Local Government and Rural Development (MLGRD) and Ministry of Finance.

43. The Plastic Waste Management Project (PWMP) was given the AMA the authority to arrest and sanction those who litter, in coordination with the AMA and Sanitation Courts and the Metro Public Health Department. The Project also provided assistance to the Plastic Waste Collectors Association of Ghana (PWCA) in the form of tricycles and trucks to enhance collection and transportation of plastics and through access to credit facilities from banks.

44. In 2010, the “Cash your Trash” programme was piloted with the support of Community Housing Foundation International (CHF), in coordination with the AMA and PWMP, to encourage plastic waste segregation at source in Accra. Some 15,000 households were educated on segregating recyclables and provided with source separation bags. Assessment of the pilot found that about 90% of households successfully participated.

45. In 2015, the EPA initiated and piloted a waste segregation programme in conjunction with a private service provider, Jekora Ventures, and various ministries. About 60 institutions participated. The programme targeted education at primary schools with the aim of eliminating the problem at the grassroots level and provided colleges and universities with colour-coded bins. The level of compliance from the point of separation appeared to be low and was identified as an attitudinal problem.

Associated baseline projects:

46. On October 1, 2019, the Government of Ghana has formally joined the GPAP as its first African member dedicating actions addressing the reduction of plastic waste and pollution. Ghana is the second country to partner with GPAP, and it will work closely with MESTI to develeop a national roadmap for sustainably managing and reducing the country's plastic waste challenges.

47. The President of the Republic of Ghana, H.E. Nana Akufo-Addo launched the Ghana National Plastic Action Partnership (NPAP)will support the country's public, private and civil society sectors in transitioning to a circular plastics economy, which directly addresses the root cause of plastic pollution by fundamentally reshaping the way plastics are produced, used and re-used. The Ghana NPAP will,as part of broader strategic efforts to accelerate the reduction of plastic waste and pollution in Ghana, the NPAP will work in close alignment with the National Plastic Management Policy championed by MESTI, and transform the management of plastics across the value chain..

48. GPAP is designed as a platform to unite players with a common objective and to help create linkages that drive innovation and create impact. The Ghana NPAP will convene leading stakeholders and influencers in-country who are required to drive the implementation of public-private actions to shape a new plastics economy –nationally "owned" and led through local partners. GPAP focuses on three strategic pillars:

(1) Curating knowledge and insights

(2) Driving implementation of national action plans

(3) Catalysing strategic investment.

49. Four priority action areas have been identified where NPAP will focus in order to add meaningful value to existing national efforts and drive the delivery of our goal to support the creation and implementation of a circular economy framework for the plastic sector in Ghana in order to reduce plastic waste and pollution.

(i) Driving the agenda and governing responsibly
(ii) Working in partnership to connect the system

(iii) Engaging the public

(iv) Sharing progress and impacts

50. UNDP Ghana launched a 'Waste' Recovery Platform in August 2018 to act as a "one-stop-shop" digital solution for collaboration, information sharing and data aggregation for all things 'waste' / resource recovery in Ghana. In line with the National Environmental Sanitation Strategy and Action Plan (NESSAP) in 2010 with the introduction of the concept of waste as Materials in Transition (MiNT), the UNDP 'Waste' Recovery Platform aims to facilitate the MiNT in action. This initiative also contributes to the Sustainable

Development Goals (SDGs) Goal 12, and other national policies and strategies, such as the Plastic Management Policy (2019), the Medium-Term Expenditure Framework (2018-2021) and expected Sanitation Strategic Plan (2018-2020), the Environmental Sanitation Policy (2008), "1District, 1Factory" initiative on local industrialization. The project supports for a public-private partnership with key stakeholders from Government (such as Ministry of Sanitation and Water Reources; Ministry of Environment, Science, Technology and Innovation), Private Sector (such as waste processing companies and startups), Development Partners, Development Banks, NGOs and Academic institutions.

51. In line with the National Environmental Sanitation Strategy and Action Plan (NESSAP) in 2010 with the introduction of the concept of waste as Materials in Transition (MiNT), the UNDP concept note aims to facilitate the MiNT in action. This initiative also contributes to the Sustainable Development Goals (SDGs) Goal 12, and other national policies and strategies, such as the Plastic Management Policy (2018), the Medium-Term Expenditure Framework (2018-2021) and expected Sanitation Strategic Plan (2018-2020), the Environmental Sanitation Policy (2008), "1District, 1Factory" policy on local industrialization. The project supports for a public-private partnership with key stakeholders from Government (such as Ministry of Sanitation, Ministry of Environment, Science, Technology and Innovation), Private Sector (such as waste processing companies, startup companies), Development Partners, Development Banks, NGOs and Academic institutions.

52. In regard to the implementation, the 'Waste'Recovery Platform will support to build capacity and enable collaboration for resource recovery. It consists of four main components;(1) a convening mechanism that brings together all the stakeholders on a periodic basis to connect, discuss issues of common interest and forge partnerships for effective waste management; (2) a digital platform to connect stakeholders to facilitate waste recovery, which will be equipped with tools such as a waste resource map, a library of recovery technologies, and mobile application for trading of waste. (3) The 'Waste' Recovery Innovation Challenge (WRIC) where technical and financial resources are given to innovative business, research and advocacy projects to demonstrate, contribute knowledge and raise awareness on opportunities for waste recovery in Ghana. (4) a communication dimension that aims at building awareness and knowledge for the general behaviour change needed to make waste recovery systems effective.

53. The first phase of the WRIC targets five business models which are expected to be piloted from late 2019 through 2020 to implement businsesses built on different waste streams of which much focus is on plastics. One advocacy project being led by an NGO will also be funded to drive awareness creation on circular economy whiles a research project being imp,eneted by a research institution shall also be supported to research and experiment on opportunities for waste recovery in Ghana. (4) a communication dimension that aims at building awareness and knowledge for the general behaviour change needed to make waste recovery systems effective.

54. . Founded in November 2017, the Ghana Recycling Initiative by Private Enterprises (GRIPE) is an industry-led coalition formed under the Association of Ghana Industries (AGI) with a stake in the plastics sector to integrate sustainable waste management solutions, particularly around plastics. GRIPE was founded by eight multinational companies with varied products with a proven track record of involvement in sustainability actions concerning plastics in other countries. These include: Coca-Cola Bottling Company of Ghana; Dow Chemical West Africa Limited; Fan Milk Ghana Limited; Guinness Ghana Breweries Limited; Nestlé Ghana Limited; PZ Cussons Ghana Limited; Unilever Ghana; and Voltic (GH) Limited. Innovative solutions for recycling have already been implemented by GRIPE and could provide a strong basis for replication or scaling up i.e. demonstration activity using construction material from mixed plastics to build a room of a public school in Ghana.

55. The Plastic REVolution Foundation is also currently investigating the feasibility of running a plastic-to-fuel plant in central Ghana based on pyrolysis technology which enables the conversion of plastic into smaller molecules which can be used either as fuel or to create new plastic. Their initiative could be coupled with similar initiatives of a

smaller scale in other regions of Ghana, to foster a cluster approach towards mixed plastics recycling and/or a value chain to incite waste collection from environment surrounding marine water.

56. Environment360, a local NGO, is also supporting circular economy approaches by creating inclusive collection systems that empower informal sector waste workers to have an economic and environmental impact on their communities. In particular, it aims to decrease the amount of indiscriminate dumping of waste in coastal and urban communities by working with local authorities to create new collection routes and education campaigns that help these communities understand the importance of preserving the beaches and marine life. Awanress raising and contributions from informal actors/waste pickers from these communities may have a positive impact on plastic waste collection and marine litter.

57. Focusing on e-waste, with impact on resulting plastic waste, launched in August 2018 the SGS Renovo Ghana Programme, which aims to control, manage, and dispose of electrical and electronic waste and tires in Ghana. The Government of Ghana has designated SGS as the external service provider to collect advance eco levy on all electrical and electronic equipment (EEE) and tires exported to Ghana. A meeting with SGS Renovo Ghana Programme took place on July 2019. As an outcome of that meeting, SGS said that it considering extending activities to plastic. Potential for synergy with SGS Renovo Ghana Programme to mobilize funding for plastic management through ERP will be further explored during the PPG.

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

58. With the aim of reducing u-POPs and green house gas emissions from open burning of waste and marine plastic litter, this project will address the barriers towards establishing a circular economy for the plastics sector. Together with legislative measures, technical assistance, investment and awareness raising activities, this project will support the environmentally sound management of plastics from land-based and marine based sources, where applicible, of marine litter, and with local clean-up support where feasible, increased marine plastics pollution will be stemmed and prevented. The theory of Change is in Annex F.

59. In close collaboration with the Global Plastic Action Partnership (GPAP), this project aims at establishing the circular economy framework and fast-tracking related solutions for the plastics sector in Ghana and integrating its key actions into the national development agenda regarding plastic waste prevention and minimisation, reuse and recycling as well as the related employment creation, reduction of unintentionally produced POPs and greenhouse gas emissions. In so doing, the project will aim contribute to preventing plastic litter pollution.The detailed objective of the project is to strengthen the national capacity in Ghana to transition to a circular ecnomy framework that facilitates sustainable plastics management, including scaling up investment, modifying plastics production and alternatives, consumer use, plastic waste management, and ultimately reduces u-POPs, greenhouse gas emissions and marine littering.

60. This project will also directly support all five of the draft national policy's guiding pillars: behaviour change, planning and coordination, good governance and accountability, resource mobilization, and locally appropriate solutions. It will focus on verifying the latest baseline situation in Ghana;; integrating key circular economy actions into the national development agenda regarding plastic design, reuse and recycling approaches, plastic waste prevention and minimisation, and related formalization and employment creation

through value chain creation; and achieving Global Environmental Benefits such as reduction of u-POPs, greenhouse gas emissions and marine littering. It will be closely coordinated with all relevant initiatives completed or underway in Ghana through the establishement of a National Secretariat to act as the nerve centre aligning all plastics management initiatives to the national plastics circularity roadmap. The creation of the National Secretariat is proposed in the National Plastics Managemet Policy and seen as a fundamental driver for long-term success in achieving a sustainable plastics circular economy in Ghana.

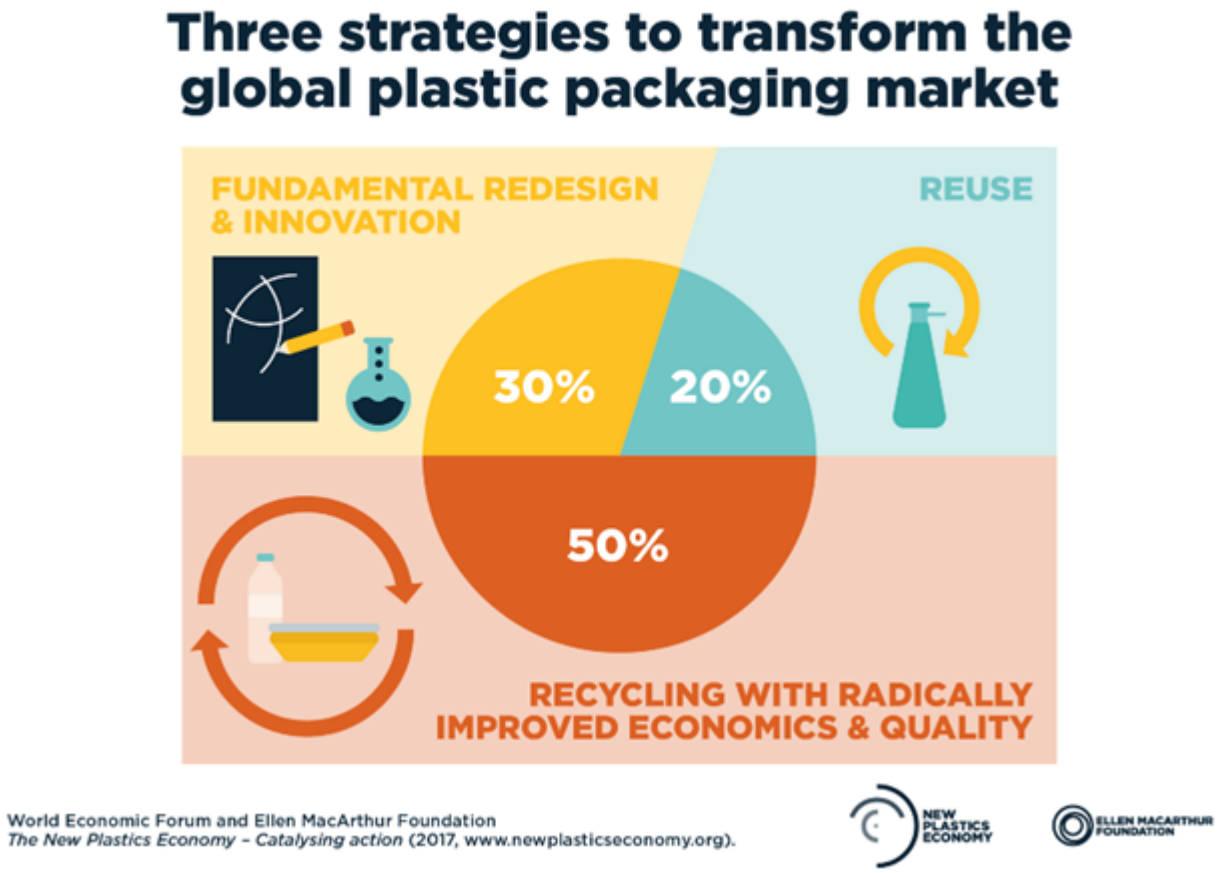
61. Emphasis will be played on addressing barriers along the cycle of circular economy for plastics management and demonstrating circular economy practices through creating additional value, extending the plastics lifetime and relocating waste from the end of the value chain to the beginning through recycling and/or re-use. The pilots will look into the design stage, manufacture stage, recycling and end-of-life stage (e.g. consumer awareness and incentivizing appropriate plastic collection and sorting systems). The broad lines of the approach are the following:

· Reducing plastic waste accumulation on land, and in water, and subsequently reducing negative environmental and health impacts, through developing and strengthening the legislative framework for circular economy in plastics management, scaling up national plastic management capacities, including sorting centres and recycling of plastic waste, and collaboration with manufacturing hubs at the international production value chain;

· Promoting the adoption of BAT and BEP (through technology transfer and GPAP experiences) into national existing companies such as encouraging the use of plastic alternatives during design, strengthening resource-efficienct manufacturing, strengthening environmentally sound plastics recycling and end-of-life activities (e.g. sorting and pre-processing of plastics);

· Avoiding u-POPs emissions and reducing marine littering through promoting the adoption of BAT and BEP (via technology transfer and pilot experiences) into national companies and start-ups; e.g., to encourage the design and use of plastic alternatives , strengthening resource-efficient manufacturing, strengthening environmentally sound plastics recycling and related upstream activities (e.g. raising awareness of consumers on waste prevention including sorting of waste at source, promoting collection and pre-processing, etc.

· At the supply side of plastics, and mainly in partnership with GPAP, with international ‘plastics’ manufacturing hubs and recycling platforms, the project will promote designing for less need for plastic packaging; reducing the single use plastic packaging; manufacturing plastics that are readily recyclable (e.g., flame retarder issues), developing new technologies to recycle mixed types of plastics; enabling greater use of alternative biodegradable materials; supporting the establishment of take-back schemes; and co-developing policies and incentive mechanisms to support companies to engage in Ghana’s new circular plastics economy framework.



62. This project also encourages strong partnerships : (i) with private companies at national level (ii) with private sector companies, manufacturing hubs, and advisory and international forums for regulatory and standards setting at international level and where applicable, and serving as a pilot initiative under GPAP.

63. The following components are proposed and a brief description is presented below.

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

Component 2: Capacity building, technology transfer, PPPs, and demonstration activities for a circular economy in plastics management

Component 3: Communication strategy and knowledge management.

Component 4: Monitoring and evaluation

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: Legal, institutional, and technical capacities framework for a circular economy in the plastics sector assessed

64. A gap analysis will be conducted during the PPG and will aim to identify barriers towards establishing a circular economy framework, including those which could be addressed at policy level and support sound proposals to strengthen the legal and regulatory framework. The analysis will aim to support sound proposals to strengthen the legal and regulatory framework of Ghana and to be embedded in the National Plastic Management Policy currently under Presidental Cabinent review. The gap analysis will include the following elements:

· Start with a mapping exercise of existing baseline assessments, identify gaps in data and geographical areas, and propose a methodology for completing a national baseline assessment usable at the local level and incorporating existing findings where applicable

• Mapping of the plastic design and manufacturing value chain including the key market players and packaging designers and raw material sources to recyclers or companies that can treat or safely dispose plastic packaging

• Assessment of the current status of plastic use and specification in the context of retail value chains, from regulatory as well as market perspective

• Assessment of the current status of plastic after-use pathways: collection, reuse, recycling, and types of final treatment

• Identification of best practices for reduction, elimination, treatment, and safe disposal of plastic items, including through benchmarking at regional level

• Identification of opportunities to reduce, reuse, and recycle plastic across plastic value chains (e.g. taking into account losses of plastics due to bottlenecks, total costs and revenues, GHG emissions, decoupling from fossil-based feedstocks, and feasibility of removing bottlenecks) and identify key regulatory barriers to implementation of such solutions.

- Prepare a toolbox of interventions with corresponding implications (human, finalcial technological and regulatory resources needed which could strengthen environmentally friendly plastics solutions including appropriate business models ,funding mechanism, regional standards for monitoring of plastic waste, and regional standards for increase circular economy practices (i.e. common standards for promotion of increased recycled content, material alternative of reduction at design).

65. The gap analysis will also identify priority hotspots related to marine litter, in order to target recommendations on macroplastics and microplastics found in the ocean and coastal area. This aspect of the analysis will be backed up by available literature and current state of knowledge on marine plastics and micro plastics in order to promote a framework that will have a significant impact on the accumulation of debris in water. The following elements will be addressed in the value chain analysis:

- Stocktaking analysis capturing latest information available on type of plastics available in oceans; their sources and pathways and travel mechanism ;
- Identification of key sources and sectors responsible for generating marine plastics in Ghana and at regional level: land-based sources/sectors generating macroplastic litter and micro plastic litter; and sea-based sources/actors generating macroplastic and microplastic litter.
- landscape analysis to document a baseline on marine plastics and waste management conditions in specific sites/targeted regions along the shore, including at regional level. A series of region-specific recommandations will be developed to address marine plastics and waste management challenges. Recommandations will be tailored to local situations where marine debris accumulated the most by taking into account engagement of local civil society stakeholders.
- Apply a material flow analysis and life-cycle assessment to identify hotspots where main policy actions should be concentrated for higher impact on marine litter.

66. Findings from the gap analysis will be used to conduct a comprehensive assessments of the national legal framework, institutional arrangements, and technical preparedness related to strengthening a national framework for circular economy in the plastics sector. The assessment will also evaluate the possibility to introduce standards in line with similar reglementation at regional level and to promote harmonization of rules and regulations. Common standards will be crucial to harmonize monitoring instruments and protocols, to enhance knowledge sharing and to improve the likelihood of effective joint strategies to mitigate transboundary impacts of marine littering. The assessments will include a prioritization of needs. This output will be closely linked to the focus of the National Plastics Management Policy and its associated Implementation Plan, currently pending approval of the Presidential Cabinet. It will also be coordinated in particular with the baseline study being developed under the Accra Plastics Management Pilot, implemented by Seureca/Veolia and funded by the UK Government (DFID).

67. The assessments will be conducted in line with the global strategies of a New Plastics Economy. Evidence from the 2017 report on the New Plastics Economy shows indeed that without fundamental redesign and innovation, about 30% of plastic packaging will never used or recycled, although reuse provides an economically alternative opportunity for at least 20% of plastic packaging. Additionally, by redesigning packaging and the systems for managing after-use, recycling could be economically attractive for at least 50% of the produced packaging.

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Output 1.1.2: National, implementation/actionable plans, and technical guidelines developed on bottom-up approach to circular economy in plastics and marine litter managementdeveloped in close cooperation with NPAP and within the context of the National plastics management policy (NPMP)

68. In close cooperation with the NPAP and in line with the National Plastic Management Policy national strategy, implementation plans, and technical guidance on bottom-up approaches to circular economy in plastics and marine litter management will be developed and endorsed.

69. These national implementation/ actionable plans will establish a comprehensive roadmap on how to effectively approach bottom-up circular economy practices, e.g. how to improve the economic viability of recycling and reuse of plastics; halt the leakage of plastics into waterways and ocean; and decouple plastics production from fossil-based feedstocks, while embracing renewable feedstocks. It will address, among other things, plastic reuse and recycling investments, plastic waste prevention and minimisation investments, PPPs, EPR, formalization, and technology transfer.

70. The following criteria, among others, will be adopted in drafting the national action plans:

- Prioritization (e.g. based on impact and urgency)
- Selection of appropriate BAT/BEP technologies
- Economic sustainability
- Accountability
- Sound and feasible time planning

71. The national implementation plans will also be expanded to include demonstration activities under Component 2, addressing: (i) plastic design, (ii) plastic reuse and recycling approaches and (iii) plastic waste prevention and minimization. Concrete details of the pilots will be developed during PPG including objectives, activities, tasks, timeframes, milestones, roles and responsibilities, budget, and monitoring and evaluation.

72. The implementation plans will build on previous plastic, marine plastic, and other waste management efforts in Ghana and other similar countries, and current efforts (e.g. Accra Plastics Management Pilot, Multi-Stakeholder Waste Recovery Platform, GRIPE, GIZ e-waste project and Environment360) and support the National Plastic Management Policy. Potential synergy with the GIZ initiative in Ghana on the sound management of e-waste may be explored during the PPG, as e-waste dismantling produced significant

amount of plastic often left uncared of or improperly managed. Their development will involve in-depth consultations with stakeholders, and will focus on reducing inputs, increasing recovery, and enabling recycling. Social and economic impacts and encouraging private sector participation will also be considered and appropriately addressed.

73. GPAP will act as the lead convener, facilitating dialogue across partners and projects, ensuring cohesion with the national strategy, and providing strategic investment insight to encourage carefully curated investments that maximize impact and minimize cost and risk.

74. Appropriate guidance, training materials, and other tools will also be developed to address the key gaps identified in the comprehensive assessments (Output 1.1.2) and provide the required guidance for the pilot demonstration activities under Component 2. For example, technical guidance documents will support project staff and key stakeholders and will cover the following aspects: national and international regulations concerning plastics, POPs, municipal and marine plastic litter, plastic reuse and recycling approaches, and plastic waste prevention and minimization. The development of guidance and training materials will be undertaken in coordination with national training, research, and academic institutions.

75. Since the focus of the new policies and legislation will include scaling up investment and innovation in plastic waste and marine plastic litter management, the project will support the development of guidance for national authorities such as MESTI/EPA, CSIR, other government departments and the private sector on how to minimize plastic waste at source and support GPAP to establish a coordination framework. Support for innovation will be scaled up, with emphasis on the development of smarter and more recyclable plastics materials, making recycling processes more efficient, and tracing and removing hazardous substances and contaminants from recycled plastics. The roles of MESTI/EPA, CSIR, other government departments, GPAP and the private sector will be clearly defined during the PPG.

<u>Output 1.1.3:</u> Responsive policies and regulations amended to institute and operationalise circular economy practices and business models, including green procurement procedures and quality standards.

76. Based on the comprehensive assessments (Output 1.1.1); in coordination with the development of a national implementation plans (cooperation with NPAN), and guidelines on the circular economy in plastics management (Output 1.1.2); and in support of the National Plastic Management Policy, recommendations will be made on how to strengthen existing legislation, regulations, and other legal tools specifically on plastic manufacturing and plastic waste.

77. In this sense responsive policies and regulations will be amended to a circular economy, which routes materials, parts and products back into use several times and creates more value and less waste. It is an alternative in which value is maintained for as long as possible, products are designed to last, and the generation of waste is minimized. Through circular practices and business models – in the case of plastics especially reduce, replace single-use with bio-degradable plastics, reuse and recycling to production of quality 2nd materials for local and international markets, product-as-service, and waste-to-energy - everything gets additional lifetimes, is reused as an input material, part or component, or energy source, or as a last resort, disposed of. The retained value in products and resources continue to create new business opportunities (on the local and international market), income and jobs; many times, and not only once as in a linear industrial system where products usually end up in landfills at the end of their first life with negative impacts on health and the environment.

78. The following principles and approaches, which are articulated in the draft National Plastic Management Policy, will be addressed:

- Incentive circular economy practices throughout the plastic value chain (e.g. eco-design, RECP, innovation, addressing the issue of single-use plastics and fishing gear)
- Stopping littering at sea by establishing new rules on port reception facilities to tackle sea-based marine litter
- Support research and start-ups (e.g. related to biodegradable plastics or plastic recycling, and alternative product delivery service models)
- Measures for strengthening markets for recycled plastics and bio-based plastics (including green public procurement)
- Introduction of standards for recycled content (for the national and international market)
- Support for development of circular collection, separation and processing infrastructure
- Empowering municipalities with sufficient financial and technical resources to induce product designs, collection, separation and recycling

79. Synergies with existing initiatives such as the One District One Factory Programme, Ghana Export Promotion Centre, Ghana Investment Promotion Centre, trade and industry associations may be envisaged when applicable.

80. Specific focus will be placed on Extended Producer Responsibility (EPR) approaches and market-based incentives, which gives producers a significant responsibility – financial and/or physical – for the collection/recovery and treatment or disposal of post-consumer products. EPR is one of the legal instruments that will be promoted through the National Plastic Management Policy and its attendant legislation, this pilot will provide important insight into the practical applications of the approach. Assigning such responsibility could in principle provide incentives to prevent wastes at the source, promote product design for the environment (such as material substitution and decreasing dependency on raw materials), and support the achievement of public recycling and materials management goals. EPR shifts the cost of managing post-use products partially or fully from local governments to the producing industry. It is based on the polluter pays principle, which holds that those who produce the waste are responsible for recycling and disposal. By requiring industry to take back products at the end of a product's life, industry can best design products to enhance their reusability and biodegradability.

81. Throughout 2020, GPAP will be facilitating a diologue among all relevant actors to co-design an EPR scheme appropriate for Ghana with buy-in across the board. This project will advance GPAP's efforts by providing resources to establish the necessary frameworks for governance, such as the GPAP Secretariat that will model the Resource Recovery Secretariat described in the National Plastics Management Policy. The project will also support insutry and local government to demonstrate best practices in community-level take-back schemes well coordinated with regional and national recycling infrastructure.

Output 1.1.5 A Secretariat/ national commission for plastic pollution established

82. Establishing a secretariat / national commission will permanently enchor the government's efforts of compating plastic pollution within government-related decision-making entities. It will also streamlines anti plastic pollution policies and projects experiences and outcomes into the government and stakeholders organs.

83. Such Commission will facilitate related works towards enforcement of policies and devising endorsement tools and mechanisms, in order to ensure the implementation of homogenous circular economy based practices at the consumption and production sides of the value chain.

Component 2: Capacity building, technology transfer, PPPs, and demonstration activities for a circular economy in plastics management

Outcome 2.1: Circular principles in the plastic sector to deliver global environmental benefits promoted, demonstrated, integrated, and mainstreamed

Output 2.1.1: Stakeholders',from the public sector including targeted municipalities, sector associations, and public trained on respective policies, regulations and technical guidelines within the NPMP, including the gender dimension of all.

84. The primary legislation enforcers will be trained on the implementation aspects including interpretation of the provisions of the new or revised policies, legislation, and regulations in close cooperation with the NPAP supporting the National plastics management policy (NPMP). An assessment will be conducted in collaboration with regulators to identify any impedements to enforcement, such as lack of equipment, insufficient workforce or overlapping mandates. Interventions will be designed to fill identified gaps and integrated into pilot projects (Output 2.1.4). To facilitate prosecution of violators, a prosecutor course will be specifically designed and conducted for all eligible environmental inspectors and other relevant stakeholders.

85. The secondary enforcers, such as stakeholders from line ministries, industry, NGOs, and other stakeholders, will also be trained to fully familiarise them with the provisions of the new or revised policies, legislation, and regulations and to clarify the role that they can play to support the full implementation of the legal framework.

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

86. Capacity building activities will be targeted towards key actors of the private sector and will improve the understanding and implementation of new regulations, procurement procedures or quality standards developed under component 1. Training activities should focus on the economic interest or technical constrains of the private sector and should aim at highlighting business outcomes in line with regulations in line with a circular economy framework. On a technical level, training will build technical capacity in Resource Efficient and Cleaner Production (RECP) and BAT/BEP along the plastic supply chain, including achieving quality standards, supply chain management and export market linkages for plastic exporters, e.g. for the exportation of pre-treated plastics and recycled plastic products and for products to meet importers quality standards.

Output 2.1.3. Sustainable financing and business models developed and applied in the pilots

87. The fundamental pillar of the GPAP approach is to mobilize financing into strategic investments for large-scale infrastructure needed in the circular economy (e.g. plastics recycling and bio-plastics manufacturing facilities). This output will enhance GPAP's work to further develop sustainable financing models, e.g. attracting financing from banks into Circular Economy business models to ensure that the pilots and ups-scaling activities will have long-lasting effects and sustainable impacts.

88. Sustainable financing tools are imperative for the transition to a circular economy in many regions of the world, and especially sub-saharan Africa where interest rates on the traditional financial market often exceed 40% and therefore greatly limit start-ups and businesses focused on the triple-bottom-line (people, planet, profit). This project will support GPAP, the Ministry of Finance, international banking institutions and impact investment funds to develop, test and scale financial tools for de-risking investment and creating enabling environments for circular business models.

Output: 2.1.4 Pilot projects to demonstrate circular economy approaches along the plastics value chain and to achieve GEBs

89. This output will focus on promoting capacity building, technology transfer, and PPPs through pilot demonstration activities for a circular economy in plastic management and marine plastic litter prevention in Ghana. As outlined in output 1.1.3. responsive policies and support for Circular Economy Activities along the plastics value-chain and for single-use plastics alternatives alternatives to achieve strategic targets identified in the NPMP along the plastics value chain will be developed upfront during this project. This includes the development of green procurement procedures, quality and coding product standards (both for import materials and export). Through the pilots it will be demonstrated that green aspects will be incorporated into product design (e.g. degradable plastics) as well as quality standards will be ensured for the products themselves (e.g. for setting quality standards for imports, and for selling it on the national and/or export to international market). The pilots will also have a strong focus on creating a shared economy, e.g. including aligning demand for recycled products (e.g. that national companies are actually using Made in Ghana products made from recycled content) through the use of tools such virtual platform; through innovative business models (e.g. reverse logistics of materials) and/or other public-private-sector partnerships along the plastics value-chain.

90. At least four pilots will be undertaken – in Ashanti Region, Upper Eastern Region, Greater Accra Region, , and Western Region – using the implementation plans developed under Output 1.1.3 and the draft National Plastic Management Policy towards creating economic incentives for industries to increase the utilization of resources (e.g. during design), addressing plastic reuse and recycling approaches and plastic waste prevention and minimization. These follow the key principles of the draft National Plastic Management Policy, which include reducing inputs, increasing recovery, and establishing an enabling environment for plastics recycling led by the private sector and appropriately supported by government. In this way, the value of the plastic product is maintained from one product life-cycle to the next.

91. The aim of the pilots is to demonstrate the the industrial sector, such as associations of industrial end-users of plastic packaging, collectors and recycling business are able to produce secondary materials for local market and or for export and R&D as well as developing alternative packaging materials and/or converting difficult to recycle plastics into economically valuable and environmentally sound products. Potential pilots, as outlined below will be short listed based on pre-defined criteria.

92. Guidance and training materials developed under Output 1.1.4 will be provided to all municipalities and key stakeholders to support implementation of the demonstration pilot activities. In coordination with Output 2.1.1, hands-on training conducted by international and national experts will also be provided to project staff, environmental authorities, private sector staff, communities, and other relevant stakeholders (including a train-the-trainers approach) covering the various steps of the demonstration pilot activities. All pilots will also be coordinated with the awareness raising activities under Output 2.1.2.

93. The pilot demonstration activities will build on previous and current plastic waste and marine plastic litter management efforts in Ghana and other similar countries. Achieving positive social and economic impacts and encouraging private sector participation will be a core part of the activities. During the project preparation phase (PPG), the private sector partners and civil society organizations that will participate in the pilots will be identified based on agreed criteria. The project will also emphasis the inclusion of youth and women's groups among the local civil society organizations and strengthen the mainstreaming of gender issues throughout the project design and implementation.

94. Pilot demonstration will be designed around circular economy approaches along plastics management, including the stages of design, production, recycling, use/end-of-life management.

95. The entire process of developing, designing, implementing and monitoring the pilot projects will be recorded in a user-friendly manner to be disseminated by GPAP in other partnering countries so that lessons learned are immediately and easily available for replication.

Circular economy practices within GEF project			
Enforcement of policy measures for all pilots			
(a) Incentivize circular economy practices throughout the plastic value chain (e.g. procurement procedures, eco-design, RECP, material and product delivery, innovation)	(b) support research and start-ups, e.g. related to biodegradable plastics production, plastic recycling, alternative product delivery models	(c) measures for strengthening national markets for recycled plastics and bio-based plastics, including shared economy schemes	(d) introduction of quality standards imported plastics and for nationally recycled content
(e) support for development of circular collection, separation and processing infrastructure	(f) Empowering municipalities with sufficient financial and technical resources to induce deman for eco-product designs, waste plastic collection, separation and recycling		

(I) Design and production of plastics from alternative feedstock	**Pilot :** ***Design and production stage: Cleaner production, resource efficiency and use of material substitutions to strengthen the production of plastics from alternative feedstock (e.g. using agricultural wastes and other biodegradable material) in Accra***

Rationality: Within a Circular Economy, the necessity of plastic packaging should be limited. One way is to limit the current use in packaging by substitution with renewable-based materials (material substitution). In addition, resource-efficient practices should be built towards minimization of resource consumption (such as raw materials for plastic production, water, energy) and reducing of waste (such as air emissions, waste water, solid waste) and at the same time optimizing the production process (leading to economic benefits). Potential RECP practices (to be assessed during PPG) might include good housekeeping, input change, better process control, equipment modification, technology change, on-site reuse and recycling, production of useful by-product, product modification (e.g. biodegradable plastics).

Pilot: Greater Accra Region (e.g. Yeeco Plastics Ghana Limited are producing biodegradable plastic bags) to be determined during PPG)

Pilot interventions

(i) Application of policy and quality standards, such as procurement procedures, export standards and business models to ensure the use of biodegradable products on the national market

(ii) Investment and technical cooperation to promote or upscale material substitution from traditional plastic to biodegradable and environmentally benign materials

(iii) Strengthening RECP in biodegradable plastic production, including the introduction of quality standards and environmental management

(iv) Financiang and business model creation to ensure sustainability/value-chain creation of this pilot

Global Environmental Benefits	(a) Optimization of production process (less raw/ input materials, water, energy) reducing environmental inputs (bio-degradable) and costs- less single-use plastics	(b) Reduction of plastics entering end-of-life stage, including marine littering, through strengthened policy measures	
(ii) Linking pilot I to national companies and international hubs to ensure demand and sustainability	**Pilot: Creating demand and shared economic models using bio-degradable plastics within the national plastics recycling industry**		

Rationality: Demand for nationally-produced biodegradable plastics needs to be created to ensure economic-viability within the national packaging and service industries

Pilot: Greater Accra Region (e.g. Yeeco Plastics Ghana Limited) and national companies manufacturing plastics to be determined during PPG			
Pilot interventions (i) To reduce plastic waste accumulation in the environment, on land and water, causing negative environmental and health impacts, through minimization of waste plastics production, such as material/product substitution with biodegradable plastics and bio-based alternatives (e.g. on-the-go cutlery made from bamboo or coconut husks) (ii) Cost-benefits and technical feasibility of selected companies cooperation to replace the use conventional plastics (i.e. petroleum based) with biodegradable plastics and bio-based alternatives produced from Pilot (I) for their products (iii) BAT/BEP pilot at selected companies for designing for less plastic packaging, avoid multi-layered plastics and replacing conventional plastics with biodegradable plastics to minimize plastic waste production (iv) To connect national recycling industries with international demand for secondary plastics as feedstock of verified quality to increase demand, price and sustainability of business models			
Global Environmental Benefits	(a) Reduction of non-convention plastics during product manufacture (due to substitution with degradable plastics produced under pilot (I)	(b) Reduction of plastics entering end-of-life stage, including marine littering, through strengthened policy measures and shared economic models	
(iii) Linking PET (i.e. water, soda and juice bottles) recycling with demand-driven approach (e.g. virtual platform)	**Pilot: PET plastic recycling, demonstrating capacity building, technology transfer, and PPP pilot in Accra, including virtual platform**		
Rationality: Within a circular economy, products should keep its value through re-design, re-use, remanufacture or recycling. Final disposal should be minimized. Plastic recycling, e.g. PET recycling, is an option to collect, separate, process and re-sell plastic pellets on the national and/or international market. 1. The private sector's resources, expertise, experience, and innovation is crucial to enable the development of an efficient, comprehensive, and economically viable national plastic waste management system to manage the collection, sorting, washing, resizing, identification, separation, and compounding of plastics, and to create new, more sustainable products that fit more readily into a waste minimising circular economy frameworks. This will also lead to the creation of decent jobs and reduction of the environmental burden.			
Pilot: Greater Accra Region (e.g. during PIF initial consultations were held with a number of private sector entities including: Zoomlion Ghana, which specialises in delivering waste management services in Ghana; SGS Renovo Ghana, which specialises in providing sustainable e-waste management solutions in Ghana; Association of Ghana Industries (AGI)			

Pilot interventions: (i) Application of policy and product standards, such as procurement procedures, product standards and business models to ensure the use (creation of demand) of recycled PET bottes on the national market. (ii) adopting BAT/BEP on PET recycling, including market analysis, PPP and jobs creation (iii) During PPG, the creation of a virtual platform to ensure national demand will be explored.			
Global Environmental Benefits:	Increased PET collected, recycled and traded on the national/international market; thus, reducing end-of life plastics		
(iv) Promotion of collection of hard-to-recycle plastics and innovative recycling applications (e.g. road paving blocks, building components, chemical recycling into fuel)	**Pilot: Collection of hard-to-recycle plastics (e.g. brominated plastics used in electronic devices and chlorine-containing plastics used in packaging lables, floor laminates and piping) and exploration of innovative de-contamination and recycling applications**		
Rationality: Collection of plastics whose recycling is not favourable in conventional recycling schemes (e.g. POPs-containing) and explore new and innovative recycling applications, such as road paving blocks, chemical recycling into alternative fuels, in partnership with universities and international research laboratories, considering feasibility and practicality of such interventions in Ghana.			
Pilot: to be selected during PPG phase			

Pilot interventions:

(i) Community-based organisations will be involved in managing a number of easily accessible collection/buy back centres in urban areas, rural communities, and commercial areas (e.g. markets, and gas filling stations) that will be created or upgraded and which will support recycling and information dissemination functions all plastics, including those not traditionally favourable in conventional recycling schemes. Partnerships with Universities and international knowledge networks will be established to explore possibilities of recycling into non-consumer products and chemical recycling.

(ii) To support an increase in recycling rates, synergies will be explored with the private sector (e.g. in the form of a PPP) and possibly aligned with the One District One Factory Programme, which aims to establish at least one factory or enterprise in each of the 216 districts of Ghana.

(iii) Collaboration with private sector partners will ensure that the plastic waste is effectively decontaminated and used for the remanufacturing of new plastics or conversion into other valuable products (e.g., roads, clothing, and footwear). This can also be coupled with stimulus support developed under Output 1.1.3 (e.g. providing import duty waivers on equipment and reducing taxes for a fixed start-up period (developed under Output 1.1.3). Cooperation could also be made with the current initiative from Zoomlion to distribute 1 Million households' bins in Ghana, in order to improve collection of plastic waste and segregation at source and to ensure that plastic collected will be used for remanufacturing.

(iv) To stimulate research, investment, and SME participation and growth, a local micro-credit financing mechanism will be established on a pilot basis.

Global Environment Benefits:

(i) Reduction of plastic waste, especially POP-containing plastics, through collection and recycling

(ii) Collection, segregation and environmentally sound disposal of EEE-related waste that potentially contain PDBEs.

(v) Awareness-raising and culturally-appropriate plastics use, collection and recycling at community level (schools, household, business, service-providers, associations, clubs, faith-based institutions))	**Pilot: Awareness and involvement of communities to reduce the use of single use plastics and support collection/buy-back and recycling in communities to upscale recovery, recycling, and linking with existing national plastic recyclers in Sekondi Takoradi, Western Region, Tema and Greater Accra**

Rationality: Users of plastics should not only be supported by making circular economy practices (e.g. not using single-use plastic products) but also collection/buy back centers should be supported to ensure that high volumes of plastics are consistently available for recycling, thus reducing plastics entering the end-of-life stage and increasing economic viability of new recycling facilities (ensured feedstock and streamlined collection logistics)

Pilot interventions: (i) A number of selected communities (based on pre-defined criteria) will be identified and a 3 parties agreement (communities/municipalities, recycling enterprises and the GEF project) will be made to execute these pilots. (ii) This pilot, in partnership with municipal government counterparts and potential collaboration with CSIR for awareness-raising and establishment of business models will involve selected communities living in coastal regions to collect, separate, compress and package plastics (e.g. in bins), and connect them with recycling enterprises. (iii) The pilot will also test the establishment of collection/buy back centres in the selected coastal communities (e.g with the One District One Factory Programme,). This approach, which is outlined as a strategy in the draft policy, could involve the use of community-based organisations, especially those involving women and youth. In Ghana, community-based organized organizations such as Environment360 have led the way in the collection of marine plastic litter along the Ghanaian coast line. (iv) This will also be linked with awareness-raising, e.g. schools, in schools, faith-based institutions, local SMEs and households etc. to ensure users of plastics are being linked the new collection/buy back centres. Reclaimed plastic will then be transported to recyclers who will reuse it rather than use virgin plastic. Plastic collection sites will be selected based on where clean-up efforts could have the biggest impact and where the plastic could easily be transported to existing recycling facilities, such as in markets, at schools or faith-based institutions. (v) Linking community-based collection/buy back centres with national recyclers, whose BAT/BEP practices will be improved through technology transfer to increase recycling rate or upscale their production capacity (e.g. Plastic REVolution Foundation's initiative, Comeph and Associates (Climate Innovation Centre Ghana), Nelplast industry.			
Global Environmental Benefits:	Increased plastics collection, recycling and trading on the national market; thus, reducing end-of life plastics		

Component 3: Communication strategy and knowledge management

Outcome 3.1: Coordinated action and synergies with key international,regional and national partners and stakeholders to support achieving the objectives of Ghana's National Plastic Action Partnership (NPAP) and outcomes of the NPMP

Output: 3.1.1 :Communication strategy developed and implemented to raise awareness on the negative impacts of plastic pollution on natural environmental systems (including marine litter, POPs, human health) towards consumer behaviour change

96. A communication strategy on plastic waste and best practices will be developed as one of the operational tools of the National Plastic Management Policy, and materials such as brochures and posters will be prepared for different target groups. The strategy will promote the avoidance of the "take-make-dispose" approach; facilitate the acceptance of recycled plastic products; disseminate and build on successful case studies; incorporate sound plastics management concepts into school curricula; and involve stakeholders at the

community level. At the same time the promotion of plastic alternatives such as the use of biodegradable and compostable packaging materials will be raise the awareness of the possibility of material substitution of plastic materials.

97. This awareness raising campaign will address some of the strategies outlined in the national management policy including: revising the School Health Environmental Programme (SHEP) curriculum to include best practices in waste management; launching a national pride campaign "Clean Up Ghana to Build Up Ghana – Do Your Part!"; hosting informative-entertainment events in public spaces, such as markets and transport hubs (e.g. song and dance, drama, pamphlet distribution, clean-ups); and hosting cost recovery competitions between schools, between cities and regions, and between churches and sports teams. Local communities will have access to awareness raising materials in their own local languages and trainings at the community level will be organized. Key partners such as Environment360 and others that are active at the community-level will be closely engaged.

Output 3.1.2: Effective knowledge management done through the NPAP/UNDP plateform sharing experience, raising awareness, promoting replication and best practices on the national level.

98. The project will work with UNDP-facilitated Waste Recovery Platform in Ghana.. The knowledge exchange platform will serve as a one-stop shop solutions platform (physical and digital) that connects all the stakeholders along the waste management and recovery chains, such as: different government departments with all actors; researchers with start ups and producers; waste producers with those interested in recycling; investors with bankable projects; and the informal sector with formal sector actors.

99. The Platform will also draw on innovative experiences from other countries to support the development of a digitally-enabled one-stop solution platform suited to Ghana's needs to connect key stakeholders with data and technological solutions for resource recovery. This is expected to: provide a space for engaging citizens to reduce, reuse, recycle and thus be part of the circular economy; demonstrate the potential economies of scale for waste recovery businesses whilst meeting social and environmental needs. This could be a basis for scaled up public and private investments in waste recovery; facilitate new types of collaborations between research institutions and private sector for the development and testing of innovative solutions; create an online market for recycled products and /or export/import of valuable waste streams, thus helping other initiatives to be more viable/scale-up; and facilitate stronger connections between the formal and informal sectors and also create the opportunity for the informal sector to formalize and scale -up. Tool available or to be featured as part of this platform includes:

· *The Ghana Waste Recovery Platform: The* objective is to create the opportunity for government bodies, private sector, academic institutions, and all interested parties to access data on waste resources to take policy and economic decisions. It will house a repository of data, a geospatial waste resource map, a library of recovery technologies and a Resource Optimization Calculator. This platform will be the hub that connects individuals, waste buyers, collectors, and regulators to share information on waste management in the country and linking local and international stakeholders.

· *Waste Resource Map and Web-based mobile apps:* The mobile app can be thought of as an Uber for recyclables. The map is expected to be used to strategically plan the deployment of waste management technologies and to increase efficiency and pricing transparency in materials trading. The technologies for moving waste materials into valuable products (e.g. affordable housing materials, tissue paper, compost, energy) differ depending on the quantities and types of waste materials available as feed stock, demand for products made from waste materials, population densities, waste generation rates, existing manufacturing activities, available resources, and foreseen demand for products. In addition to providing need data for strategic long-term planning, resource maps will track volumes and pricing of materials traded, which can be used by entrepreneurs and financial institutions to validate business models, reducing investment risks. The platform and the map provide the space for the development of various apps – to report on waste not being collected or to link those in the informal sector or to purchase waste etc.

· *Library of Recovery Technologies and Resource Optimization Calculator: The* Library of Recovery Technologies is a compilation of technologies and management systems employed around the world, with emphasis on the 'Global South,' to convert waste materials into valuable products. The Resource Optimization Calculator will be developed as a plug-and-play, interactive wiki allowing users to make unique queries and priorities (e.g. "lowest-cost system", or "maximize organics recovery").

100. In addition, a project website will be developed and hosted by EPA to provide a central location for information on the project. It will be designed to facilitate stakeholder engagement; sharing project information and guidance and training materials; and enabling stakeholders to submit queries and input regarding plastic waste management techniques, technologies, and project activities. Public access will be granted to all resources that are of public relevance such as project performance reports and guidance materials on plastic waste management and the circular economy framework.

Output 3.1.3: A knowledge exchange platform to promote national and regional partnerships, learning, 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

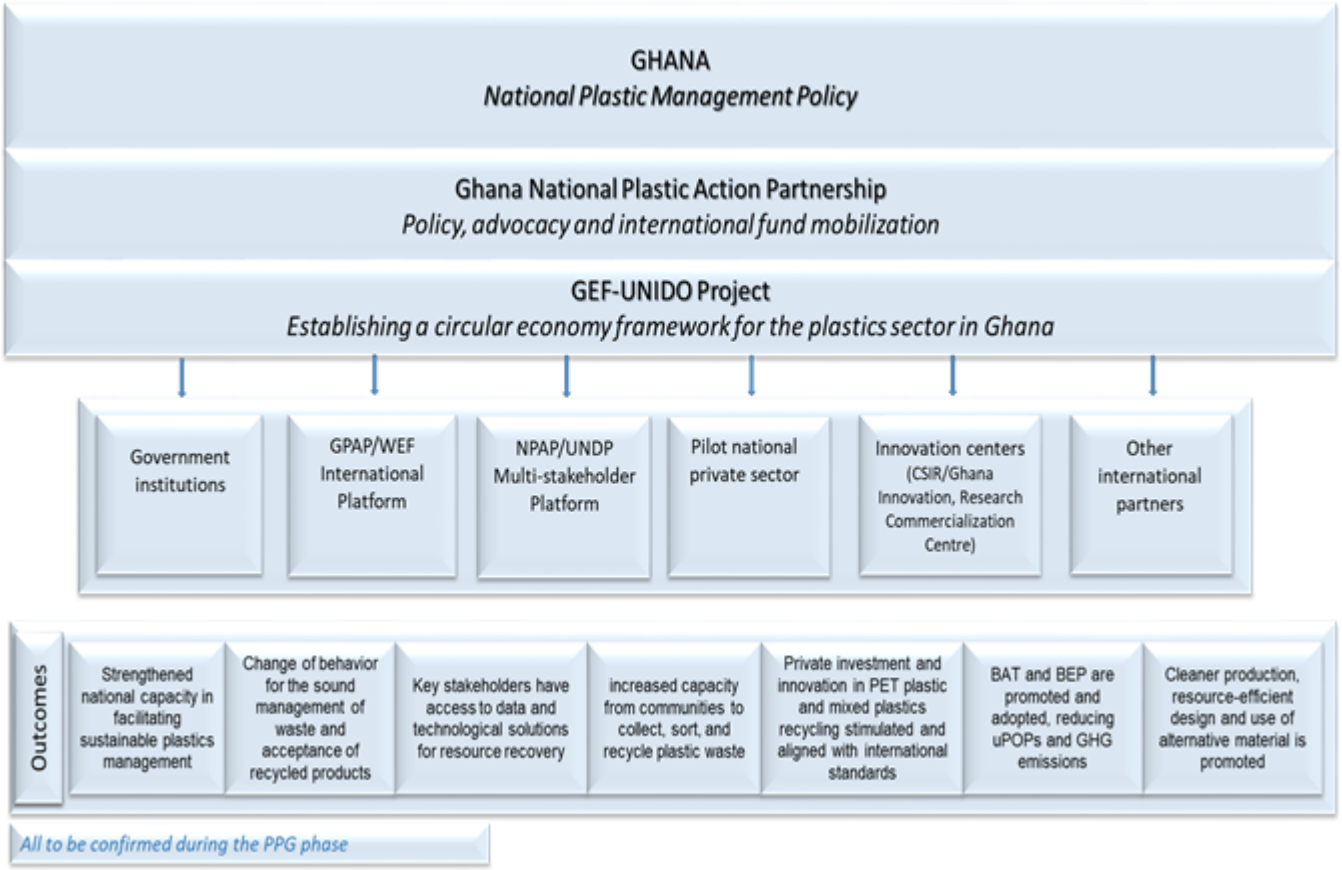
101. The project will enhance ongoing efforts of the joint-executing partner GPAP, hosted by the World Economic Forum, to streamline experiences across GPAP partner countries such as Indonesia, and to accelerate the speed at which GPAP can expand to include more countries for greater global impact. Knowledge management includes the documentation of experiences and processes in easily adaptable formats including websites presentation, workbooks, videos, catelogues and other intellectual and learning tools. Great care will be taken to effectively disseminate knowledge and to enable peer-to-peer learnings among key stakeholder groups in various GPAP countries through regular teleconferences, webinars, and face-to-face meetings. This will include a focus on sharing lessons learned from the project and in particular the pilot demonstration activities.

102. On October 1, 2019, the Government of Ghana represented by the President of the Republic of Ghana, H.E. Akufo-Addo has formally joined the GPAP as its first African member dedicating actions addressing the reduction of plastic waste and pollution. Ghana is the second country to partner with GPAP, and it will work closely with MESTI to develop a national roadmap for sustainably managing and reducing the country's plastic waste challenges.

103. The Ghana National Plastic Action Partnership (NPAP) was announced on October 1, 2019, and will support the country's public, private and civil society sectors in transitioning to a circular plastics economy, which directly addresses the root cause of plastic pollution by fundamentally reshaping the way plastics are produced, used and re-used. As part of broader strategic efforts to accelerate the reduction of plastic waste and pollution in Ghana, the NPAP will work in close alignment with the National Plastic Management Policy championed by MESTI, and will transform the management of plastics across the value chain, injecting sustainability and reusability into every step of the plastic life cycle.

104. This GEF-project will support the implementation of the NPAP and outcomes of the NPMP through knowledge management , both within Ghana and internationally, and help strengthen evidence-based knowledge management to inform effective policy making and interventions on plastic waste management and marine litter reduction.

105. This will build on the work already underway by GPAP and MESTI to develop a national public-private plastic management partnership. The PPP aims to translate political and corporate commitment into concrete actions and address plastic waste and marine plastic litter management related issues, coupled with scaled up private sector investment. Other international partners such as the Commonwealth Clean Oceans Alliance and GRIPE, already present in Ghana, will also be regularly engaged.



106. The project will be designed and coordinated so that Ghana's approach to address plastic waste and marine plastic litter problems can serve as a model to be adapted and implemented in neighbouring countries and at a regional level. Promotion and facilitation of replication, information sharing, and adoption of best practices and policies by other African countries will be promoted. Regional cooperation can be facilitated by implementing an operation structure of regional cooperation. It may be achieved through reaching agreement on common principles for plastic reduction and marine environment protection, common instruments for data collection and monitoring, common standards for circular economy practices (promotion of recycled content, alternative material and effective design) etc. Cooperation mechanism for transboundary diagnostic, emergency responses (floods) and regional strategic action programing.

107. The project will support GPAP to package and deliver training seminars for decision makers and key stakeholders of the region to be invited to Ghana for twining capacity building whereby Ghanaian entities can share their experiences and create working networks with their counterparts in other countries in the region to encourage replication of best practices. Training semiars will include study tours visits of the pilot demonstration activities, peer-learning policy courses, regulatory and enforcement workshops, technical trainings on supply-chain management and recycling optimizations, among others..

108. Regarding coordination with key international partners at the production value chain, UNIDO, in coordination with GPAP, and the UNDP-facilitated 'Waste' Recovery Platform will utilise its convening mechanism to facilitate technology transfer in view of improving the quality of products in line with international standards requirements. The objective is to facilitate the export of plastic recycled and remanufactured products from Ghana to the international market, in order to close the loop of the value chain in a circular economy framework. Other area of international cooperation will aim at encouraging designing for less plastic packing facilitating after use recycling, and promoting plastic alternatives. This will be undertaken through facilitating bilateral consultations, agreements, and site visits during project implementation.

109. Due to the ubiquitous nature of plastics in everyday life and in every economic and industrial activities, the legislative and economic instruments (Outputs 1.1.3) necessary for transforming the linear plastics economy into a circular plastics economy are also cross-cutting and falling within the mandate of numerous ministries, agencies and actors. Therefore, the National Plastics Management Policy has advised the creation of a Secretariat to act as the "nerve-centre" for all things plastics-related to provide coherency and coordination across the economy and regulator regime. GPAP will support MESTI to establish the framework for such a Secretariat, which will ensure long-term sustainability and local ownership of a nation circular plastics economy framework in Ghana long after the completion of the GPAP in Ghana (NPAP) and this project.

110. In accordance with the National Plastics Management Policy, the Secretariat should become a permanent, operational, independent organization. Therefore, the Secretariat will need to rapidly develop institutional, managerial and technical capacity that will enable it to deliver an extensive work programme, which calls for a wide-range of technical, managerial and governance competencies, and will require staff and financial resources to be brought on board promptly.

111. The Secretariat will need to engage and support a wide range of stakeholders, including many governmental ministries, agencies and regulatory bodies; financial institutions and intermediaries; the private sector with acknowledged nuanced needs across the plastics life-cycle and value-chain; implementing agencies; civil society organizations; bi-lateral and multi-lateral institutions. It needs to assist these diverse stakeholder groups and economic sectors to implement a tailored set of operational and policy decisions that will help shift the national economy onto a sustainable plastics management pathway with many short-term results stemming to long-term societal shifts. To this end, the Secretariat will need to be able to develop a pipeline of programmatic, policy and operational approaches, as well as projects that can achieve the desired results.

112. The Secretariat should aim to become a modern independent supporting institution through the use of best available technologies, systems and processes, human resource management practices, and continuously seek efficiency and effectiveness. Features of such an institution:

- Service-orientation, providing its services ensuring positive engagements with the public- and private-sectors, civil society groups and multi- and bi-lateral agencies;

- Culture of seeking results, being responsive and working collaboratively, creating an institution that is flexible, adaptable and that operates with best-practice standards by focusing on clear priorities;
- Teamwork-oriented human resource strategy, including frequent performance feedbacks at all levels and a performance-based reward culture;
- Overarching aim for technical excellence in sustainable plastics management with a private-sector, market-based mentality, and supported by a modern and advanced information and communication technology (ICT) system.

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

Output 4.1.2: Project monitoring plan designed and executed

113. Project monitoring plan is designed and excuted during project implementation.

Output 4.1.2: Mid-term review and terminal project evaluations conducted

114. Project monitoring and evaluation (M&E) are conducted in accordance with established UNIDO and GEF procedures. The M&E activities are defined by Project component # (numbers) [to be filled out]) and the concrete activities for M&E that are specified and budgeted in the M&E plan. Monitoring will be based on indicators defined in the strategic results framework (which details the means of verification), and the annual work plans. Monitoring and Evaluation will make use of the GEF Core

Indicators, which will be submitted to the GEF Secretariat [to be filled out, i.e. two or three] times during the duration of the project: at CEO Approval, at [mid-term review], and at project closure.

115. UNIDO as the Implementing Agency will involve the GEF Operational Focal Point and 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.

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

116. This project is fully aligned with GEF Chemicals and Waste, Program 1 on Industrial Chemicals and International Waters Focal Areas, Objective 1. which addressed pollution of coasts and marine ecosystem.

117. Chemical&Waste Program 1 on Industrial Chemicals 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. Emphasis will be placed on private-public partnerships, involvement of multiple mechanisms (such as policies, regulations, technical and capacity assistance and financing/business models) addressing the value-chain of plastic products.

118. GEF-7 Chemical & Waste also places more emphasis on "facilitating the reduction of chemicals through stronger alignment with the shift to sustainable production and consumption and through stronger private sector engagement including supporting the enabling environments for industry to adopt better technologies and practices aimed at becoming more environmentally sustainable, including eliminating POPs, careful consideration of the incentives for private sector involvement, and streamlined processes for easier private sector navigation. More emphasis will also be placed on developing sustainable financing at the national/regional level to sustainably eliminate chemicals covered under the Conventions and at the same time facilitate the sound management of chemicals and waste."

119. The GEF-7 directions on International Waters recognize the need to transform the entire life cycle of plastics to reduce marine plastic pollution and through this project GEF funds will be invested in strategic Circular Economy initiatives to promote the adoption of closed loop production and consumption patterns instead of traditional linear approaches. This project will combine important synergies between the International Waters and the Chemicals and Waste Focal Areas to address specifically 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 inding the environment including oceans, if not propperly 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."

120. This project strongly addresses the above approaches with a focus on the circular economy, PPPs, and sustainable private sector involvement and scaled-up investment. Ghana has already developed a forward-looking draft national plastic waste policy and shares the same strategic approach as the GEF-7. Plastics often contain a complex blend of chemicals substances (additives) which give polymer different properties. Once in water, plastic components can adsorb and/or absorb substances which can include POPs. Many of these substances can be released to biota ingestinc plastic particles, raising concerns about potential adverse effects on human health and the environment.

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

121. Without the involvement of the GEF, plastic waste and marine plastic litter management would probably improve marginally due to limited investment. This will lead to a severe impact on the environment (land and sea) and human health as well as a loss of valuable resources, which could otherwise be recovered to re-enter the production process.

122. GEF funds will help Ghana to develop capacity and an enabling environment to develop a circular economy framework that facilitates sustainable plastics management, including scaling up investment, modifying plastics production and alternatives, consumer use, and plastic waste management, and ultimately reduces uPOPs and greenhouse gas emissions. The project will also enable Ghana to comply with its obligations under the Stockholm, Basel, and Rotterdam Conventions, among others. The capacity of national stakeholders will be strengthened to establish plastic reuse and recycling approaches and plastic waste prevention and minimization, including a strengthened legal and institutional framework, technology transfer, establishment of PPPs, and implementing demonstration activities for a circular economy in plastics management.

123. The GEF funding will also be used to support national, regional, and international activities that would not occur without its involvement. For example, coordination with GPAP, RECs (such as ECOWAS, AMCEN, COMESA, and SADC), and other key partners. The role of the GEF funding will be also to attract substantial co-financing provided by other stakeholders within the public and private sectors.

124. The project will achieve its impact through the combination of components and its show-cast of several pilots along the plastics value chain in Ghana demonstration economic, environmental and social benefits achievable through better sound product design, manufacture and use. Co-financing is essential for achieving the objectives of this projects, especially because the pilots because they be the show-cast of achieving benefits through Circular Economy for future replication.

125. The global outcomes to be achieved from this project include a strengthened institutional capability to implement a circular economy framework that facilitates sustainable plastics management leading to improved human health and environment, and reduction of uPOPs and GHGs.

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

126. Some plastics contain toxic chemical additives, including POPs, which have been linked to health issues such as cancer, mental, reproductive, and developmental diseases. A failure to act could result in more plastic than fish in the Ocean by 2050. Scaling up innovations and investment in plastic recycling, product substitution and other related will have a direct benefit of not only reducing mercury emissions, but the reduction in toxic fumes will have beneficial impacts on marine life, social and economic well being of the people.

127. Plastics contribute to economic growth, but their current production and use pattern, on a linear model of 'take, make, use, and dispose', is a primary driver of natural resource depletion, waste, environmental degradation, climate change, and has adverse human health effects. The project will support Ghana to establish a circular approach that reduces these impacts.

128. As outlined in the baseline section of the draft PIF, for Ghana estimations of solid waste generation, including plastic waste in the waste stream, range from 13,000 to 30,000 tons of solid waste daily. Only 22% to 75% of solid waste are properly disposed of depending on rural-to-urban areas. Using 13,000 tons and taking a percentage of 50 % (PPG to adjust based on selection of final pilot areas), this means 6,500 tons daily is not being disposed of properly. According to the 2010 Housing and Population Census, 10.7 % of solid waste are openly burnt, meaning 507 tons daily (*365=185,055 tons). Using the UN Environment Dioxin and Furan toolkit this equals to 7.402 gTEQ/a in air and 0.185 gTEQ/a in land. This total amount includes dioxin and furan being generated from open burning of plastic waste, because plastic waste represents 14% the total amount of solid waste (due to the lack of separation and collection at source and landfill). Therefore, estimations to be confirmed during PPG show that 1.036,28 gTEQ in air and 0.0259 gTEQ in land is associated with plastic waste.

129. The GEF grant will support plastics management resulting in a reduction of plastic waste entering the end-of-life stage, including plastic littering. As mentioned in the baseline, according to Ghana EPA, 3,000 MT of waste plastic are generated across Ghana every day, which constitutes 14% of the entire municipal solid waste stream, and 2-5 % only are being collected daily.. Taking into account that only about maximum 5% (60-150 tons) of plastics are being collected for re-use and/or recycling (mainly by the informal sector) in Ghana, other plastic waste is being burnt (10.7%) and littered into lagoons or ocean (10% (Thompson, 2004). In Ghana, this equals to recycling of plastics waste 150 tons daily, open burning of 305 tons daily and marine littering of 300 tons daily. Through the pilots plastic waste should be reduced at design stage and after-use stage through improved product design and increased collection, recovery and recycling; the legislative framework and other project outputs will also indirectly contribute to improved plastics management, including reduced open burning of plastic waste and marine littering.

130. Uncontrolled buring of plastic waste and dumping of plastics in the marine environment in terms of water pollution and liberation of contained chemicals are the major environmental problem to be tackled by this project. During PPG, the plastic amount to be reduced are be calculated.

131. To be verified during PPG: Marine Litter will be avoided directly through pilot (ii) and indirect through reduction of plastic waste on-land resulting from other project activities. It is estimated that 10% of plastics produced will enter into the sea (Thompson, 2004), although it is likely that in Sekondi Takoradi (Western Region: Population of 335,000. 3rd biggest city) and Tema (Greater Accra: Population of 292.773, town close to Accra, harbour), both involved in pilot (ii), the quantity of plastics entering the sea will be higher.

132. Using the calculations above, marine littering was estimated to be 300 tons daily, it is assumed that 100 tons/daily (out of 300 tons/daily) will be in Sekondi Takoradi and Tema (due to size, location and industry activity). Pilot activities planned at these two sites could contribute to the reduction of 7300 tons of marine littering during the implementation period (10%=10t/daily* 2 tears = 7300 tons/2 years). During PPG, other GEP through project activities will be explored and calculated.

133. Direct reduction of u-POPs and reduction of plastics will be calculated during PPG, based on final pilot selection (e.g. amount of PET recycling increased, amount of plastics collected at source, amount of biodegradable plastics instead of single-use plastics). Taking the above International Water pilot example in Sekondi Takoradi and Tema above, 1/3 of open burning activities estimated to take place in these two cities (due to size, location and industry activity)= 107 tons daily. If the project addresses 10%- 10.7 tons daily* 2 years = 7811 tons/ 2 years. This equals to 0.3 g TEQ/a to air and 0.008 gTEG/a to land for 2 years.

7) innovation, sustainability and potential for scaling up

134. *Innovation:* The project will introduce innovative solutions to design out avoidable plastic material and to include recycling and reuse as part of the production partners. It will also promote innovative solutions to improve recycling rate and strengthen the business models to improve the economic outcome of actors of the sector; and create 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 thought to be technically and financially feasible and sustainable. Partnering with private sector partners and GPAP will serve as an important means to developing innovative approaches and technologies that are appropriate to the national and local situation. A comprehensive approach will be applied that is coordinated with legislation and enforcement, technical training and support, and awareness raising, and involving a wide range of stakeholders.

135. The project also has a strong knowledge management component, which includes an awareness raising campaign, project website, and strengthened Multi-Stakeholder Waste Resource Platform in Ghana for sharing information, best practices, guidance materials and experiences, and yearly lessons-learned reports and publications, both during and after project implementation. This will ensure that none of the experiences from the project will be lost.

136. *Sustainability:* There are several aspects addressed and supported by the project which will contribute towards sustaining the project's results beyond the project's duration:

- Creating an enabling environment for a circular economy in plastic waste management through improved national legislative and regulatory frameworks and establishing PPPs, EPR, and other long-term arrangements

- Particular attention will be placed on business models supporting the sustainability of the projects, especially the pilots, which are also part of the RECP assessment and might include servicing models (e.g. cooperation for collection PET bottles against service). This will be further explored during PPG.

- Involving key private sector partners that have a financial interest in sustainable investment in Ghana

- Developing guidance and providing training on plastic waste management that can be regularly replicated to a wide range of stakeholders. The training will be designed and implemented with the support of national training institutions, National Project Committee (NPC), UNITAR, and UNIDO, among others. All guidance and training materials will continue to be accessible on the plastic waste management website beyond the project's duration.

- Implementing targeted awareness raising of all those involved in and/or impacted by plastic waste management.

- Applying the Government of Ghana's own co-financing, ongoing budgetary support, resources (e.g. in the form of tax incentives), and PPP participation and building on the National Plastic Waste Policy

137. *Potential for scaling up:* Ghana is an excellent country for this project because of its already existing baseline and on-going projects in related areas of plastics and waste management. Although plastic waste management approaches that are relatively new to the region they be implemented in Ghana for facilitation aof scale-up and repliciation. The project will document the interventions applied, through the preparation of yearly lessons-learned reports and publications, and this will enable other stakeholders to replicate such approaches and select the BAT/BEP most fitting to their needs and circumstances.

138. The national legal framework, enforcement measures, implementation plans, and pilot demonstration activities that will be developed/strengthened as part of the project will also support the scale-up/replication of project interventions among entities/partners which did not significantly participate in the project or pilots. The approaches learned in establishing and strengthening such frameworks can also be applied to other areas of chemicals management and waste management in the future.

Support for sustainable finance during project implementation will be another aspect of ensuring that the demonstrate Ciruclar Economy Approaches can be replicated for other companies, and for surrounding countries through knowledge exchange and pilot demonstration.

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[1] Barra et al. 2018. Plastics and the circular economy. Scientific and Technical Advisory Panel to the Global Environment Facility. Washington, DC.

[2] Global Plastic Action Partnership. Shaping a circular economy for plastics – from source to sea. https://wef.ch/gpap

[3] Ellen MacArtuhur Foundation. Concept: What is a circular economy? A framework for an economy that is restorative and regenerative by design. [Last accessed 08.08.2019] Available at: https://www.ellenmacarthurfoundation.org/circular-economy/concept

[4] Ellen MacArthur Foundation. 2018. The New Plastics Economy: Rethinking the Future of Plastics & Catalysing Action

[5] Solomon Kusi Ampofo

[6] Ministry of Environment, Science, Technology and Innovation. Government of Ghana, National Plastic Waste Policy, December 2017.

[7] EPA statement, 8 May 2019

[8] Ministry of Environment, Science, Technology and Innovation. Government of Ghana, National Plastic Waste Policy, December 2017.

1b. Project Map and Coordinates

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

2. Stakeholders

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

Indigenous Peoples and Local Communities

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above,please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

139. The project will be developed in close consultation with the relevant national stakeholders. During the project preparation phase, UNIDO, GPAP and MESTI/ EPA will consult widely to identify all national stakeholders and discuss their needs including their expected roles in the project. Stakeholders will include broadly defined major stakeholder groups such as: governmental institutions (especially ministries dealing with environmental, health, industrial, research and scientific issues); plastic manufacturers, collectors, and recyclers from the formal and informal sector; communities or cooperatives; research and academic institutes; national cleaner production centres; and NGOs, traditional leaders and indigenous groups, and faith-based organizations, among others.

140. Table 2 below provides a preliminary list of the main stakeholders, their interest in plastic waste management, and their potential roles and responsibilities. During the PPG phase, additional stakeholders will be identified and invited to participate. Bilateral meetings will be held with all key stakeholders, and national stakeholder consultation and validation meetings will also be organised. The consultations will include soliciting stakeholders' views on the appropriateness of the project, how it affects them, and how they can contribute to project implementation by defining specific roles that they can play. The stakeholders will also be requested to make specific commitments to the project, such as making co-financing pledges.

Table 2. Stakeholders and potential roles

NAME	TYPE	SPECIALIZATION	ROLE IN THE PROJECT
MAIN EXECUTING PARTNERS			
The Ministry of Environment, Science, Technology and Innovation (MESTI)	Government	Responsible for policy formulation and economic, scientific and technological interventions; Setting standards and regulations; coordinates all matters related to environmental management	· Chairs the PSC · Executes project activities · Hosts the Project Secretariat · Supports national training and capacity conducted under the project · Leads the formulation of the circular economy frameworks for plastic waste and supports its implementation. · Supports the formulation for the National Plastics Management Policy and related regulatory instruments · Facilitates the identification and implementation of appropriate incentives to promote plastic waste and marine litter management. · Supports and establishes a framework for BAT/BEP transfer.

Environmental Protection Agency (EPA)	Government	Executer of environmental related policies, regulations and guidelines: regulator for environmental issues including chemicals and wastes. EPA is the designated national authority and the focal point for the implementation of the MEAs that relate to chemicals ad waste management including the Basel, Rotterdam, and Stockholm Conventions. With respect to the environment EPA is, among others, responsible for setting national policies, norms, standards and guidelines relating to the pollution of air, water, land other forms of environmental pollution including the discharge of wastes and the control of toxic substances;	●Deputy Chair of the PSC ●Hosts the Project Secretariat ●In cooperation with MESTI, ensures execution of the project activities ●Supports national training conducted under the project ●Supports the regulatory aspects of the project
Global Plastic Action Partnership (GPAP)		https://www.weforum.org/press/2018/09/beyond-bags-bottles-and-straws-new-partnership-to-tackle-plastic-waste-from-source-to-sea/	· Deputy Chair of the PSC ●Facilitates collaboration and partnership between stakeholders ●As global partnership, collaborates with MESTI on the National Plastic Action Plan in Ghana. · Fast track the adoption of circular economy practices nationally and regionally · Crowd-in needed financing for large-scale investments and up-scaling of pilots ●
Ministry of Finance	Government	Resource mobilisation for the implementation of the strategy; Distribution of financial resources to national stakeholders; collection of levies on imported plastic products at the point of entry.	· Part of the PSC · Propose and implement the economic incentives, tax rebates and others. · Provide financial mechanism(s) to support the activities of the project

Ministry of Trade & Industry (DTI)	Government	The driver of industrial development and trade in Ghana.	· Supports the regulatory aspects of the project · Supports the establishing of collection centers and recycling facilities · Provides a stimulus Package · Guides on the One District One Factory · Facilitates the incentives to stimulate plastic recycling through Business Regulatory Reforms · · Facilitates and supports the SMEs involved with plastic collection and recycling. · Facilitate Public-Private Sector Dialogue
UNDP	International Organisation	Specializes in international development related work	In collaboration with MESTI, the 'Waste' Recovery Platform in Ghana
OTHER STAKEHOLDERS			
Ghana Export Promotion Authority (GEPA)	Government	The Ghana Export Promotion Authority (GEPA) is the National Export Trade Support Institution of the Ministry of trade and Industry, responsible for the facilication, development and promotion of Ghanian export by Act 396 (1969)	· Provides capacity-building activities and sectoral knowledge to better align recycled plastic material with the standards requirements of export markets.
Ministry of Health (MoH)	Government	MoH is responsible for the health of Ghana; MoH is involved in providing public health services, managing Ghana's healthcare industry, and building Ghana's hospitals and medical education system.	· Provides specialized knowledge on the effects of plastics on human health · Participates in national awareness raising activities

Department of Employment and Labour Relations	Government	Ministry of Employment and Labour Relations is mandated to formulate policies on Labour and Employment issues, develop sector plans, coordinate Employment and Labour related interventions across sectors, promote harmonious labour relations and workplace safety, monitor & evaluate policies, programmes/ projects for accelerated employment creation for national development.	· Provides specialized knowledge on the occupational safety and health aspects of the project · Participates in national awareness raising activities
Ghana Standards Authority	Government	The GSA is mandated to issue Export Certificates for all high risk commodities. Besides, it is the EU competent Authority for the inspection of fish and fishery products slated for export to the EU. The GSA houses the National Enquire Point that assists exporters to get more information on the standard requirements of the exporting countries.	· Contribute to capacity-building activities to improve knowledge of plastic recyclers on standards requirements of exporting countries.
SGS Renovo Ghana Programme	Private Sector	SGS Renovo Ghana Programme controls, manage, and dispose of electrical and electronic waste and tires in Ghana; Government of Ghana designated entity as the external service provider to collect advance eco levy on all electrical and electronic equipment (EEE) and tires exported to Ghana.	· SGS Renovo Ghana Programme eco-levy collection experience · Explores potential for synergy with SGS Renovo Programme eco-levy collection experience, including on plastic material
Association of Ghana Industries (AGI)	Private sector	Coordinates the industry members activities; Analyses government policy and monitors its implementation and the impact on businesses; support and influence legislations or other measures considered to be favourable for the advancement of industry; and fights for member interests.	· Members of the PSC · Advocating policies that advance the growth and development of industries; · Disseminates project activities and outcomes to its members · Engages government to develop enabling policies, incentives that promotes plastic waste recycling. · Participates in the assessment of the appropriate BAT/BEP for plastic waste recycling in Ghana and shares knowledge, experience and critical information with its members

Ghana Recycling Initiative by Private Enterprises (GRIPE)	Private Sector	Industry-led coalition formed under the Association of Ghana Industries (AGI) with a stake in the plastics sector to integrate sustainable waste management solutions, particularly around plastics; promotes sustainability actions and plastic recycling	· Provides knowledge and experience on plastic collection and recycling approaches in Ghana · Provide logistical supports for project-related activities · Participates in training and promotes project activities
Council for Scientific and Industrial Research (CSIR) and Ghana Innovation, Research Commercialization Centre	Government	Undertakes directed and multidisciplinary research, technological innovation, and industrial and scientific development to improve the quality of life of the country's people. The Council for Scientific and Industrial Research (CSIR) is the foremost national science and technology institution in Ghana. The CSIR is mandated to pursue, among others, the implementation of government policies on scientific research and development, coordinate R&D activities in the CSIR and other S&T institutions nationwide and assist the government in the formulation of S&T policies for national development. The CSIR is also required to commercialize appropriate technologies, in partnership with the private sector and other stakeholders, and encourage in the national interest, scientific and industrial research of importance for the development of agriculture, health, medicine, environment, technology and other service sectors of the economy.	· Members of the PSC · Serves as a hub for technology transfer · Provides support for technology-related matters of the project · CSIR will play a key in facilitating the transfer of plastic recycling technology
Importers, SFGM, FGM, and Exporters	Industry Associations	Coordinates the plastic manufacturing companies; represents the interesrs of plastic manaufacting campanies.	· Coordinating manufacturing companies together to tackle plastic waste · Support finding alternatives to recover plastics from the environment

Seureca	Private sector	Implementing partner of the 12 months pilot project in Accra funded by DFID	· Potentially executes some project activities as identified during the PPG
Zoomlion	Private sector	- mandated to deliver waste management services to the general public based on contract agreements.	· Mobilizing human, financial and technological resources · Participates in identification of the appropriate BAT/BEP · Leads the PET recycling pilot
Nelplast industry	Private sector	Produces pavement blocs through a production process whivh mixed sand and shredded plastics. Industry was enrolled into the One District One Factory, Ghana flagship industrialization plan, whose benefits include low-interest loans.	· Potential pilot project on recycling of mixed pastics from marine debris
Climate Innovation Centre Ghana	Private sector	Business incubator with a focus on developing SMEs ventures and entrepreneurs in Ghana's green economy. One of their key project is a waste-to-fuel plant which uses bio-circular pyrolysis technology to convert mixture of plastic/used tired and e-waste materials to fuel, gas, minerals and biochars	· Potential pilot project on recycling of mixed plastics from marine debris
GreenAd	Non-governmental organization	Focuses on awareness raising and improvement of waste collection in coastal regions particularly affected by the accumulation of marine debris	· Cooperates on pilot project on community-based collection/buy back centres

Environment360	Non-governmental organization	Supports the creation of circular economies by creating inclusive collection systems that empower informal sector waste workers to have an economic and environmental impact on their communities; participates in decreasing the amount of indiscriminate dumping of waste in coastal and urban communities by working with local authorities to create new collection routes and education campaigns that help these communities understand the importance of preserving the beaches and marine life.	· Member of the PSC (NGOs will be proposed to designate one of their entities to represent them on the PSC; this should be determined on the occasion of the Inception Workshop for the project) · Coordinates with partners regarding community input and awareness raising activities
Local communities	Civil society	Knowledge of needs and interests of local communities	· Participates in awareness raising activities; training workshops, where appropriate; · participates in the design and operationalisation of the plastic collection/buyback centres

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

141. Gender mainstreaming will be prioritized throughout the project. For example, equal opportunity to participate in project activities (including as members of the NPC) and decision-making at all levels will be ensured. In the course of the recruitment processes, the project will encourage women applicants.

142. Equal access to information (e.g. regarding risk management, BAT, BEP, and project activities) related to plastic waste management and the circular economy will be ensured. Awareness raising materials specifically designed for facilitating women's involvement will be prepared, which will introduce the gender-differentiated impacts of plastic waste and uPOPs exposure to human health, particularly reproductive health. This will also be taken into consideration when implementing specific project activities related, for example, to the use of PPE or adoption of risk-reduction counter-measures.

143. The gender assessment planned under Component 4 will help assess the various gender dimensions of the project and its interventions and determine the various ways in which plastic waste management, and the associated project activities impact various occupational and population groups. Efforts will be made to collect data disaggregated by sex in every project area. The gender assessment will be used to help adjust the design and

interventions of the proposed project in such a way that gender equality and women empowerment can be better achieved throughout the project's implementation. The assessment report will also be published and disseminated at global level to help inform other similar projects.

144. Towards the end of the project (around the time of the TE), the gender assessment will be updated in order to reflect contributions from the project towards the achievement of SDG 5: Achieve Gender Equality and Empower all Women and Girls, and in particular Target 5.5 "Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life".

145. UNIDO guidance on gender mainstreaming[1] as well as the GEF policy on gender mainstreaming will guide the process. Specific objectively verifiable indicators relevant to gender mainstreaming will be included in the results-based framework of the Project Document. During PPG a Gender Analysis and Gender Action Plan will be developed.

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[1] https://www.unido.org/our-focus-cross-cutting-services-gender-equality-and-empowerment-women/publications

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;

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

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

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

146. At the national level there is often a lack of strategic coordination between the various government officials and private sector actors involved in respectively regulating and undertaking plastic production, collection, recycling, and trade. There is also an absence of dedicated capacity within regulatory agencies to address plastic waste and marine plastic litter management related issues. However, the government has a fundamental responsibility to ensure the provision of adequate waste management services by creating an enabling environment for the private sector (and other stakeholders), invest in waste management activities, promote plastic recycling and material substitution, and create jobs.

147. The private sector has technical knowledge, skills, resources, and capacity to scale-up investment and provide innovative solutions in plastic waste and marine plastic litter management. Therefore, this project will promote private sector engagement and the forming of partnerships between government and the private sector at the national and international level to bring about the desired solutions. GPAP will use its global representation and accountability of its host institution, the World Economic Forum, to crowd-in investments from impact investment funds into strategic enterprises in the private sector to accelerate large-scale impact. UNIDO will support GPAP UNIDO will support GPAP can facilitate this process by bringing its unique convening power to help elevate the policy dialogue to focus on shifting the allocation of resources from national budgets to implement the National Plastic Management Policy, engage the private sector, and address the challenges posed by plastic waste. Increasing the participation and contributions from the private sector will enable the GEF-funded interventions to be sustained after the project's completion. The project is expected to become a true catalyst for private sector engagement and related sustainable behavioural change.

148. In addition, the project will demonstrate circular-economy approaches in selected private sector operations, whose cooperation and commitment are essential to demonstrate economic, environmental and social benefits through the projects intervention. On the global level, the cooperation with GPAP and the UNDP 'Waste' Recovery Platform will ensure national and regional knowledge management sharing to ensure replication of the case studies and a long-term promotion of circular economy efficiency, learning innovation among the GPAP countries and partners. Lessons learned from on-going GPAP countries will be used to achieve best practice applicable for Ghana.

5. Risks

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Risk	Risk reduction measure

Government changes and the new government has less interest in plastic waste and marine plastic litter issues.	The project intends to address this risk by establishing a strong supervisory mechanism supported by TORs. The project steering committee will be drawn from a wide variety of national stakeholders. The project secretariat will be an independent body with accountability to a Board. The Board should be comprised of nominated individuals representing the wide spread of stakeholders implicated in the successful achievement of the Plastics Management Policy's Strategic Aims. The Board should maintain a reserved number of seats to represent various sectorial groups, including ministries, government agencies/regulators, private sector producers of plastics as well as waste management and recycling entities, civil society groups and academia and the media. Additionally, the Board should accommodate observer slots for funding agencies. This organization ensures shared accountability across the sector outside of the political domain.
Difficulties in enhancing the regulatory system within the project timeframe	The Government of Ghana, by ratifying several MEAs including the BRS and Minamata Convention, by developing its NIP and by formally applying for this project has already established strong pillars towards the sound management of chemicals and waste. In this project, the Minister of MESTI and parliamentarians from the environmental select committee will be engaged as early as possible. Specific awareness raising events will be organized and targeted at them. The project will include the review of the legal framework to enable the inclusion of specific provisions regarding plastic waste and marine plastic litter into the existing legislation, regulations, etc. This is usually more efficient and results in a faster endorsement process compared to the drafting and adoption of new regulations. Having the Ministry of Justice lead the regulatory review has proven to be a best practice in other countries where UNIDO is implementing GEF projects, as challenges are identified and addressed early on, rather than encountered during the approval endorsement phase.
Project resources are not sufficient to ensure the necessary interventions to achieve the planned waste management targets.	The project will allocate enough grants and secure co-financing resources to implement sustainable BAT/BEP to address the issue of plastic waste and marine litter. Furthermore, the private sector is expected to pledge and fulfil its commitment to scaling-up local investment in plastic waste management.
The current high interest of the private sector, NGOs, and CBOs in the issue of plastic waste and marine plastic litter management could decrease if the interest of the government changes and reduces support of the initiatives, thus affecting project implementation and its sustainability	Keeping the interest of the private sector, NGOs, and CBOs will be ensured through regular communication among all stakeholders and with the support of the knowledge sharing platform and project website. This will increase awareness of the health and environmental risks associated with plastic waste and the business opportunities that are offered through recycling of resources. Establishment of sustainable business models and PPPs for the facilities to ensure long-term planning and attract investors will help translate the opportunities into sustainable business practices. This will serve to minimize any impact of change in the government's interest.
Informal sector will continue its activities or even become stronger, so a substantial amount of plastic waste and marine plastic litter will not reach the appropriate facility/recycling stream	Establish attractive options and corresponding business models with participation of the informal sector (e.g. through waste collection/buy back centres and recycling activities) to ensure economic sustainability, and ensure their involvement during the planning stages. In addition, facilitate a good working relationship between the staff of the facilities and the informal sector.

(Climate Risk) The selected project sites may suffer from the unexpected floods	The site selection will look into the elevation of the project sites as well as the weather related risks of flooding.

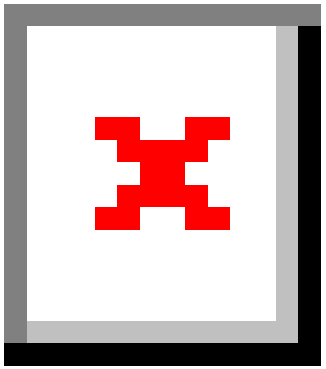
6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

149. As the GEF Implementing Agency, UNIDO will cooperate with the executing partners MESTI/EPA and GPAP through a tri-party consortium the process of project preparation and development with the participation of key stakeholders from the Government and the Private Sector. The project execution will be undertaken through contractual arrangements between UNIDO and the Ministry of Environment, Science, Technology and Innovation (MESTI)/Ghana EPA other national governmental entities, and private sector, as applicable.

150. MESTI/Ghana EPA will serve as the main national executing partner in the project and ensure coordination with national and municipal counterparts through the NPC and other information exchange and consultation mechanisms. Ghana has also implemented several GEF-funded projects on chemicals and waste management and international waters and where applicable structures and lessons learned from those projects will be incorporated into this proposed project.The national project structure will also coordinate with existing national coordination mechanism including the Hazardous Chemicals Committee, Pesticides Technical Committee, and National Steering Committee on the Implementation of the Minamata Convention on Mercury in Ghana.

151. GPAP initiative in Ghana, NPAP, will contribute to the execution of the project by (i) providing advisory support under Component 1 for the design of responsive policies and regulations to achieve strategic targets identified in the NPMP and to operationalize circular ecocnomy practices (ii) participating in the execution of Component 2 through executing pilots related to raising the awareness, re-reducating and training of consumer side on circular economy management practices and involvement of communities for upscaling recovery and recycling; (iii) conducting activities of Component 3 to ensure effective knowledge management and use of knowledge exchange platform (in collaboration with UNDP). NPAP will participate in the Project Steering Committee to improve the coordination of all activities, and UNIDO will participate in the Project Steering Committee of NPAP to promote integration and homogenous approaches vis a vis the NPMP.



152. The project will build upon UNIDO's Circular Economy initiatives (https://www.unido.org/our-focus-cross-cutting-services/circular-economy), especially on recycling and marine litter.

153. The project will build on the many past efforts to address plastic waste in Ghana, in terms of both strengths and challenges (see baseline). 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:

154. Under regional project 104064 in ECOWAS UNIDO implemented a pilot initiative in Guimea 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 stucdies 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:

- 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.

- 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

- documentation and dissemination of BAT/BEP in plastic waste management: 145 trained in BAT/BEP on plastic waste management; 6 guidance documents developed to providebaseline data on the value chain and BAT/BEP to be encouraged

155. Under project 100114 in Senegal for the sound management of solid municipal and hazardous waste in Senegal, UNDO implement 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.

155. 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 benefitted 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.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assesments under relevant conventions

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

157. This project is fully 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).

158. A comprehensive programme on the environment (and specifically plastic waste management) will strongly support national development and serve as a catalyst for the achievement of the Sustainable Development Goals in Ghana. If managed effectively, natural resources and the environment can make a vital contribution to development in the country, laying the foundation for sustainable jobs and economic growth.

159. The project also supports meeting the Sustainable Development Goals (SDGs), particularly Goal 12, Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment". Data on waste and recycling will also help Ghana with SDG reporting.

160. The project will support the draft plastic waste policy, which aims to comprehensively manage plastics as a vehicle for sustainable development. It will directly support all five of the policy's guiding pillars: behaviour change, planning and coordination, good governance and accountability, resource mobilization, and locally appropriate solutions.

161. The Ministry of Sanitation & Water Resources' Medium-Term Expenditure Framework (2018-2021) and expected Sanitation Strategic Plan (2018-2020), which has the objectives to include scale-up of investments and develop innovative financing mechanisms, enhance capacity of relevant institutions, accelerate provision of appropriate services, and ensure the development and implementation of effective behavior change communication approaches, is also in line with the project.

162. The project also support the Presidency's pledge to make Accra the cleanest city in Africa and the National Sanitation Campaign "Play your Part" (2017), which aims to increase public awareness, action and coordination to take ownership in solutions implementation in the sanitation sector. Three new material recovery facilities were announced at the launching of the campaign. These facilities can benefit from the utilization of the tools to be developed in this project and can support the creation of hundreds of jobs for vulnerable community members in the collection and sorting of waste plastics to supply the recycling facilities.

163. The project will contribute to the Ministry of Local Government and Rural Development's Environmental Sanitation Policy (2008), which is guided by principles of environmental sanitation as both a public good and economic good; cost recovery, value-for-money, economy, effectiveness and efficiency; improved equity and gender sensitivity; recognition of indigenous knowledge, diversity and religious and cultural practices; and community participation and social inter-mediation.

164. In addition, the Government of Ghana's policy on local industrialization (1District, 1Factory), which includes waste management opportunities, can benefit from the project and in particular the pilot demonstration activities.

8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

165. Knowledge management activities have been integrated through the project. For example, the pilots' results and lessons learned will be disseminated widely to maximize the impacts and the gain from the project interventions.

166. Regular project coordination meetings as well as regional meetings will facilitate knowledge and information exchange as well as enhance policy and social dialogue including at the national, regional, and international level. The project will ensure that the knowledge obtained through the implementation of the project in Ghana will be shared with other countries in the Africa region and the rest of the world. Similarly, Ghana will benefit from implementation of the Indonesian demonstration GPAP project as well as learn from other countries with initiatives related to plastic waste and marine plastic litter management.

167. 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 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.

168. 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.

169. UNIDO has prepared a document “Addressing the challenge of Marine Plastic Litter using Circular Economy methods - Relevant considerations”. This policy guidance report and others will be utilized fully during the project implementation phase.

170. 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.

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Fredua Agyman	Director of Environment GEF Operational Focal Point	MINISTRY OF ENVIRONMENT, SCIENCE, TECHNOLOGY & INNOVATION	7/3/2019

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Ashanti Region	6.7470° N, 1.5209° W
Eastern Region	6.2374° N, 0.4502° W
Greater Accra Region	5.8143° N, 0.0747° E
Northern Region	9.5439° N, 0.9057° W
Western Region	5.3902° N, 2.1450° W