GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

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PART I: Project Information

Project Title:	Eliminating POPs through sound management of chemicals		
Country(ies):	Republic of Maldives	GEF Project ID:[1]	9562
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	5918
Other Executing Partner(s):	Ministry of Environment and Energy	Submission Date:	2016-07-13
GEF Focal Area(s):	Chemicals and Wastes	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of parent program:	[if applicable]	Agency Fee ($)	349,125

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	**Trust Fund**	**(in $)**	
		GEF Project Financing	**Co-financing**
(select) CW-2 Program 3 (select)	GEFTF	3,675,000	19,899,771
(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
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(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
(select) (select) (select)	(select)		
Total Project Cost		**3,675,000**	**19,899,771**

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To reduce the risks of POPs on human health and the environment through strengthening institutional capacity and the policy and regulatory framework for the sound management and disposal of chemicals, POPs and wastes, and developing sustainable systems for the sound collection, labelling, storage, and disposal of hazardous chemicals and waste.

Project Components	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Co-financing**
1. Strengthening the regulatory and policy framework and institutional and technical capacity for the sound management and disposal of POPs, chemicals and wastes.	TA	1.1 Policy and regulatory framework for the sound management of chemicals enhanced. 1.2 Key public and private institutions and entities Capacitated to operationalize the regulatory and policy framework for the LCM of chemicals and	1.1.1 Advance the development and adoption of regulatory measures pertaining to POPs and SMC and introduce economic instruments and incentives (EPR, PPP) to reduce POPs and other harmful releases. 1.2.1 A harmonized Central Chemical Management System	GEFTF	700,000	3,246,753

[1] Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.
[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.
[3] Financing type can be either investment or technical assistance.

		wastes.	(CCMS) established within National Centre for Information Technology (covering chemicals' import, use, storage, management, disposal, POPs and PRTR system). 1.2.2 Capacity at regulatory authorities strengthened for the development and effective enforcement of regulatory measures related to inspections, transportation, storage, use and disposal of POPs, hazardous- chemicals and wastes. 1.2.3 Maldives Customs Service (MCS), Ministry of Defense and National Security (MDNS) and other responsible authorities trained on inspection, identification and monitoring procedures for chemicals, and products containing chemicals of concern.			

2. Establish systems for the sound collection, labeling, storage and disposal of hazardous chemicals and wastes.	TA	2.1 24 tonnes of PCB containing equipment and wastes identified, labeled, soundly managed and exported for disposal. 2.2 Systems for the sound collection, labeling, storage, transport and disposal of hazardous chemicals and waste designed.	2.1.1 Inventorize, analyze, label and map PCBs containing equipment and waste present in the country. 2.1.2 Facilitate the environmentally sound management and disposal of 24 tonnes of phased-out PCB containing equipment and waste abroad. 2.2.1 Develop the capacity of regional waste management facilities and waste management actors for the sound management, interim storage, transport and disposal of hazardous and toxic wastes. 2.2.2 Introduction of BEP and BAT to reduce POPs releases from waste management.	GEFTF	2,600,000	10,963,018
3. Monitoring and learning, adaptive feedback, outreach and evaluation.	TA	3.1 Project results sustained and replicated and awareness raised.	3.1.1 Experiences, case studies, lessons learned and best practices collected, captured in knowledge products and disseminated at national and global level to support replication. 3.1.2 Undertake awareness raising targeted at households, chemicals users, industries and decision makers. 3.1.3 M&E and adaptive management applied in response to needs, Mid-Term Evaluation findings.	GEFTF	200,000	3,000,000
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		

	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
			Subtotal		3,500,000	17,209,771
			Project Management Cost (PMC)[4]	GEFTF	175,000	2,690,000
			Total Project Cost		3,675,000	19,899,771

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
GEF Agency	UNDP	In-kind	50,000
Private Sector	PCB holders (State Electric Company Ltd. (STELCO); FENAKA Corporation; Community Owned Power Stations)	In-kind	403,018
Private Sector	Waste Management Corporations Ltd. (WAMCO)	Grants	13,200,000
Recipient Government	Government of the Maldives (Malé City Waste Management Project) - Local Government Budget – Public Sector Investment Program (PSIP) (2016 - 2017)	Grants	3,246,753
Recipient Government	Government of the Maldives - Local Government Budget – PSIP (2016 - 2018) Huvadhu Atoll and Addu Atoll regional waste management facility project	Grants	3,000,000
(select)		(select)	
Total Co-financing			19,899,771

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS a)

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee (b)b)	Total (c)=a+b
UNDP	GEFTF	Maldives	Chemicals and Wastes	POPS	3,675,000	349,125	4,024,125
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
Total GEF Resources					3,675,000	349,125	4,024,125

a) Refer to the Fee Policy for GEF Partner Agencies.

E. PROJECT PREPARATION GRANT (PPG)[5]

Is Project Preparation Grant requested? Yes ☒ No ☐ If no, skip item E.

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

[5] PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to $50k for PF up to$2m (for MSP); up to $100k for PF up to $3m; $150k for PF up to $6m; $200k for PF up to $10m; and $300k for PF above $10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: $10,000				PPG Agency Fee: 9,500			
GEF Agency	**Trust Fund**	**Country/ Regional/Global**	**Focal Area**	**Programming of Funds**	**(in $)**		
					PPG (a)	**Agency Fee**[6] (b)	**Total** c = a + b
UNDP	GEF TF	Republic of Maldives	Chemicals and Waste	POPS	100,000	9,500	109,500
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
Total PPG Amount					**100,000**	**9,500**	**109,500**

[6] PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[7]
Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*Hectares*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*Hectares*
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*metric tons*
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*24 metric tons PCBs*[8]
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries:*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries:*

PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area[9] strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling up.

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

Tourism is a critical part of the Maldivian economy, as it accounts for 25 percent (2014)[10] of GDP. Because visitors to the Maldives are seeking a pristine environment, not one with polluted waters, degraded coral reefs, smoking waste dumps and waste floating in the sea or being trapped on reefs, the Sound Management of Chemicals (SMC) and wastes, in particular POPs, hazardous wastes and household wastes, is an issue that needs to be addressed urgently. If not, such challenges could further impact the country's environment, human health, and its tourism sector.

[7] Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SCCF.

[8] Release of approximately 15 g-TEQ PCDD/F prevented (10% of resort and waste management center releases).

[9] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving.

[10] http://planning.gov.mv/nbs/wp-content/uploads/2015/10/Statistical-Pocketbook-of-Maldives2015.pdf

Being land scarce and low lying with an average height above sea level of 1.8 meters, the Maldives is extremely vulnerable to the climate change impacts. Intensifying weather events such as storms can lead to inundations, extreme winds and flooding while the melting of polar ice caps exposes the country to the risks of sea-level rise. The presence and inadequate storage of hazardous chemicals and wastes, exposed to the weather, at low lying sites and often on permeable soils makes it very likely for these chemicals and waste to end up in international waters, therefore not only jeopardizing the pristine environment of the Maldives, but also that at global level. Proper chemicals and hazardous waste management is therefore an important element to achieving environmental sustainability and maintaining and even expanding tourism in the Maldives' economy. Hence, environmental, chemical and waste management are national priorities, as evident in their recurrence as a core themes of successive national development and tourism plans (see also Section *6. Consistency with National Priorities*).

Of particular importance to the country's environment are challenges posed by Persistent Organic Pollutants (POPs). The Stockholm Convention (SC) on POPs was adopted in May 2001 and the Republic of Maldives ratified the Convention on 17 October 2006. With the financial support of the GEF and technical assistance provided by UNIDO, the Government of the Maldives implemented, over the period 2013 – 2016, the project "*Enabling Activities to Facilitate Early Action on the Implementation of the Stockholm Convention on POPs*" (GEF ID: 5324).

The development of the country's first National Implementation Plan (NIP) started with various preliminary inventories being conducted over the period 2013-2015 through which information was obtained regarding POPs import, use, release and their management. A draft version of the NIP as well as final inventory reports were available at the time of the drafting of this proposal, and were used as its basis. The NIP is expected to be finalized by July 2016 and submitted to the Stockholm Secretariat in August 2016. The Maldives' NIP covers both the initial POPs and the new POPs added at the 4th and 5th Conference of the Parties.

Although the NIP has not been finalized, the priorities which have been taken up in the draft NIP, are listed in Section 6 ("*Consistency with National Priorities*"). The two highest ranking national priorities are 1.) *The implementation of measures to strengthen the institutional and regulatory framework* (including: Developing legislation for chemicals management; Strengthening institutional capacity; Improving data collection and management systems and Conducting research on the effects of POPs); and 2.) *Developing an action plan to eliminate PCB-containing equipment and its wastes by 2025* (including Identifying, labeling and mapping where PCBs and equipment containing PCBs are located in the country; Put in place labelling mechanism for all PCB containing equipment; Establishing adequate storage facilities for replaced equipment containing PCBs; Formulating guidelines for disposal of equipment containing PCBs; and Disposing safely of equipment containing PCBs). According to a preliminary PCB assessment carried out in support of the NIP's preparation, the Maldives counts 18 pieces of electrical equipment (~ 24 tonnes) potentially containing PCBs located on five of the most populated islands.

In addition, the NIP also lists national priorities for proposals for the development and capacity building to achieve the sound management of POPs. These are: 1) Reducing the incineration and open burning of wastes (all wastes, including medical and hazardous wastes are burned in the open), which is the source of 98.6% of UPOPs releases in the country – totaling 151 g-TEQ/yr); 2) Reducing UPOPs emissions from vehicles, the 2nd largest UPOPs release sources, responsible for 1.2% of UPOPs releases; 3) Awareness creation through the development of education curricula and targeted awareness campaigns; 4) Carrying out studies on the impacts of POPs on human health; and 5) Establishing a standard chemicals labelling system in multiple languages.

Since the ratification of the Stockholm Convention in 2006, there has been no specific action towards the environmentally sound management of POPs of hazardous wastes at national level. The Environment Protection and Preservation Act (Law no. 4/93) of the Maldives has particular provisions for the sound management of hazardous waste. However, limited data, capacity, resources and a general lack of understanding related to the management of POPs and hazardous wastes have hampered the substantive realization and implementation of these specific provisions, or POPs related interventions. Now that the NIP process has nearly been concluded and the country's national priorities related to POPs have become more defined, the Government is committed to start addressing the most pressing POPs priorities.

Root causes and barriers that need to be addressed

Dispersed waste generation: The Maldives faces particular challenges that are unique to SIDS, some of which are even unique to the Maldives. The Maldives[11] is an archipelago comprised of 1,190 coral islands in 26 atolls over an area of about 750 km on a north-south axis and 120 km on an east-west axis. The land area of the Maldives accounts for about 1% of the country's territory. The Maldives' islands are low laying land areas with an average height above sea level of 1.8 meters (m). The country's population of approximately 394,450 people (July 2012 estimate) lives on 198 of the 1,190 islands in the Maldives. An additional 80 islands have tourist resorts. About 70% of the inhabited islands have a resident population of less than 1,000 people. As of 2009, Malé had an estimated population of 120,000, or 30% of the country's residents. The fact that (chemical) waste is being generated on 278 island presents the country with an incredible challenge, as land is very scarce, low lying and transportation of chemicals and waste from island to island is costly and complicated.

Data Availability on Chemicals Use, Imports and Disposal: Chemicals are not produced in the country and are all imported. The country continues to see a steady increase in the import and use of chemicals and related components. Data on the import of chemicals is managed by the Maldives Customs Service (MCS), while a record of permits and amount of chemicals that are permitted to be imported into the country is kept by the Ministry of Defence and National Security (As per law 4/75, Act on Goods Prohibited to be Imported into Maldives, Article 5, chemicals can only be imported into the Maldives if a written permit is obtained from the Ministry of Defence and National Security). The country does not yet dispose of a database which captures the usage and disposal of chemicals. As a result there is no clear insight in how much chemical and hazardous waste is being generated and thus requires disposal. As a first step the Ministry of Defence and National Security (MDNS) (with financial support provided by the Ministry of Environment and Energy) has started the establishment of a central chemical management system, to be set-up within the network of the National Centre for Information Technology (NCIT). Once the central chemical management system has been established, all chemical related data could be harmonized in that location and system.

However, there are a number of aspects that would require further support. In order to ensure that the database/information system allows the country to report to chemicals-related Conventions, and monitor and improve the management and release of POPs (use, release, and disposal), the Central Chemical Management System (CCMS) needs to be designed/adjusted in a way that allows the government to monitor POPs and keep an up-to-date POPs database. Furthermore, a Pollutant Release and Transfer Register (PRTR) system would need to be incorporated in the CCMS to allow regulatory authorities to capture potentially hazardous chemical substances and/or pollutants released to air, water and soil and transferred off-site for treatment or disposal. This will allow the government to obtain a better sense of the generation and disposal of chemical and hazardous wastes.

Coordination among various actors: There is an urgent need for a coordinated and concerted effort to harmonize methodologies of data collection and information sharing across various institutions and bodies. Furthermore, there is a definite need to strengthen and improve the coordination among major governmental and non-governmental stakeholders. This lack of coordination is the biggest problem resulting in duplication of efforts or unresolved and conflicting mandate issues regarding different aspects of chemical management.

Legislative and Policy SMC Framework: From a legislative standpoint, the Environment Protection and Preservation Act (Law no. 4/93) of the Maldives has special provisions for the environmentally sound management of hazardous waste, chemicals, and oil (for an overview of chemicals related legal instruments, see Table 5). However, the implementation and monitoring of these particular provisions has been a challenge due to the lack of a national chemicals database, lack of coordination mechanisms, lack of general baseline indicating the usage and disposal of these chemicals, lack of technical capacity, lack of financial resources. Legal instruments to regulate import, storage, transport, use and disposal of chemicals of chemicals are lacking or inadequate, while the Waste Management Regulation has not been fully implemented. Accelerating the enactment of laws is slow (such as the Chemical Regulation, draft Pesticides Bill) due to lack of commitment and responsibility in comprehending the real impacts of such laws. All chemicals restricted under the Stockholm Convention are banned in the Maldives except for PCBs,

[11] http://www.tourism.gov.mv/downloads/publicaltions/SolidWaste.pdf

However, this ban is not tied to any legislative norm and has been exercised via public announcement.

Hazardous waste disposal/storage infrastructure: There is a complete lack of infrastructure for both the collection and disposal of hazardous and chemical wastes. In the past, hazardous waste was disposed of at the island of Thamburudhoo, which is used for military training. However, currently there is no designated area for disposing chemicals or hazardous waste and consequently no facility that fulfils environmental criteria for disposal. According to the National Chemical Profile (NCP) and the NIP, waste chemicals are either diluted and drained into the ground or sea, or hazardous chemicals and wastes are simply disposed of along with regular household and ultimately end up on one of the regional municipal dumpsites, which all undergo open burning to reduce the volume (open burning of waste is responsible for 98% of UPOPs releases in the country).

2) The baseline scenario or any associated baseline projects

The baseline scenario
Since the ratification of the Stockholm Convention in 2006, there has been no specific action towards the environmentally sound management of POPs at national level. The NIP (expected to be finalized, endorsed and submitted in 2016) identifies PCB management as the most urgent priority of the country in terms of POPs management. Additional national priorities related to the management of POPs are listed in Section 6, Table 9. "*Priorities for the Management of POPs in Maldives (NIP, 2016)*"

PCBs
In preparation for the NIP, a PCB inventory was undertaken which identified electrical equipment potentially containing PCBs based on the following criteria: i) Containing oil and ii) Manufactured prior to 1989 or with an unknown manufacturing year. According to the PCB inventory, potentially PCB containing equipment is present on five (5) islands of the Maldives. They are; Malé, GN. Fuvahmulah, S. Hithadhoo, S. Feydhoo and S.Gan. These are among the most populous islands in the Maldives. The inventory results indicated that there are 18 potentially PCB containing electrical units, made up of 15 electric transformers (Table 1) and 3 oil filled circuit breakers (Table 2). The total volume of potentially PCB containing oil is 6,100 litres, made up of 5,819 litres of transformer oil and 282 litres used in oil filled circuit breakers.

Table 1 below summarizes inventory data on electric transformers potentially containing PCBs, including their location, manufacturer's name, and year of manufacture, volume of insulating oil, total mass of transformer, operational status and leaking status. According to the inventory, most of these potentially PCB containing transformers (14) are owned by FENAKA Corporation. The State Electric Company (STELCO) owns only one potentially PCB containing electrical transformer.

Table 1. Inventory of Potentially PCB Containing Electrical Transformers

#	Location	Manufacturer's Name	Year of Manufacture	Volume of Insulating oil (Ltr)	Total Mass of equipment (kg)	Operational Status	Leaking Status
1.	K. Malé'	Takoaka Electricals		200	730	In use[12]	No
2.	S. Hithadhoo	Lindley Thompson Ltd	1984	579	1630	In use	Yes
3.	S. Feydhoo	Lindley Thompson Ltd	1984	521	1730	In use	Yes
4.	S. Gan	Lindley Thompson Ltd	1986	521	1730	In use	Yes
5.	S. Hithadhoo	Denis Ferranti Co Ltd	1965	534	5165	In use	Yes
6.	GN. Fuvahmulah	Foster Transformers	1962	318	1166	Stand by	Yes
7.	GN. Fuvahmulah	Johnson and Phillips Ltd	1965	454	939	Decommissioned	No
8.	GN. Fuvahmulah	Foster Transformers	1962	318	1166	In Use	Yes
9.	GN. Fuvahmulah	Foster Transformers	1961	644	2508	Stand by	Yes
10.	GN. Fuvahmulah	Foster Transformers	1962	318	1166	In use	Yes

[12] According to STELCO (email of 31 May 2016) the transformer used in Male' has been serviced several times and has undergone an oil change. STELCO indicated that no PCB containing transformers are used in Male'.

11.	GN. Fuvahmulah	Meiden Transformers	1982	450	1750	In use	Yes
12.	GN. Fuvahmulah	Baldwin Transformers Australia Ltd.	1980	235	930	In use	No
13.	GN. Fuvahmulah	Baldwin Transformers Australia Ltd.	1980	235	930	In use	No
14.	GN. Fuvahmulah	Johnson and Phillips Ltd.	1965	492	1678	In use	No
15.	GN. Fuvahmulah	One of the transformers located in the island of Fuvahmulah had its manufacture's original identification plate missing hence the data could not be confirm whether it is a potentially PCB containing equipment. This transformer was suspected to be manufactured prior to 1989 by the power house manager in Fuvahmulah Island.					
				5,819	**23,218**		

There are 3 potentially PCB containing oil filled circuit breakers in the Maldives. These units are located in Malé' city and are owned by STELCO. Currently these oil filled circuit breakers are operational in the electricity grid in Malé'. Table 2 below provides information regarding oil filled circuit breakers, potentially containing PCBs.

Table 2. Inventory of Potentially PCB Containing Oil Filled Circuit Breakers

No.	Location	Liquid/Insulating Oil Name	Volume of Insulating Oil (Ltr)	Gross Weight of the Equipment (Kg)	Operational Status
1	Malé'	Transformer Oil	43.5	134	In Use
2	Malé'	Transformer Oil	43.5	134	In Use
3	Malé'	Transformer Oil	195	232	In Use
		TOTAL	**282**	**500**	

Note: In an email dated 31 May 2016, STELCO indicated that these 3 switchgears are located on Maafushi, and not in Malé.

Finally, the PCB inventory identified potentially contaminated sites, due to leakage and spilling of potentially PCB contaminated oil (see also Table 2). Analytical data indicated that there are 10 potentially PCB contaminated sites in the Maldives (see Table 3 below).

Table 3: PCB contaminated sites in the Maldives

Island	Number of contaminated sites	Volume of PCB contaminated oil that could seep into soil (litres)
S. Hithadhoo	2	1,113
S. Feydhoo	1	521
S. Gan	1	521
GN. Fuvahmulah	6	2,540
Total no. of sites	10	

It should be noted that to date no PCB analysis of oil or soil has been undertaken.

The PCB preliminary inventory is unclear about the quantity of drained PCB oil, or PCB contaminated oil that might still be stored in 200 liter drums. Apparently, 4 out of the 15 transformers have at some point been drained, cleaned with Gen Clear (a type of electrical cleaner) and retro filled with mineral oil without PCBs. The remaining 11 electrical transformers have not yet been retro filled. According to the PCB preliminary inventory, there are currently no obsolete stocks of PCB contaminated oil in the Maldives, although containers (200 liter drums, and other type of containers) that used to contain PCB contaminated oils are still stored in the store room of the power station along with lubricant oil barrels.

Due to absence of guidelines and legislative measures regarding disposal of PCB contaminated oil or equipment in the Maldives, potentially PCB contaminated oil is sold by utility companies, which do not keep records of the

amount sold and its buyers. Island communities have been known to buy this oil to apply on wooden furniture and transport vessels. In some cases, PCB contaminated oil have been mixed and boiled with Naphthalene to make a termite resistance chemical mixture for wood. On the other hand, decommissioned electrical transformers are sold as scrap metal. STELCO has records of selling a transformer manufactured before 1989 as scrap metal. This transformer was sold after upgrading the 3.3 KV system in Malé' to 11 KV during the 1990s.

According to the PCB inventory, FENAKA Corporation is expected to upgrade the electricity network from 3.3 to 11 KV systems in GN. Fuvahmulah. As can be derived from Table 1, 10 of the 15 potentially PCB containing transformers are located there, which thus may be phased out.

In summary, the key findings of the preliminary PCB inventory were that 5 of the most populated islands hold 15 Electrical Transformers and 3 Oil Filled Circuit Breakers which potentially contain PCBs, containing a total of 6,100 litres of Potential PCB containing oil, in approximately ~ 24 tonnes of electrical equipment, owned by FENAKA Corporation (14 transformers) and STELCO (1 transformer and 3 circuit breakers).

Major challenges in PCB management were summarized to be: i) Leaks from transformers that are not properly fixed, resulting in PCB contaminated oil leaking from 10 electrical transformers and contaminating top soil in 10 different sites across the Maldives; ii) Lack of awareness among maintenance/power house workers on proper maintenance of PCB containing equipment and associated health and safety risks; iv) Transformers being sold as scrap metal when they are phased out; v) No proper practices exist for the disposal of PCB oil when equipment has been retro filled with mineral oil (often such oil is sold to the public for various uses including application on wooden furniture, boats, etc.).

As such the NIP recommends to develop an action plan to eliminate PCB-containing equipment and its wastes by 2025. Such an action plan would include the identification, labeling and mapping of PCBs and equipment containing PCBs in the country; establishing adequate (interim) storage facilities for phased-out PCB containing equipment; Formulating guidelines for the management of equipment containing PCBs; and, disposing safely of equipment containing PCBs.

Waste Management *(including management of hazardous and chemical wastes)*
The NIP also lists the reduction of UPOPs releases as its main POPs priority. The main source of these releases (98.6%) are the result of the open burning and incineration of wastes (of which resorts are responsible for 73% of emissions and the open burning of waste and accidental fires are responsible for 25.6% of emissions), while 1.2% of UPOPs releases originates from the transport sector. All other sources can be considered negligible. An overview of UPOPs releases as extracted from the 2015 UPOPs inventory is given in the Table 4 below.

Table 4. UPOPs releases sources in Maldives

Source Group	Source Category	Activity rate [tonnes/year]	Annual release [g TEQ/ year]	Residue [g TEQ/year]
1.Waste incineration	**1a. municipal solid waste incineration (resorts)**	**32,016**	**112.058**	**2.041**
	1b. Hazardous waste incineration	NA. Current waste management practices in Maldives do not include any waste segregation. Ultimately such wastes are mixed with municipal wastes, which are dumped in waste yards and burned to reduce the volume. Hence, release estimates from this source were not calculated.		

	1c. Medical waste incinerators	NA. Since no medical waste incinerators are currently operational, all the waste collected is being sent to Thilafushi for disposal. Release of PCDD/PCDF will thus be discussed under the source group of **open burning**. *Note*: According to the Ministry of Health, there is one operational incinerator located at the ADK Hospital in Malé, and 16 additional incinerators are expected to be installed in the future.		
3. Power generation and heating	3a. Fossil fuel power plants	3,531	0.124	0
	3d. Household heating and cooking (biomass)	1,374	0.027	negligible
	3e. Household heating and cooking with fossil fuels	537	0.001	negligible
4. Mineral Production	4a. Cement Production	NA. Since no production activities are taking place, the release of PCDD/PCDF by this source category has not been included in this inventory.		
	4c. Brick production	41,699	0.001	negligible
	4f. Asphalt mixing	NA. Since these projects are small scale projects conducted infrequently, there was no quantifiable data available from MRDC. Therefore, emissions from this source category were not calculated.		
5. Transport	5a. 4 stroke engines	2,553,638	0.255	
	5b. 2 stroke engines	638,409	1.596	
	5c. diesel engines	319,941	0.032	
6. Open burning	**6b. open burning of waste and accidental fires**	**130,971**	**39.291**	**1.310**
8. Miscellaneous	8c. Smoke houses	537	0.001	
	8e. tobacco smoking (cigars)	44	0.0001	0.0000584
	8e. tobacco smoking (cigarettes)	453	0.00	0.00
9. Landfills, waste dumps and landfill mining	9c. open water dumping	31,194,360 (m3/year)	0.006	
	Total		**153.3911**	

Note: There is no "2. Metal Production" or "7. Chemicals and Consumer Goods" as UPOPs source in Maldives.

In recent years there has been a significant increase in the magnitude of waste management problems throughout the Maldives for a number of reasons, including, but not necessarily limited to: the small size of the islands; changing consumption patterns; transportation difficulties, and environmental challenges brought about by the growing tourism industry. The quantities of solid waste generated exceed disposal and current treatment capacity. Most wastes are dumped onto the island foreshore and burned at low combustion temperatures.

Waste from the most populated islands is transported (by ship) to regional waste management centers. Currently the country counts three regional waste management centres, north at **Kulhudhufushi** (initially financed by the Asian Development Bank), central at **Thilafushi** and south at **Hithadhoo** (initially financed by ADB). The facility at **Kulhudhufushi** in the North is no longer being used as a regional facility, as it was developed on an inhabited island and the inhabitants of the island no longer agree to receive wastes from any islands other than their own.

Thilafushi *(servicing Malé & VilliMalé')*
With 40% of the country's population living on Malé, to solve the growing waste management problem, in 1992 the government authorized the transport of the capital's rubbish to Thilafushi, a lagoon formed by shallow coral reef, situated seven kilometres to the west of Malé, in 1992. Each day, barges delivered around 330 tons of refuse, which underwent rudimentary sorting and were then tipped into the shallow lagoon waters to create new land, a process known as land reclamation. In time, an artificial island, seven kilometres long by 200 metres wide, known to locals as 'Rubbish Island', was created. Today, a mixed solid waste, transportation and disposal service for Malé is

operated by Waste Management Corporation Limited (WAMCO). Three barges operate daily between Malé and Thilafushi Waste Management Center. Each barge makes two crossings per day carrying five (15 tonnes) tipping trucks.

The waste disposed of at the **Thilafushi** site is frequently burned seeping out plumes of dark smoke into the atmosphere. As there is a complete lack of infrastructure for both the collection and disposal of hazardous and chemical wastes, these wastes (e.g. batteries, asbestos, lead and electronic goods) are often simply disposed of along with regular household and end up being burned in the open or leak into the sea and/or soil. The BBC's report entitled 'Apocalyptic' Island of Waste in the Maldives in 2012 showed the waste challenges encountered on Thilafushi: http://www.bbc.com/news/world-asia-18073917.

Hithadhoo *(Addu City)*
The facility located at Hithadhoo of Addu City is privately operated, with a voluntary fee for domestic household collection services at 50 MVR/month. A collection service is also available to some local industries and a gate fee is charged for waste brought to the facility by other local industries and the tourist resort. Some separation of wastes occurs at household level and rudimentary separation occurs to remove PET, recyclable metals and glass from the general waste stream at the disposal site. Although scrap metal recyclers periodically visit the facility to "cherry pick" high value scrap items, no collection of separated recyclable material has taken place. Mixed wastes, instead of recyclable wastes, are stockpiled and periodically burned to reduce volume.

Hazardous waste management *(previously on Thamburudhoo, close to Malé, no longer existing)*
There is a complete lack of infrastructure for both the collection, transportation and disposal of hazardous and chemical wastes. In the past, hazardous waste was disposed of at the island of Thamburudhoo, which is used for military training purposes. According to the Malé' City Council no records have been kept on the amounts of chemical waste generated in the country. Until 2008, hazardous wastes (such as batteries and electronics) were separated at the collection area. Such wastes had separate collection slots, but ultimately these were either buried/burned together at Thilafushi.

Currently there is no designated area for disposing chemicals or hazardous wastes and consequently no facility that fulfils environmental criteria for disposing such types of wastes or chemicals exists. According to the National Chemicals Profile (2015) and the NIP, waste chemicals are either diluted and drained into the ground or sea, or hazardous chemicals and wastes are simply disposed of along with regular household and ultimately end up on one of the regional low-lying municipal dumpsites, which all undergo open burning to reduce the volume, releasing toxic smoke.

The disposal of such wastes is causing harm to the marine life. Due to high permeability of limestone and absence of underground protection measures, leakage into the groundwater and into the sea is inevitable as used oil and other waste chemicals leak into the surrounding areas. PCBs and polychlorinated pesticides, and concentrations of chemical elements are expected to be found in the surrounding and underground areas (NCP, 2015).

Tourist Resorts
The Maldives currently hosts 101 tourist resorts. Waste management activities on the resorts fall under the jurisdiction of the Ministry of Tourism, Arts and Culture. The tourism regulation "Regulation on Disposal of Garbage" requires all tourist resorts to burn their combustible wastes (including plastic bags) in on-site incinerators. The incinerators used at resorts are simple municipal solid waste incinerators that are batch fed on as needed basis, with no air pollution control systems. As such these incinerators are classified as a Class 1 incinerator for the purposes of this inventory. The residual ash produced by incineration is bagged in plastic bags and sent for disposal[13]. Resorts are required to crush cans and bottles. Food wastes may be ground up and disposed of in deep water. In theory, resort islands may only remove processed recyclable wastes and other non-combustible residual wastes for disposal elsewhere. In practice, however, mixed solid wastes from resorts are often back loaded on resort service dhonis (boats) traveling between Malé and the resort and disposed of at Thilafushi. An unloading fee is charged based on the length of the dhoni per hour it is berthed at the waste management center's unloading platform.

[13] Assessment of Solid Waste Management practices and its vulnerabilities to Climate Risks in Maldives Tourism Sector, 2013

The Ministry of Environment is working with a number of resorts to pilot improved practices for waste management (see section on *Associated Baseline Projects* in page 15).

Other inhabited Islands

Arrangements for solid waste management on the inhabited islands remain inadequate. Up until more than a decade ago, there was little in terms of infrastructure investment in the waste sector on inhabited islands. Waste management infrastructure development on these islands was established following the Indian Ocean Tsunami in 2004 when tsunami debris and other mixed wastes accumulated on impacted islands. The Government started a clean-up programme and realized that there was an urgent need for providing necessary infrastructure to those islands. With the financial support of organizations such as the Association of the Australian Red Cross, the Canadian Red Cross, UNDP and the EU/World Bank, island waste management centres were constructed on tsunami affected islands.

Nowadays, and in particular after the Waste Management Regulation (2013) and the Land Use Planning Regulation (Binaaveshi Gavaaindhu) of 2008 were adopted, each island is required to have at a minimum a designated waste collection area or waste management center. However, such a collection area/center might be located on the island's foreshore or any other area on the island. Often wastes are burnt at low combustion temperatures, while leachates and unconsolidated wastes enter the lagoon systems, and airborne contaminants are released into the atmosphere.

Although those centers are an improvement from past practices, waste management (and recycling) practices require further improvement, and measures for the management of hazardous chemicals and wastes need to be urgently put in place (hazardous waste management, with a few exceptions, has on the majority of islands not yet been addressed).

Recycling

The potential for recycling of metal, plastics, and glass from tourist facilities and island communities is limited due to the relatively low percentage of these materials in their waste streams. Additionally, the dispersed nature of tourist facilities and island communities presents a logistics obstacle to consolidate the materials for potential buyers markets. Finally, the Maldives is located far from potential recyclable users such as India. All these aspects present challenges to the improved managements of recyclables.

Policy and Regulatory Framework pertaining to the Sound Management of Chemicals

The 2015 NCP provides an overview of the current legal instruments used to manage chemicals in Maldives. A summary of the NCP information is provided in Table 5.

Table 5. Legal instruments to manage chemicals

Legal Instrument	Category of Chemicals, Type of byproduct, or Type of Related Waste Covered	Objectives of Legal Instrument
Environment Protection and Preservation Act – Law no. 4/93.	Harmful waste, oil, poisonous gases. Hazardous/toxic or nuclear wastes.	The Law requires the mandated government authorities to provide the necessary guidelines and advise on environmental protection in accordance with the prevailing conditions and needs of the country.

Substances prohibited to be brought into the Maldives – Law no 4/75	Chemicals, Acid, Poisons, Toxic Substances, Explosives.	Regulating imports of prohibited substances and dangerous chemicals. Implemented and enforced by Ministry of Defense and National Security (MDNS). Article 5 of the Act states that all dangerous chemicals (except for fireworks), acids and other poisonous items produced using these chemicals shall only be imported into the country with the prior written permission and approval (in the form of a permit) issued by MDNS. MDNS keeps records of (1) chemical and amount allowed to be imported, (2) importer details, (3) storage location, (4) intended use of chemical. Before the permit is issued, the applicant/importer is required to submit all necessary documents, including a copy of a "no objection" document for chemicals that are monitored by other government agencies. For security reasons, a copy of the permit will be sent to (1) Maldives Customs Service, (2) Maldives Police Service and (3) MNDF Port and Harbour Unit based in the Port. Article 11 of the same law, states that the final disposal (when required) of all items mentioned in the law (including chemicals), is the responsibility of the MDNS, which has assigned the Maldives National Defence Force (MNDF) to carry out this function on its behalf.
Waste Management Regulation – Regulation no: 2013/R-58 ***(pursuant to EPPA - Law no. 4/93)***	Hazardous waste (e.g. explosives, flammable liquids/solids, corrosives, toxic/poisonous substances/organic peroxides, oxidising, Infectious substances extremely hazardous to health, Ecotoxic, etc.). Special waste (e.g. combustible/reactive /corrosive/ poisonous waste).	The standards governing the following are specified in the regulation: 1) Waste collection; 2) Land and sea transport of waste; 3) Waste treatment; 4) Waste storage; 5) Management of waste disposal centres; 6) Landfilling; and 7) **Hazardous waste management**. The WM regulation stipulates that: i) Any waste specified as hazardous wastes in Annex (j) of the regulation shall not be burned under any circumstances; ii) Any waste specified as hazardous wastes shall not be dumped on any area of Maldives; iii) Hazardous waste shall be transported from one place to another having ensured that it is packed in a leak-proof and sealed container; iv) Hazardous waste can only be transported by EPA approved/registered waste transportation vessels/vehicles.
Draft Solid Waste Management Bill ***(Draft January 2016)***		This Act is to provide for the legal framework for waste management; to provide a basis for implementation of national obligations under international instruments concerning waste management; to protect health and wellbeing of the people and the environment and to secure ecologically sustainable development through reasonable measures for the prevention of pollution and environmental degradation arising due to the indiscriminate disposal of waste into the environment.
Regulation on Protection and Conservation of Environment in the Tourism Industry ***(pursuant to Law No. 2/99 (Maldives Tourism Act)***	Toxic or hazardous waste.	To protect the environment in the tourism industry.
Draft Pesticides Bill	Pesticides	To regulate the management, use and distribution of pesticides with the objective of protecting human, animal and plant health and the marine and terrestrial environment.
Law on Drugs – Law no. 17/2011	Narcotic drugs and psychotropic substances	To regulate the production, import, import, export, trade, possession or handling of any narcotic drugs or psychotropic substances and precursor chemicals.

Regulation on Petrol Filling Stations *(pursuant to Law no 4/75)*	Petroleum products	To regulate the storage, handling, transport and sale of petroleum products.
Draft Chemical Regulation *(Pursuant to Law no 4/75)*	Hazardous chemicals	To regulate the import, sale, use, permits, safe handling, storage, and disposal of hazardous chemicals.
Protection of Public Health Act - Law No. 7/2012		To protect public from any health risks of chemicals
International Health Regulation 2005		To develop capacity to detect and respond to chemical events of national and international health concern (Annex 1: IHR Potential Hazards: Chemical events
Draft Chemical Weapons Bill	Chemical weapons	For the protection and prohibition of chemical weapons.
Regulation on Pharmaceuticals – Regulation no. 2014/R-46	Pharmaceuticals	To regulate the import, export, sale, Prescription, handling, transport and storage of pharmaceuticals.

Legislations regulating certain aspects of chemicals (such as Waste Management) and draft bills of regulations specific to chemicals (such as the Pesticides Bill and the Chemical Regulation) do exist in the country; however, they are not yet enforced or implemented properly due to lack of political will and financial resources.

There is currently **no national legislation on chemical safety**. No chemicals are manufactured in the Maldives, and the import is regulated by the MDNS. The Law on Drugs (Act no. 17/2011) and the Law on Items Prohibited to be brought in to Maldives (Act no. 4/75) regulates the import of prohibited chemicals used as precursor chemicals or explosives.

Furthermore, currently there is no control on the quality of the chemicals and labeling. Requirements for inspecting chemical storage warehouses are also inadequate and there are no specific reporting requirements for chemical distributors, retailers and consumers. According to MFA, banned pesticides are still being imported to the Maldives without detection (and prior approval from MDNS). Thus, this needs to be addressed by employing a solid mechanism to inspect such chemicals at the time of import. Moreover, there is no comprehensive mechanism for licensing distributors, users and retailers of chemicals (such as asbestos), except for chemicals used for pharmaceutical purposes.

Associated Baseline Projects

Table 6 lists on-going and planned associated baseline projects, which either address the management of wastes, in particular MSWM and hazardous waste management, or are addressing the management of POPs. These projects and interventions are considered associated baseline projects to the proposed project, because they i) provide co-financing to the project; ii) support the waste management foundation upon which proposed project activities will be built; or iii) are putting in place policy, regulatory and institutional capacity from which the proposed project will benefit. All listed projects are taking place in the geographical areas of where the proposed GEF/UNDP project is expected to focus its efforts.

Table 6: Overview of associated baseline projects

Title of Project	Donor	Link to Project
Enabling Activities to Facilitate Early Action on the Implementation of the Stockholm Convention on POPs **GEF: 430,000 US$** **Co-financing: 280,000 US$**	**GEF** (GEF ID: 5324).	Preparation of the Maldives National Implementation Plan (NIP) entitled "*National Implementation Plan Stockholm Convention Republic of Maldives*" which determines the country's baseline in terms of POPs issues and prioritized the country's POPs management issues. The NIP is expected to be finalized by July 2016 and submitted by August 2016.
Strengthening Capacities for National SAICM Implementation in Maldives **SAICM QSP TF: 233,744 US$**	**SAICM QSP TF**	Preparation of the Maldives' National Chemicals Profile (2015) with the objective to assess the chemical management situation in the country, to identify gaps and prioritize issues regarding all aspects of chemicals management throughout its lifecycle.
Establishment of Central Chemicals Management System **SAICM QSP TF: 20,221 US$**	**Ministry of Environ-ment and Energy**	The Ministry of Defence and National Security (MDNS) is in the process of establishing a central chemical management system, to be established within the network of the National Centre for Information Technology (NCIT). Once the central chemical management system has been established, all chemical related data can be harmonised. This project/activity was funded by Ministry of Environment and Energy (~ 20,221 USD/310,000 MVRF) as part of the project "*Strengthening Capacities for National SAICM Implementation*". However, funds provided were not sufficient to establish the entire system, as an additional MVR 400,000.00 (~ 26,000 US$) is required.
Potential Phase-out of PCB containing transformers (2016 – 2018) **STELCO: 138,618 US$** **FENAKA: 264,400 US$**	**PCB Holders**	According to the PCB inventory, FENAKA Corporation is expected to upgrade the electricity network from 3.3 to 11 KV systems in GN. Fuvahmulah. As seen in Table 1, 10 of the 15 potentially PCB containing transformers are located there, which may be phased out. **STELCO** – The 3 switchgears potentially containing PCBs are located in Maafushi and the replacement work is currently ongoing. New switchgears will be installed at a relocated power house which is expected to be completed by September 2016. The total budgeted amount for replacing the 3 switchgears is 138,618 US$. STELCO does not have any plans/means to dispose of these oils/equipment, and it has requested the proposed project to ensure disposal. **FENAKA** - *Ongoing activities for changing the transformers* (to be completed by the end of July): GN. Fuvahmulah (transformer); GN. Fuvahmulah (packaged transformer); GN. Fuvahmulah (transformers); *Planned activities for changing the transformers*: GN. Fuvahmulah (packaged transformer); S. Hithadhoo (transformers). In total FENAKA estimates replacement costs at 264,400 US$. FENAKA indicated that they do not have the expertise and resources for the proper disposal of the replaced transformers and requested the proposed project's expertise and resources for the sound disposal of these transformers.

Waste Collection Survey (Malé) & Saafu Raajje campaign **WAMCO: 2,640,000 US$/year**	**WAMCO**	On 11 April 2016, the MoEE and WAMCO launched a report on a Waste Collection Survey (direct observations and door-to-door survey) with had as objective to analyze the feasibility for WAMCO to establish convenient mechanisms to manage household waste when later this year WAMCO will introduce waste collection services in Malé. The total cost of the survey was 5,000 US$ (MVR 78,000.00). WAMCO also signed an MOU with MoEE to collaborate on the Saafu Raajje campaign, which aims to promote and work towards a clean environment by reducing waste in the Maldives. Vandhoo RWMF is not in operation yet. Thus, the operational cost figure provided is an estimation of operational cost for operating Vandhoo once it is handed over by MEE to WAMCO. In its business plan for Vandhoo, WAMCO estimated that an operational cost of MVR 3.4 million per month would be incurred to operate Vandhoo RWMF.
Malé City Waste management project (Jan. 2016 – July 2017) 3.25 million US$	**GoM (potentially through a loan)**	Solid waste management facility targeted to manage solid waste generated in greater Malé' region (Malé', HuluMalé' and Villingili), including machineries and equipment)

Maldives Environmental Management Project (MEMP) (10 June 2008 – 30 June 2016) **Loan: 18,9 million US$**	**World Bank**	**Project Objective 1**: Establish a solid waste management system and ensure that inhabitants on targeted islands (45 inhabited islands including resorts and future resorts located in the northern region's Noonu Atoll, Raa Atoll, Baa Atoll and Lhaviyani Atoll) use solid waste management facilities, reducing the risks of contamination associated with accumulated wastes and sea dumping. **Project Objective 2**: Build human and technical capacity for environmental management so that the environmental dimension is integrated in planning processes. **Component 1: Regional Solid Waste Management programme** (12.11 million US$) including the establishment of a regional solid waste management (RSWM) system on the island of Vandhoo, which consists of the installation of an incinerator (40 tonnes per day which is expected to incinerate all combustibles) and building the sanitary landfill (which is mainly intended for incinerator ashes which will be landfilled in a secured cell) as well as other supportive infrastructure. Large pieces of wood and bulky waste will be shredded before incineration; Recyclables will be sorted, baled and exported. However, the facility does not have provisions and capacity for chemicals and hazardous waste management (which mainly consist of used batteries, paints, e-waste, etc.). The project also supports the construction of two waste transfer vessels. The RSWM system will be used by participating inhabited islands as well as by tourist resort islands in the North Central Region, serving a total of 45,000 inhabitants. Furthermore this component includes the design and construction of island waste management centers (IWMCs), with a strong focus on composting of organic waste and separating recycled waste for reuse or sale; the creation of a regional transfer system for transporting residual waste to the RWMF; and development of suitable institutional arrangements for operationalizing the RSWM system. The latter included the establishment of 8 staff Waste Management and Pollution Control Department (WMPCD) under the MEE in December 2014. MEE has also updated the Waste Management Policy and developed the waste regulation. The Waste Management Act is currently being drafted. The WAMCO was revived in September 2015 to assume responsibilities for waste management across the Maldives. The project is currently supporting WAMCO to recruit staff required to manage the RSWM system. The RWMF is planned to be transferred to WAMCO including the transfer vessels by the end of 2016. **Component 2**: **Capacity building for environmental management** (2.94 million US$) aimed to build a cadre of environmental specialists to help manage the country's environmental pressures, including a Bachelors of Environmental Management program at the Maldives National University; targeted overseas scholarships at the post-graduate and undergraduate levels; and community training for solid waste management and marine monitoring. **Component 3: Technical assistance for strengthened environmental management and monitoring** (2.22 million US$) targeting the expansion of the knowledge base regarding critical natural resources on which the country's ecosystem and economy depend and improved coordination among disparate agencies in addressing environmental pressures, including training of community monitors on vegetation cover and coastal erosion; compilation, data analysis and reporting on erosion and the terrestrial environment; studies and monitoring of the coral reef ecosystem and bait fishery management; and development of spatial database and planning capacity in order to integrate the environmental dimension in the country's planning.

Huvadhu Atoll regional waste management facility project (Jan. 2016 – Dec. 2017) **5 million US$**	**GoM**	Waste generated by all the inhabited islands and resorts in the region is expected to be managed by the regional facility, replicating the World Bank R.Vandhoo regional waste facility model. The objectives are: establish a proper waste transfer system between the islands of addu city (seenu atoll) and other atolls in the vicinity (huvadhu and gnaviyani) with a minimum of two vessels (landing crafts) construct/upgrade island waste management centres at gnaviyani atoll and huvadhu atoll provide composting and waste management equipment to the island waste management centres at gnaviyani atoll and huvadhu atoll provide means of waste collection (pickups, burrows, wheelie dustbins etc.) to the island waste management centres at gnaviyani atoll and huvadhu atoll create island waste management plans for the island waste management centres at gnaviyani atoll and huvadhu atoll and approve the plans through environmental protection agency provide waste management and composting training to the island councils that will be in charge of the waste management at the island waste management centres at gnaviyani atoll and huvadhu atoll
Addu Atoll regional waste management facility project (Jan. 2016 – Dec. 2017) **5 million US$ (GoM)** **4.5 million US$ (IRENA)**	**GoM/ IRENA**	Waste generated by all the inhabited islands and resorts in the region is expected to be managed by the regional facility, replicating the World Bank R.Vandhoo regional waste facility model. The projects objectives are: - Establishment of a total solution in waste management for the region with the second largest population within the country - Generation of at least 18 percent of the energy demand using heat to energy conversion - Increasing job opportunities within the city in operational and maintenance fields in addition to the construction field. - Reduction of the consumption of conventional diesel and of the volume of waste that goes to the landfill
Establishment of Regional Waste Management System in Zone 1 Islands **(July 2015 – Dec 2018)** **7.25 million US$**	**OPEC Fund for Inter-national Develop-ment (OFID)**	Establishment of Regional Waste Management System in Zone 1 Islands (Haa Alifu, Haa Dhaalu and Shaviyani Atoll).

Maldives Ari Atoll Solid Waste Management Project (21 Nov. 2012 – 30 Nov. 2014) **1.33 million US$**	**World Bank**	**Objective**: Build technical and human resource capacity to effectively manage solid waste generated in selected inhabited islands of the Ari Atoll, to reduce environmental risks to marine habitats and GHG emissions. **Results:** Five pilot islands (Dhigurah, Fenfushi, Ukulhas, Thoddoo and Dhangethi of the Ari Atoll) participated in the establishment of an integrated SWM system composed of: (i) waste segregation at the household level; (ii) composting of organic waste, recycling and storage of residual waste prior to final disposal at island waste management center (IWMC) level; and (iii) a transport system for removal of the residual waste from the IWMCs and disposal at the Regional Waste Management Facility in Thilafushi Island. Targeted communities included about 770 households with approximately 4,509 people. In addition, individuals and institutions beyond the pilot islands including Island and Atoll Councils, other inhabited islands and atolls, interested resorts, staff of Ministry of Environment and Energy (MEE) and Environment Protection Agency (EPA) benefitting from the projects' technical and institutional development activities.
Construction of Island Waste Management Centers **(Completed in 2009)**	**Canada (CRC)** **Australia (ARC)** **Gov't of Maldives** **UNDP**	Following the 2004 Tsunami, the Government constructed 74 Island Waste Management Centers (IWMC) on tsunami impacted islands with the assistance from several aid organizations. In following years, the development basic waste management infrastructure was extended to other inhabited islands. In total, 121 IWMCs have been constructed to date. The design of IWMC is based on the premise that 70% of the household waste fraction produced on the islands is organic and can be adequately treated, reused or disposed of on the island through composting; 1% is hazardous waste and 3% is recyclable and can be stored on the island and removed periodically; the remaining residual fraction (26% of the household waste generated) will require routine collection and transportation for disposal elsewhere.
Decommissioning of installed incinerators at resorts (Jan 2016- Dec 2017)		The decommissioning of installed incinerators at resorts has been planned for as incinerators will no longer be required for the Northern region islands once the R. Vandhoo waste management facility becomes operational. Initially such interventions will be supported for the resorts in Noonu, Raa, Baa and Lhaviyani. The plan is to decommission and donate the incinerators of northern region to other islands that lacks such a facility.
Increasing Climate Change Resilience of Maldives through Adaptation in the Tourism Sector (2011 – 2014) **GEF Grant: 1,650,438 US$** **Co-financing: 1,650,438 US$**	**GEF (ID: 4431)**	**Objective**: Increase adaptive capacity of the tourism sector in the Maldives to respond to the impacts of climate change and invest in appropriate, no-regrets adaptation measures, including: Assessment on freshwater and waste water management in the tourism industry of Maldives, including guidelines on how to climate proof water resources as an adaptation strategy. Assessment on waste management practices in the tourism sector of Maldives to identify the climate change vulnerabilities of waste management in the sector[14] (MoEE, 2015). Supported the development of the environment section of the 4th Tourism Master Plan. Reported on economic valuation of climate risks in the tourism industry of Maldives and its depended communities. Developed an addendum to the national building code in reference to resort infrastructure. Revision of existing laws and regulations to incentivise private sector investment in climate change adaptation.

3) The proposed alternative scenario, GEF focal area[15] strategies, with a brief description of expected outcomes and components of the project

[14] http://www.tourism.gov.mv/downloads/publicaltions/SolidWaste.pdf

[15] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving.

In order to reduce the risks of POPs on human health and the environment and address the challenges that the Government of the Maldives faces in achieving the sound management and disposal of POPs, POPs containing wastes and reducing releases of POPs to the environment, the project proposes the following interventions:

COMPONENT 1. STRENGTHENING THE REGULATORY AND POLICY FRAMEWORK AND INSTITUTIONAL AND TECHNICAL CAPACITY FOR THE SOUND MANAGEMENT AND DISPOSAL OF POPS, CHEMICALS AND WASTES

As described in the project baseline, the import and use of chemical substances, including POPs, is regulated by the Constitution of the Maldives, legislative acts and normative-methodical documents (see also Table 5). However, the NIP (2016) analysis of existing legislation on POPs treatment shows the lack of a normative base for POPs treatment.

One of the main challenges encountered in improving the management of POPs, chemicals and their wastes in the country is the fact that legislation regulating certain aspects of chemicals (such as Waste Management) and draft bills of regulations specific to chemicals (such as the Pesticides Bill and the Chemical Regulation) do exist in the country but are not yet adopted or implemented/enforced properly. The same goes for Article 5 of Law no 4/75 "*Substances prohibited to be brought into the Maldives*", for which the ministry has formulated the relevant regulation as stated in Article 5, however, it is yet to be implemented.

The implementation of these regulatory aspects has been said to be delayed due to the lack of trained staff, technical capacity, financial resources, high-level commitment and responsibility in comprehending the real impacts of such laws, a national chemicals database, a general baseline indicating the usage and disposal of these chemicals, and analytical capacity, among other aspects.

It is for this reason that Project Component 1, will focus on achieving two Outcomes: *Outcome 1.1: Further enhance the policy and regulatory framework for the sound management of chemicals* and *Outcome 1.2: Capacitate key public and private institutions and entities to operationalize the regulatory and policy framework for the LCM of chemicals and wastes*.

Outcome 1.1 Policy and regulatory framework for the sound management of chemicals enhanced

Output 1.1.1 Advance the development and adoption of regulatory measures pertaining to POPs and SMC and introduce economic instruments and incentives (EPR, PPP) to reduce POPs and other harmful releases

Based on the analysis of the National Implementation Plan (2016) and the National Chemicals Profile (2015), legislation regulating certain aspects of chemicals (such as the Solid Waste Management Bill – *Draft January 2016*) and draft bills of regulations specific to chemicals (such as the Pesticides Bill and the Chemical Regulation) do exist in the country but are either not yet adopted or lack proper implementation/enforcement.

As part of this Output, first and foremost the project will support the regulatory authorities, ministries as well decision makers in creating additional awareness on the importance of advancing the approval and adoption of pending regulatory measures pertaining to SMC (in conjunction with Component 4), and building (through Outcome 1.2) their capacity to get the regulatory framework approved and afterwards operationalized. An important reason for this is that the NIP identified that the majority of UPOPs releases results from the incineration and open burning of municipal solid waste. Although the project cannot be ultimately held responsible for the approval of these regulatory measure, considering this is the first POPs/chemicals project in the Maldives (with the exception of one GEF EA and one SAICM QSP TF project), it is important that the project helps advance the regulatory environment to the extent possible.

Although the Solid Waste Management Bill, Pesticides Bill and the Chemical Regulation have been drafted, there are certain aspects related to the management of POPs (such as guidelines for the management of PCBs) and hazardous wastes for which no guidelines for their management exist or which are currently being drafted (e.g. at the time of the PIF's development, the government was in the process of drafting a guideline for hazardous waste). Building upon these efforts and based on a detailed hazardous waste assessment to be undertaken as part of Output 2.2.1 (using as a baseline the NIP and obtaining further detailed information on POPs, POPs containing products, or

POPs precursors) national stakeholders will decide on which POPs and POPs containing products/precursors are considered the most pressing priorities and for which it is urgent that guidelines for their management (which would cover the entire process from import to the point of general/disposal), or import bans (for products containing POPs that cannot be managed in the country) will be formulated.

Secondly, the project will support the introduction of economic instruments and incentives (such as Extended Producer Responsibility (EPR), and Payment for Pollution Prevention (PPP)) to reduce releases of POPs and other harmful releases. It will do so by initially conducting an assessment to determine which potential economic incentives could be introduced in the Maldives and for which chemicals, products and wastes such economic incentives would provide sustainable long-term solutions and encourage the introduction of Best Available Technologies (BAT)/Best Environmental Practices (BEP), with a focus on POPs containing products, or POPs precursors (products which through processing or burning could lead to the formation and release of POPs). This would be followed by the drafting of an EPR or PPP general regulatory and would be followed up by the development of particular measures for priority products and waste streams. The project would also support the approval process for this measure.

1.2 Key public and private institutions and entities capacitated to operationalize the regulatory and policy framework for the LCM of chemicals and wastes

1.2.1 A harmonized Central Chemical Management System (CCMS) established within NCIT (covering chemicals' import, use, storage, management, disposal, POPs and PRTR system).

Data on the import of chemicals are managed by the Maldives Customs Service (MCS), while a record of permits and amount of chemicals that are permitted to be imported into the country is kept by MDNS. As per law 4/75 (Act on Goods Prohibited to be Imported into the Maldives), Article 5 of the Act states that all dangerous chemicals (except for fireworks), acids and other poisonous items produced using these chemicals shall only be imported into the country with the prior written permission and approval (in the form of a permit) issued by MDNS. MDNS keeps records of (1) chemical and amount allowed to be imported, (2) importer details, (3) storage location, (4) intended use of chemical.

However, the country does not yet dispose of a database which captures the usage and disposal of chemicals. As a result, there is no clear insight in how much chemical and hazardous waste is being generated and what type or quantity of harmful substances are being released to the environment. This in turn hampers monitoring, implementation of legislative measures as well as decision making at local and national level.

As a first step, the Ministry of Defence and National Security (MDNS) (with financial support provided by the Ministry of Environment and Energy) started the establishment of a central chemical management system, to be set-up within the network of the National Centre for Information Technology (NCIT). Once the central chemical management system is established, all chemical related data could be harmonized in that location and system.

However, there are a number of aspects that would require further support from the proposed project. In order to ensure that the database/information system allows the country to report to chemicals-related Conventions, and monitor and improve the management and release of POPs (use, release, and disposal), the proposed project will ensure that the Central Chemical Management System (CCMS) is designed/adjusted in a way that allows the government to monitor POPs and keep an up-to-date POPs database. Considering that the GoM/GEF/UNIDO project "*Enabling Activities to Facilitate Early Action on the Implementation of the Stockholm Convention on POPs*" (GEF ID: 5234) is nearing its completion, information resulting from the NIP process can be used as a baseline, while additional/new or more detailed information becoming available throughout the project's implementation will be used to further refine the POPs database.

Furthermore, a Pollutant Release and Transfer Register (PRTR) system will be incorporated in the Central Chemical Management System (CCMS) which can capture potentially hazardous chemical substances and/or pollutants released to air, water and soil and transferred off-site for treatment or disposal. This will allow the government to

also obtain a better sense of the generation and disposal of chemical and hazardous wastes.

1.2.2 Capacity at the regulatory authority strengthened for the development and effective enforcement of standards/ guidelines related to collection, transportation, storage, use and disposal of POPs, hazardous chemicals and wastes

The main priority identified in the NIP (2016) – see also Section 6, Table 9 Priorities for the Management of POPs in the Maldives (NIP, 2016) - was the need for institutional strengthening of relevant institutions which have a mandate for the sound management of chemicals. In particular, the NIP requests the capacity building of government staff to support the development and effective enforcement of standards/guidelines related to the collection, transportation, storage, use and disposal of hazardous chemicals and waste.

The project will train staff of the regulatory authority (as well as other key stakeholder identified during the project's PPG phase) on policies and national planning, (waste and chemicals) assessments, BAT/BEP guidelines for priority chemicals, international standards, and other technical guidelines related to the collection, transportation, storage, use and disposal of hazardous chemicals and waste, with a particular focus on POPs, POPs containing products and wastes, and POPs precursors.

Furthermore, the project might (in conjunction with Component 2 – in particular Outcome 2.1) provide relevant authorities with equipment that facilitates the effective enforcement of guidelines.

1.2.3 MCS, MDNS and other responsible authorities trained on inspection, identification and monitoring procedures for chemicals, and products containing chemicals of concern.

The NIP (see also Output 1.2.2) requests the capacity building of custom officers from the Maldives Customs Service (MCS), staff of the Ministry of Defense and National Security (MDNS) as well as other relevant authorities in the area of inspection, identification, handling, transportation, storage, disposal and monitoring procedures for dangerous chemicals as well as products containing chemicals of concern.

It is important for the Maldives, which is in a remote location and for which import by shipping vessel is the principle avenue for the importation of chemicals, to ensure that the first point of entry of a chemical or product containing a chemical of concern into a country is well managed. For this reason, the project anticipates to train MCS customs officers, MDNS staff and related responsible authorities on inspection and identification procedures.

Furthermore, the project might (in conjunction with Component 2 – in particular Outcome 2.1) provide relevant authorities with equipment that facilitates inspection and enforcement.

COMPONENT 2. ESTABLISH SYSTEMS FOR THE SOUND COLLECTION, LABELING, STORAGE AND DISPOSAL OF HAZARDOUS CHEMICALS AND WASTES

One of country's three main POPs priorities (priority no. 1 is being addressed by Component 1), as listed in the NIP (2016) is the *development of an action plan to eliminate PCB-containing equipment and its wastes by 2025*, which should include: i) The identification, labeling and mapping where PCBs and equipment containing PCBs are located in the country; ii) Putting in place labelling mechanism for all PCB containing equipment; iii) Establishing adequate storage facilities for replaced equipment containing PCBs; iv) Formulating guidelines for disposal of equipment containing PCBs; and v) Disposing safely of equipment containing PCBs).

It is for this reason that project **Outcome 2.1** will have as objective the identification, labelling, export and disposal of PCB containing equipment and wastes.

Another priority, as identified by the NIP and the NCP is *(hazardous) waste disposal/storage infrastructure*. There is a complete lack of infrastructure for both the collection and disposal of hazardous and chemical wastes. In the past, hazardous waste was disposed of at the island of Thamburudhoo. However, currently there is no designated area for disposing chemicals or hazardous waste and consequently no facility that fulfils environmental criteria for disposing such types of wastes or chemicals exists. According to the NCP and the NIP, waste chemicals are either diluted or

drained into the ground or sea, or hazardous chemicals and wastes are simply disposed of along with regular household and ultimately end up on one of the regional municipal dumpsites, which all undergo open burning to reduce the volume and consequently lead to the formation of UPOPs. Although significant interventions are currently being supported in the area of MSWM (World Bank, GoM, IRENA, OPEC, etc.), the management, disposal and treatment of hazardous waste is lacking behind. It is therefore urgent that approaches for hazardous waste management are integrated into on-going and planned Regional Waste Management Systems and technical capacity of entities and authorities is built to manage, treat and dispose of these types of wastes.

Further linked to the unsound management of hazardous waste is the release of UPOPs from the open burning and incineration of household and hazardous wastes, which makes 25.6% and 73% of the country's UPOPs emissions respectively. It is for this reason that the reduction of UPOPs releases from waste burning/incineration is listed in the NIP as the country's main POPs priority.

To support the country in introducing BEP/BAT approaches for the sound management of hazardous wastes and reduce release of UPOPs from open burning and low technology incineration, **Outcome 2.2 will have as objective to reduce releases of POPs and PTS from the unsound disposal and treatment of (hazardous) chemicals and wastes.**

Outcome 2.1: 24 tonnes of PCB containing equipment and wastes identified, labeled, soundly managed and exported for disposal.

2.1.1 Inventorize, analyze, label and map PCBs containing equipment and waste present in the country.

According to a preliminary PCB assessment carried out in support of the NIP's preparation finalized in 2015, the Maldives counts 18 pieces of electrical equipment (15 Electrical Transformers and 3 Oil Filled Circuit Breakers totaling approximately ~ 24 tonnes, containing about 6,100 litres of potentially PCB contaminated/containing oil). These units are located on five of the most populated islands and are owned by 2 utility companies, FENAKA Corporation (14 transformers) and STELCO (1 transformer and 3 circuit breakers).
However, there have been a few updated information that some PCBs contaminated transformers might have been already replaced by the PCB holders. Thus to clarify the status, under this Output, a detailed inventory, analysis, labelling and mapping of PCBs containing equipment and waste will be undertaken and the correct and updated information on PCB will be obtained.

With the exception of the NIP inventory, the country and the PCB holders have not yet undertaken any action to improve the management, maintenance, safeguarding and phase-out of equipment potentially contaminated/containing PCBs.

This project component will build upon PCB related regulatory activities that will be supported as part of project Component 1. These would include: The review and revision (if necessary) of PCB related legislation; Elaboration of PCB guidelines that will cover all stages of PCB management (identification, sampling, servicing, safeguarding, and handling, storage, disposal of PCB containing equipment in service and upon retirement); Drafting of regulations that would require the registration, labeling and status reporting of potential all PCB and PCB containing equipment; and, Development of standards and methodologies for on-going identification and assessment of PCB contaminated sites.

This will be complemented by Outcome 2.1 which will support: i) Awareness raising and information seminars on PCBs and their management for PCB holders, relevant government agencies, the academic community, affected communities, NGOs, etc.; ii) Detailed inventory (including training of inspectors, government officials, project staff and PCB holder staff) of PCB containing and contaminated equipment in service, existing PCB waste stockpiles and PCB contaminated sites; iii) Provision of PCB screening test kits and portable analytical units as well as training of personnel in their use; iv) Undertaking analysis of PCBs content in oils (either at international level or national level – whichever considered more cost-effective in terms of long-term financial sustainability); v) Incorporation of PCB related data into the national information system (to be established as part of *Output 1.2.1*); vi) Putting in place a labelling mechanism for all PCB containing equipment and ensure all PCB containing equipment is adequately

labelled.

2.1.2 Facilitate the environmentally sound management and disposal of 24 tonnes of phased-out PCB containing equipment and waste abroad.

As part of this Output, the project aims to i) Develop and prepare for endorsement an action plan to eliminate PCB-containing equipment and its wastes by 2025 consistent with Convention requirements; iii) Develop an action plan for the rehabilitation/remediation of contaminated sites; iii) Undertake an assessment to determine the most environmentally sound and cost effective disposal method(s) – this activity would be undertaken in close coordination with *Outcome 2.2*; v) Undertake an Environmental Impact Assessment for the establishment/refurbishment of a secure storage facility for the temporary storage of phased-out PCB containing equipment, stockpiles and wastes (at one (or two) of the holders sites); iv) Undertake a risk assessment prior to the movement/transport of PCB containing wastes from the various islands to a centralized interim storage facility(ies); vi) Train and equip service providers capable of undertaking packaging, transportation, and residual contamination clean-up for PCB wastes; vii) Transport PCB containing waste to the centralized interim storage facility; viii) Ensure the environmentally safe disposal of 24 tonnes of PCB stockpiles (most likely by export to a qualified disposal facility).

Note: According to the PCB inventory, FENAKA Corporation is expected to upgrade the electricity network from 3.3 to 11 KV systems in GN. Fuvahmulah. As seen from Table 1, 10 of the 15 potentially PCB containing transformers are located there, which may therefore be part of the phase-out plan. This would present a very time sensitive opportunity both in terms of co-financing as well as in ensuring that phased-out equipment is safely handled and stored awaiting its decontamination/disposal abroad.

Outcome 2.2 POPs and PTS releases from unsound disposal and treatment of (hazardous) chemicals and wastes reduced

2.2.1 Develop the capacity of regional waste management facilities and waste management actors for the sound management, interim storage and disposal of hazardous and toxic wastes

According to the NCP and the NIP, there is a complete lack of infrastructure for both the collection and disposal of hazardous and chemical wastes. Waste chemicals are either diluted or drained into the ground or sea, or hazardous chemicals and wastes are simply disposed of along with regular household and ultimately end up on one of the regional municipal dumpsites, which all undergo open burning to reduce the volume and consequently lead to the formation of UPOPs.

Significant interventions are currently being supported in the area of MSWM by among others the World Bank, Government of the Maldives, IRENA, OPID and others (see Table 6 for a complete overview of baseline activities). Unfortunately the management, disposal and treatment of POPs wastes, POPs containing products/precursors and other hazardous wastes is lacking behind. According to the Waste Management Regulation, Hazardous waste shall not be burned under any circumstances and cannot be dumped on any area of the Maldives. However that is the current situation.

Considering there are a critical number of MSWM regional activities being implemented or planned, this provides an excellent baseline and opportunity to ensure the management of hazardous waste is also being tackled at the same time. This can be done to ensure that BEP/BAT approaches for hazardous waste management are being integrated into on-going and planned Regional Waste Management Systems and technical capacity of entities and authorities is built to manage, treatment and dispose of these types of wastes. Thus, the activities under this output will build on the existing or planned MSWM which have been established other co-financing sources.

The proposed project aims to initially work with the Regional Waste Management System in Vandaloo (World Bank supported Maldives Environmental Management Project (MEMP)) to incorporate aspects related to waste segregation of hazardous waste and interim safeguarding of hazardous waste streams. As a follow-up effort, and once the success of new practices for hazardous waste management (introduction of BEP and BAT) has been proven at

Vandaloo, replicate successful practices and experiences in newly (to be established) waste management infrastructures/systems which include the Huvandhu Atoll regional waste management Facility project (funded by GoM and IRENA), Addu Atoll regional waste management facility project (Funded by GoM and IRENA) and the Establishment of Regional Waste Management System in Zone 1 Islands, Haa Alifu, Haa Dhaalu and Shaviyani Atoll (funded by OFID). After this replication of practices it is assumed a tipping point has been reached and sufficient capacity among waste management entities will have been built to warrant that similar practices can be replicated elsewhere.

In detail, the project aims to support the following:

i) For each of the regional waste management systems to be supported by the project, a POPs and hazardous waste assessment would be conducted. This assessment would also review current approaches and recommend BEP/BAT interventions (including cost estimates) for their improved management. Data generated through these assessments would be incorporated in the national information system (see *Output 1.2.1*);

ii) With national stakeholders the project is expected to decide which priority wastes (e.g. POPs in products, E-waste, HCW, mercury in products) cause the most harm in terms of being UPOPs/POPs generators, environmental degradation, health impact and which cannot be treated/handled by the existing approaches/infrastructure;

iii) In coordination with *Output 1.1.1* and based on the outcomes of the priority setting exercise, guidelines will be developed for priority chemicals and wastes (covering their entire life-cycle from the point of import to the point of treatment/disposal) and import bans for priority products will be drafted/instituted;

iv) Using co-financing from WAMCO and financing leveraged through the new EPR/PPP system (see *Output 1.1.1*), a collection, segregation and transporting system for hazardous waste management will be established and integrated into each of the four (4) regional waste management systems; This activity will include the capacity building of waste management actors (WAMCO, government staff, waste haulage companies, waste handlers, etc.) in the sound management, interim storage and disposal of hazardous and toxic wastes;

v) Based on the outcomes of activity i) and the cost assessment, the project in coordination with *Output 2.2.2* will potentially introduce BEP/BAT approaches for hazardous waste management in case such approaches are deemed cost effective compared to export. BEP and BAT would be incorporated into existing Regional Waste Management Systems;

vi) In close coordination with *Outcome 2.1* (interim storage of PCBs), the project will explore the possibility of establishing a centralized interim storage facility, or opting for decentralized interim hazardous waste storage facilities (in conjunction with the Regional Waste Management Systems) for the interim storage of hazardous wastes which cannot be safely disposed/treated in the country;

vii) Finally, in coordination with *Output 2.1.2* (*Facilitate the environmentally sound management and disposal of 24 tonnes of phased-out PCB containing equipment and waste abroad) the project aims to demonstrate, on a one-time basis, the export of hazardous chemicals and wastes (including PCBs*)) the project will build the necessary capacity of chemicals related Convention Focal Points and their units (e.g. Stockholm, Basel, Minamata, Rotterdam) on clearance and PIC procedures and export of hazardous wastes for disposal abroad, so that gained experiences can be replicated in the future. This approach would also allow for the testing of the newly established EPR/PPP system (as part of *Output 1.1.1*), which is expected to cover the costs for disposal of non-POPs wastes.

The latter activity would be implemented using experience from a UNDP/GEF project "Sustainable management of POPs in Mauritius" (GEF ID: 3205), where the project disposed of 139 tonnes of DDT, 5 tonnes of PCB contaminated, waste and 300 m^3 of excavated POPs contaminated soil, and (using co-financing from waste holders) also dispose of non-POPs hazardous waste (making use of economies of scale – as total costs are mostly transportation related, not so much waste volume related).

2.2.2 Introduction of BEP and BAT to reduce POPs releases from waste management.

As was indicated by the NIP and NCP, the main pathway for the release of hazardous substances is the inadequate

disposal of hazardous wastes (including POPs wastes and POPs containing wastes), the open burning of municipal waste at dumpsites and the incineration of household waste in low technology incinerators at resorts.

Project *Output 2.2.2* (building upon project *Output 2.2.1*) aims to introduce BEP and BAT to reduce harmful POPs releases from unsound waste management practices. Following the cost assessment, the identification/recommendation of potential BEP/BAT interventions and the prioritisation of waste streams (all undertaken as part of Output 2.2.1), the project will support the following:

1. Introduce/incorporate BEP/BAT approaches for POPs, POPs containing wastes and hazardous wastes (in case such approaches are deemed cost effective as compared to export) into existing and planned Regional Waste Management Systems, which include the Regional Waste Management Facility in Vandhoo (World Bank), the Huvandhu Atoll Regional Waste Management Facility (funded by GoM and IRENA), Addu Atoll Regional Waste Management Facility (Funded by GoM and IRENA); and the Regional Waste Management System for Zone 1 Islands - Haa Alifu, Haa Dhaalu and Shaviyani Atoll (funded by OFID).

   Such interventions will include the introduction of BEP and BAT and training of waste operators and handlers, on how to reduce harmful releases from waste management centers and dumpsites, which will lead to a reduction in the open burning and accidental catching on fire of waste management centers and dumpsites.

2. Support tourism resorts (which are responsible for 73% of UPOPs releases, but only 25% of waste generation) to phase out the use of low technology incinerators, through waste reduction efforts, increased recycling/reuse, and integrating the management of their residual waste into existing or to be established Regional Waste Management Systems. Such interventions would fit well within the country's objective to make its tourism sector more sustainable.

COMPONENT 3. MONITORING AND LEARNING, ADAPTIVE FEEDBACK, OUTREACH AND EVALUATION

This project component's objective is, as reflected in associated Outcome 3.1 to capture and disseminate lessons-learned and best practices and make them available at national, regional and global levels to allow for the replication of project results; Conduct awareness raising to change attitudes towards the management and disposal of POPs, chemicals and wastes; and Ensure adequate monitoring and evaluation of project progress and results.

Outcome 3.1 Project results sustained and replicated and awareness raised.

3.1.1 Experiences, case studies, lessons learned and best practices collected, captured in knowledge products and disseminated at national and global level to support replication

Even though the Project Implementation Reviews (PIRs), the Mid-Term Review (MTR), and the Terminal Evaluation (TE) report contain sections on lessons-learned (see Output 3.1.3), seldomly are these lessons-learned consolidated and made easily available in an easy-to-share format.

Therefore, at least once a year the proposed project will take stock of the experiences and lessons-learned to that date (preferably coinciding with either the preparation of a Project Implementation Review (PIR), a Mid-Term Evaluation (MTE) or a Terminal Evaluation (TE)), to ensure that this valuable information remains available to interested parties beyond the project's closure.

The project will capture such experiences and lessons-learned in easy to update, sharable and understandable communication materials/publications, and will make such knowledge products available on-line and ensure they are disseminated at national, regional and global level events (e.g. chemicals related international meetings – COPs, ICCM, etc.) to support replication.

An important part of this project Output will be the exchange of experiences with countries in a similar situation through South-South Cooperation. For example, Mauritius and Comoros (which are also land scarce, climate sensitive and have limited opportunities for hazardous waste disposal in country because of financial unsustainability) will be embarking on UNDP supported POPs and hazardous waste interventions around the same

time. Such exchanges between the countries is critical, in particular because certain countries might be more advanced than others and can guide/demonstrate less advanced countries in improving practices in POPs and hazardous waste management.

3.1.2 Undertake awareness raising targeted at households, chemicals users, industries and decision makers

At the start of the project, a communication/awareness raising plan will be developed and subsequently implemented over the duration of the project. This communications/awareness raising plan will focus on changing behaviour and attitudes towards SMC and waste management, targeting politicians, decision makers, NGOs/CBOs, private sector entities managing wastes, waste pickers and recyclers, among many others.

Depending on the means of communication most appropriate, various avenues for information dissemination will be considered and taken up in the plan (e.g. meetings, skits/plays, radio broadcasting, posters, internet, etc.).

3.1.3 M&E and adaptive management applied in response to needs, Mid-Term Evaluation findings

Project-level monitoring and evaluation will be undertaken in compliance with standard UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy; furthermore additional and mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF M&E policy and GEF guidance materials.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management, and the exact role of project target groups and other stakeholders in project M&E activities, will be finalized during the Inception Workshop and will be detailed in the Inception Report.

Monitoring and Evaluation activities will at a minimum include: Inception Workshop (and Inception Report); Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP; Monitoring of indicators in project results framework; GEF Project Implementation Report (PIR); NIM Audit as per UNDP audit policies; Supervision missions; Oversight missions; GEF Secretariat learning missions/site visits; Independent Mid-term Review (MTR); GEF Tracking Tool; and Terminal Evaluation (TE).

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

As can be deducted from the section "*Associated Baseline Projects*", Table 6: *Overview of associated baseline projects*, and the Co-financing table (PART I, Table C), the project will be building on a significant number of on-going projects that are related to the management of POPs and MSWM. In the table below, the incremental and catalytic contribution of the alternative scenario in comparison with the baseline project has been summarized by project component.

Table 7. Comparison of baseline scenario with alternative scenario to be supported by GEF.

Baseline scenario	Alternative scenario to be supported by the GEF
The import and use of chemical substances, including POPs, is regulated by the Constitution of the Maldives, legislative acts and normative-methodical documents (see also Table 5). However according to the NIP (2016) analysis of existing legislation on POPs treatment shows the lack of a normative base for POPs treatment. One of the main challenges encountered in improving the management of POPs, chemicals and their wastes in the country is the fact that legislation regulating certain aspects of chemicals (such as Waste Management) and draft bills of regulations specific to chemicals (such as the Pesticides Bill and the Chemical Regulation) do exist in the country but are not yet adopted or implemented/enforced properly. The same goes for Article 5 of Law no 4/75 "*Substances prohibited to be brought into the Maldives*", for which the ministry has formulated the relevant regulation as stated in Article 5, however, it is yet to be implemented. The implementation of these regulatory aspects has been said to be delayed due to the unavailability of trained staff, lack of technical capacity, lack of financial resources, lack of high-level commitment and responsibility in comprehending the real impacts of such laws, the lack of a national chemicals database, the lack of a general baseline indicating the usage and disposal of these chemicals, a lack of analytical capacity, among other aspects. **Co-financing amount:** **Government of Maldives, Male City Waste Management Project - USD 3,246,753**	To address these challenges, **Component 1. Strengthening the regulatory and policy framework and institutional and technical capacity for the sound management and disposal of POPs, chemicals and wastes** will focus on achieving two (2) Outcomes: *Outcome 1.1: Further enhance the policy and regulatory framework for the sound management of chemicals*. *Outcome 1.2: Capacitate key public and private institutions and entities to operationalize the regulatory and policy framework for the LCM of chemicals and wastes*. The project will achieve this by: 1. Advancing the development and adoption of regulatory measures pertaining to POPs and SMC (*Output 1.1.1*) 2. Introduce economic instruments and incentives (EPR, PPP) to reduce POPs and other harmful releases (*Output 1.1.1*) 3. Establish a harmonized Central Chemical Management System (CCMS) (covering chemicals' import, use, storage, management, disposal, POPs and PRTR system) (*Output 1.2.1*) 4. Strengthen capacity at regulatory authorities for i) inspection, ii) the development and effective enforcement of standards/ guidelines related to collection, transportation, storage, use and disposal of POPs, hazardous chemicals and wastes (*Output 1.2.2 and Output 1.2.3*) GEF Grand requested: USD700,000
Since the ratification of the Stockholm Convention in 2006, there has been no specific action towards the environmentally sound management of POPs at national level. The 2016 NIP identifies PCB management as the most urgent priority of the country in terms of POPs management. According to the PCB inventory (undertaken as part of the NIP), potentially PCB containing equipment is present on the five (5) most populous islands of the Maldives. The inventory results indicated that there are 18 potentially PCB containing electrical units, made up of 15 electric transformers and 3 oil filled circuit breakers. The total volume of potentially PCB containing oil is 6,100 litres, made up of 5,819 litres of transformer oil and 282 litres used in oil filled circuit breakers. Although the PCB holders have the capacity and have committed co-financing to phase-out PCB containing/contaminated equipment, there are no solutions for the safe disposal of PCB oils and PCB	To improve the country's situation pertaining to PCBs, **Component 2. Establish systems for the sound collection, labeling, storage and disposal of hazardous chemicals and wastes,** *Outcome 2.1. 24 tonnes of PCB containing equipment and wastes identified, labeled, soundly managed and exported for disposal,* will have as objective the identification, labelling, export and disposal of PCB containing equipment and wastes. The project will achieve this by: 1. Inventorizing, analyzing, labelling and mapping PCBs containing equipment and waste present in the country (*Output 2.1.1*) 2. Facilitating the environmentally sound management and disposal of 24 tonnes of phased-out PCB containing equipment and waste abroad (*Output 2.1.2*) In order to support the country in addressing its challenges related to the collection, disposal/treatment of hazardous/chemical wastes and reduce POPs and PTS releases from unsound disposal and treatment practices of these types of wastes, the project will: 1. Develop the capacity of regional waste management facilities

containing equipment at national level. Another priority, as identified by the NIP and the NCP is (hazardous) waste disposal/storage infrastructure. There is a complete lack of infrastructure for both the collection and disposal of hazardous and chemical wastes. There is no designated area for disposing chemicals or hazardous waste and consequently no facility that fulfils environmental criteria for disposing such types of wastes or chemicals exists. Further linked to the unsound management of (hazardous) waste, is the release of UPOPs from the open burning and incineration of wastes (household as well as hazardous wastes), which are responsible for 25.6% and 73% of the country's UPOPs emissions respectively. It is for this reason that the reduction of UPOPs releases from waste burning/incineration is listed in the NIP as one of the country's main POPs priority. **Co-financing amount:** **PCB holders - USD 403,018** **WAMCO – USD10,560,000 (USD2,640,000/yr * 4yrs)**	and waste management actors for the sound management, interim storage and disposal of hazardous and toxic wastes. 2. Introduction of BEP and BAT to reduce POPs releases from waste management: i) Introduce/incorporate BEP/BAT approaches for POPs, POPs containing wastes and hazardous wastes into existing and planned Regional Waste Management Systems. Such interventions will include the introduction of BEP and BAT and training of waste operators and handlers, in how to reduce harmful releases from waste management centers and dumpsites, which will lead to a reduction in the open burning and accidental catching on fire of waste management centers and dumpsites. ii) Support tourism resorts (which are responsible for 73% of UPOPs releases, but only 25% of waste generation) to phase out the use of low technology incinerators, through waste reduction efforts, increased recycling/reuse, and integrating the management of their residual waste into existing or to be established Regional Waste Management Systems. Such interventions would fit well within the country's objective to make its tourism sector more sustainable. **GEF Grant requested: USD 2,600,000**

5) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The Global Environmental Benefits (GEB) attributed to this project are associated with a reduction in the potential release of POPs, which include for this project PCBs, UPOPs generated from incineration and open burning, POPs contained in products (such as PBDEs and PFOS).

As a co-benefit, the project will also result in a reduction of Green House Gases (GHG, e.g. CO_2, CH_4, among others). resulting from improved overall waste management practices and the reduced use of low technology waste incineration and open burning leading to reduction in GHG. Uncontrolled disposal of solid waste (foreshore dumping and open burning) currently accounts for 15% of the GHG emissions in Maldives. Proper solid waste management will help the country achieve its target of carbon neutrality by 2020.

Estimating the actual quantities of POPs (PCBs, UPOPs, PBDEs) and net GHG reductions are difficult to estimate at this stage. Obtaining such estimates, would be the focus and objective of work to be undertaken as part of the PPG stage.

However, the following provides a very approximate estimate of potential annual reductions of key critcal chemical releases during the project implementation period:

- Ensure the environmentally safe management and disposal of 24 tonnes of PCB containing equipment.
- Release of approximately 15 g-TEQ PCDD/F prevented (10% of resort and waste management center releases).
- Indirect effect: release of commercial PBDE and other brominated flame retardants prevented.
- Indirect effect: release of GHGs prevented – to be determined during the PPG.

6) Innovation, sustainability and potential for scaling up

The Maldives encounters a serious lack of capacity for the sound management of POPs, hazardous chemicals and hazardous wastes. This challenge requires urgent and immediate solutions, as not only it presents immediate and long-term challenges to the environment and human health, but is also critical to the economic wellbeing of the population, which for a large part (~ 30% GDP) depends on the tourism sector, a sector which expects the environment to be pristine. Pollution by chemicals and waste would not only deteriorate the environment but also jeopardize the country's economy. As the country also faces challenges in terms of rising sea levels, chemicals and waste management has to be addressed in a sustainable manner that prevents POPs and hazardous chemicals and wastes from ultimately entering the Indian Ocean.

Innovation: The project is innovative from several perspectives: i) Considering the country is extremely land scarce, very low lying (an average height above sea level of 1.8 meters) consists of 1,190 coral islands in 26 atolls spreading over an area of about 750 km on a north-south axis and 120 km on an east-west axis, chemicals and waste management and the transportation of chemicals and waste from island to island is costly and complicated. ii) The issue of PCBs management has never been addressed before in the Maldives.; iii) The project will introduce/incorporate BEP/BAT approaches for POPs, POPs containing wastes and hazardous wastes (in case such approaches are deemed cost effective compared to export) into existing and planned Regional Waste Management Systems. Currently no system for hazardous waste or POPs exists so this is considered innovative within the country context.

Sustainability: The country does not have an existing EPR/PPP system, therefore the project will introduce economic instruments and incentives as EPR/PPP that will be applied towards long-term financial sustainability to cover chemicals and waste management costs which lead to a reduction in POPs and other harmful releases. Because the country faces serious threats in terms of climate change and rising sea levels, there is an urgency to remove POPs from the country as otherwise there is a high risk that ultimately these POPs will be released to the global environment. Removing POPs sooner rather than later, and introducing sound practices for chemicals and waste management, will prevent POPs and waste from entering the global environment in the long term.

Potential for Scaling up: The proposed project aims to initially work with the Regional Waste Management System in Vandaloo (World Bank supported Maldives Environmental Management Project (MEMP)) to incorporate aspects related to waste segregation of hazardous waste and interim safeguarding of hazardous waste streams. As a follow-up effort, and once the success of new practices for hazardous waste management (introduction of BEP and BAT) has been proven at Vandaloo, the project will replicate successful practices and experiences in newly (to be established) waste management infrastructures/systems which include the Huvandhu Atoll regional waste management Facility project (funded by GoM and IRENA), Addu Atoll regional waste management facility project (Funded by GoM and IRENA) and the Establishment of Regional Waste Management System in Zone 1 Islands, Haa Alifu, Haa Dhaalu and Shaviyani Atoll (funded by OFID). After this replication of practices it is assumed a tipping point has been reached and sufficient capacity among waste management entities will have been built to warrant that similar practices can be replicated elsewhere. The financing for replication and continued management of POPs and hazardous chemicals and wastes, will be drawn from the EPR/PPP system established by the project.

2. Stakeholders. Will project design include the participation of relevant stakeholders from civil society organizations (yes ☒ /no☐) and indigenous peoples (yes ☐ /no☐)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

During PIF preparation a wide range of stakeholders were consulted. Various meetings were organized to discuss the project outcomes and outputs. Specific discussions with the Ministry of Defense and National Security were carried out regarding the import of chemicals and the various means of chemicals and hazardous wastes disposal. Discussions on existing guidelines were held with the Ministry of Health and Agriculture. The Environmental Protection Agency, the regulatory authority and the Waste Management Department which has the mandate to manage the disposal of wastes in the country, have been involved from the very beginning. The regulatory authority will support the implementation of the environmental standards.

The table below identifies the principle institutional, industry, academic, international and civil society stakeholders that are expected to be involved in the project's development during the PPG stage.

Table 8. Responsibilities of different ministries, agencies and other governmental institutions - Description of Authorities and Mandates

Stakeholder Organization	Role
Institutional Stakeholders	
Ministry of Defence and National Security (MDNS)	The MDNS regulates, amongst others, the import of dangerous chemicals into the country. Article 5 of the Act No. 4/75 states that all dangerous chemicals (except for fireworks), acids, and other poisonous items produced using these chemicals can only be imported into the country with written permission from the ministry and in accordance with such rules and regulations set out by the ministry. MDNS is also obliged by the Chemical Weapons Convention to monitor/control the flow of chemicals that are categorized as chemical weapons.
Maldives National Defence Force (MNDF)	As per Article 11 of law 4/75, the final disposal of chemicals is the responsibility of the Ministry of Defence and National Security. The Ministry has assigned the Maldives National Defence Force (MNDF) to carry out this function on its behalf. At the point of customs clearance, the Maldives Customs Service and the Maldives National Defence Force will check/verify if chemicals have been issued a permit by the Ministry of Defence and National Security, before chemical imports are cleared/granted.
Maldives Customs Service (MCS)	The MCS ensures that the regulations regarding the import of chemicals into the country are met and fulfilled. They verify that the chemicals imported into the country are authorized for importation, and withholds any chemicals without such authorization, and promptly discards it if required.
Ministry of Environment and Energy (MEE) ***Incl. Waste Management and Pollution Control Department (WMPCD)***	MEE is responsible for the management and guidance of control of environmental hazards caused by chemicals such as HCFCs and HCFC blends by formulating a guideline to reduce and limit the import, use and sales and phasing it out completely by 2020.
Environmental Protection Agency (EPA)	EPA is the regulatory body assigned to implement the laws and regulations pertaining to the environment sector. Among its many responsibilities, the EPA: i) regulates waste management (incl. hazardous waste) and pollution, is responsible for the implementation of waste and pollution related regulations, and sets standards and guidelines for pollution prevention and waste management (e.g. each island is required to have a waste management plan); ii) is responsible for the monitoring of air quality and setting up air monitoring mechanisms; iii) reviews and provides clearance of Environmental Impact Assessments as per the Environmental Impact Assessment Regulations, among else.
Ministry of Health (MoH)	The ministry is responsible for establishing policies for protection of public health. The following authorities are formed under MoH to work at the frontline to implement the Public Health Act, Law No. 7/2012.
Maldives Food and Drug Authority (MFDA)	MFDA is the competent authority for certifying the import and export items of food and drugs.
Health Protection Agency (HPA)	HPA is formed under the Public Health Act Law No. 7/2012 to establish policies for protection of public health and identify the parties responsible for its protection, to define how public health protection policies will be implemented and to ensure basic human rights under the Maldives' constitution to Maldivians and people residing in Maldives to necessary extents to protect public health.
National Drug Agency (NDA)	NDA is the regulatory body assigned to implement the policies related to the law no. 17/2010, which is the law on drugs.
Ministry of Fisheries and Agriculture (MFA)	▪ Developing standards and regulations related to the import and handling of pesticides and fertilizers. ▪ Updating data regarding pesticides and chemical fertilizers (this will be facilitated and systematized by the proposed project activity "National Chemicals Management Database Development"). ▪ Issuing licenses for the import of pesticides and chemical fertilizers.

Malé' City Council	Provides technical as well as policy level inputs during the project's development- as well as implementation- stage.
Maldives Transport Authority	Provides technical and policy inputs and information during the planning and design of the Project Document.
National Bureau of Statistics	Provides statistical data based on the selected project areas.
Local Government Authorities (e.g. Atoll Council, Island Council)	Provides technical inputs during the planning and design of the project document as well as during the project's implementation. As per the Decentralization Act (7/2010), Atoll Councils, Island Councils and City Councils have the responsibility to plan and implement projects related to development of the island.
National Chemical Management Committee (NCMC)	Made up of Ministry of Environment and Energy; Maldives Police Service; Maldives National Defence Force; Maldives Customs Service; Maldives National University; Transport Authority; Ministry of Defence and National security; Health Protection Agency; Environmental Protection Agency; FENAKA Corporation Ltd; Ministry of Fisheries and Agriculture; Maldives Food and Drug Authority; Malé' City Council
Principle Industrial/Private Sector Stakeholders	
WAMCO	The Waste Management Corporation (WAMCO) - revived in September 2015 - assumes responsibilities for waste management across the Maldives. WAMCO's objectives are to: ▪ Provide a practical and environmentally responsible and sustainable solid waste collection service for Maldivian communities. ▪ Operate a cost effective waste transportation system between designated waste collection points and waste processing/ disposal facilities. ▪ Promote and create awareness on best practices in waste management that can be adapted in Maldivian communities. ▪ Assess and develop environmentally accountable and economically viable waste recycling, processing, treatment and disposal systems.
PCB Holders/Utility Providers (e.g. STELCO; FENAKA Corporation Ltd; island councils; private parties)	Own and are responsible for the sound management, maintenance and phase-out of PCB containing electrical equipment. As of 2012, there were 189 power houses throughout the nation, operated by different utility providers. By the end of 2013, STELCO operated 28 power stations on 26 islands while FENAKA operated 146 power stations on 145 islands. There were 16 power stations operated on 16 islands by island councils and 3 power stations operated on 2 islands by private parties.
Maldives Association of Construction Industry (MACI)	The Maldives Association of Construction Industry is the standard bearer of the second largest industry in the Maldives. One of the primary roles of MACI is to look after the interests of the contractors, laborers, employers, employees, technical and support staff plus the collaborating commercial and market interests of the construction industry, and to generate public awareness for these interests both within the government and among the general public.
Academic Institutions	
Maldives National University (MNU)	The first government tertiary institution in the Maldives provides an undergraduate program in Environmental Management, which was initiated and funded by the MEMP World Bank/MoEE project. This program offers studies in environmental chemistry and waste management including pollution prevention.
Civil Society / Non-Governmental Organizations	
Blue peace (representing CSOs) /Save the beach	Active NGOs can play a vital role to increase awareness on waste management and chemicals related issues among the general public. They can also conduct environmental education and provide training related to environmental protection.
The Women's Development Committee (WDC)	Each inhabited island has a Women Development Committee. These committees can provide inputs to ensure the engagement and participation of women throughout the project's development as well as its implementation.

There is the intention to have active NGOs with a direct interest in POPs and chemical waste management at the local and national level to be engaged during the PPG stage in preparation and assume an active facilitation role in public and community awareness and engagement activities during implementation.

3. Gender Equality and Women's Empowerment. Are issues on gender equality and women's empowerment taken

into account? (yes ☒ /no☐). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

In daily life, men, women, and children are exposed to different kinds of chemicals in varying concentrations. Biological factors — notably size and physiological differences between women and men and between adults and children — influence susceptibility to health damage from exposure to toxic chemicals. Social factors, primarily gender-determined occupational roles, also have an impact on the level and frequency of exposure to toxic chemicals, the types of chemicals encountered, and the resulting impacts on human health.

The PPG phase of the project will assess the gender aspects of the proposed project, ensure the participation, representation and buy-in of vulnerable worker and community populations in the project's formulation and mainstream gender into all activities to be undertaken as part of the full-size project as per the "UNDP Technical Guide on Integrating Sound Management of Chemicals" and the UNDP guidance note on "The why and how of mainstreaming gender in chemicals management".

Depending on the sector in which particular project activities take place, it might be either women, men or children most at risk from exposure to POPs, PTS and hazardous wastes.

The utility sector, for example, employs mainly men for the running and maintenance of power houses and electrical equipment (potentially contaminated with PCBs). Therefore it's mostly men who are directly exposed to PCBs during maintenance activities. However, when such equipment is disposed of and PCB oil sold separately, a different demographic of people are being exposed, for example scrap metal dealers and fishing communities who use the oil to impregnate fishing vessels are mostly men.

With respect to chemicals and waste management, it might be mostly men who are engaged at industry level, waste management center management level and waste haulage entity level that are most exposed to chemicals and hazardous wastes, but women may also be exposed to such hazardous components as they are often the ones who predominantly assume responsibilities of managing wastes at household/community level and transporting it to the dumpsite.

Compared to adults, children are considered more vulnerable to the effects of environmental pollutants. Exposure to POPs during early life stages may result in effects not only in utero and childhood but also at later stages. It is for this reason that particular emphasis during the project's implementation will be placed on the potential risks of POPs and hazardous chemicals and wastes to women of a child bearing age and children (in utero).

The above examples indicated that each and every chemical of concern in a different sector and settings will have different gender consequences. As such the project will assess in more detail the gender aspects of the proposed project and subsequently design and tailor capacity building and training programmes to the various project beneficiaries, population groups at risk and project stakeholders to enable the project to employ gender sensitive approaches to reduce exposure risks to men, women, children and their families.

4 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 rating**	**Risk mitigation strategy**
Climate Risk (short term). The Maldives is especially vulnerable to climate-related hazards such as extreme rainfalls, storm surges, swell waves, droughts, and damaging winds. From a solid waste perspective, the primary climate risk to waste management facilities and dumpsites appears to be related to effects of severe storms, including sea surges that lead to flooding, damaging winds, which can take out the waste to sea.	High	Prior to the selection of project sites (interim PCB and hazardous waste storage sites/facilities), the project will conduct environmental risk assessments, that will assess potential risks that might jeopardize the safe interim storage of hazardous wastes and could result in the immediate pollution of coastal waters. Any supported interim storage facilities/sites will be protected against severe climatic conditions, which is justified to prevent long-term aesthetic effects on the tourism sector due to flood water washing solid waste into the sea, and hazardous chemicals degrading coral reefs.

Risk	Risk rating	Risk mitigation strategy
Climate Risk (long term) Other causes of flooding such as sea level rise are longer-term in nature and have broader implications to the Maldives.	High	It is for this reason that there is such urgency in starting to address the sound management of POPs, hazardous chemicals and wastes in the Maldives. Compared to land-rich countries where particular types of wastes can be stored for a longer period of time, in relatively risk safe environments, away from water sources, communities, etc., the situation is different in the Maldives. There is an extreme urgency to remove POPs from the country as otherwise it is likely that ultimately these sources will be all released to the global environment.
Government policy respecting commitment to a producer pay based system to finance a viable self-financing system of environmentally sound hazardous waste management is not sustained for the project life either through failure to implement a suitable financial mechanism or due to the inadequate allocation of revenues from it to hazardous waste management.	Medium	At present, no Extended Producer Responsibility (EPR) or PPP financial mechanism or legal framework to support its establishment exists in the Maldives. Therefore, the financial mechanism being pursued is untested and based on experiences from other countries. The project specifically targets ensuring that administrative capacity and commitment to the establishment of viable revenue generation and an allocation mechanism as a prerequisite to supporting this component of the project.
New regulatory instruments (at national and/or provincial level) cannot be adopted within the project's timeframe due to delays and/or the extended length of the respective law making processes.	Medium	The selection of the proper law-making process (i.e., decrees, guidance, standards, etc. embedded in existing regulations); continuous support and oversight provided by the project team; the establishment of a legal working group made-up of all relevant stakeholders; and wider stakeholder consultations, will enable the coordinated and speedy development, and review of an improved regulatory framework on chemicals and waste management in-line with the relevant chemicals related Multi-lateral Environmental Agreements (MEAs).
Formal waste sector service providers do not respond to market opportunities with appropriate capacity investment.	Low	While the formal waste management sector remains small, it is assumed that if a viable EPR or PPP system is established, this can be assumed to grow, with facilitation by project investment and technology acquisition support.
Public awareness and human resource capacity is inadequate to support the diversion of POPs and hazardous wastes and its presentation for environmentally sound management.	Medium	This will be mitigated by the inclusion of robust awareness programs targeting the general public and operational stakeholders, as well as training provisions across all main stakeholder groups in the promotion of and creation of technical capacity for the management of POPs and hazardous wastes.
Geographic constraints due to the dispersed nature of islands in the country may cause high logistical and transportation costs and increases the changes of spillage during transport. Seasonal exposure to rough seas could prevent inter-island transport.	Low	To address this, bulk transport methods will be utilized to reduce transport costs. Rough seas will be avoided through proper planning. To avoid spillage/accidents during transport and interim storage, training will be provided to all stakeholders involved in the management of chemicals and hazardous wastes.
Average risk	**Medium**	

5. Coordination. Outline the coordination with other relevant GEF-financed and other initiatives.

The project expects to build on or collaborate with the following international and national initiatives and projects:

International Level:

- **GEF/UNDP Environmentally Sound Management and Disposal of PCBs** (including but not limited to: Argentina, Brazil, Colombia, Costa Rica, Ecuador, Ghana, Jordan, Kazakhstan, Kyrgyz Republic, Latvia, Mexico, Montenegro, Morocco, Nigeria, Rwanda, Uruguay)
- **GEF/UNDP**: *Sustainable Management of POPs in Mauritius (GEF ID 3205: 902,250 US$; Co-financing: 930,000 US$)*

National Level:

- **GEF/UNIDO***: Enabling Activities to Facilitate Early Action on the Implementation of the Stockholm Convention on POPs (GEF ID5234: 430,000 US$; Co-financing: 280,000 US$)*
- **SAICM QSP TF/UNITAR:** *Strengthening Capacities for National SAICM Implementation in Maldives* (SAICM QSP TF: 233,744 US$)
- **GoM:** *Malé City Waste management project, Jan. 2016 – July 2017* (3.25 million US$)
- **World Bank**: *Maldives Environmental Management Project (MEMP)*, 10 June 2008 – 30 June 2016 (18.9 million US$)
- **GoM/IRENA:** *Huvandhu Atoll Regional Waste Management Facility Project*, Jan. 2016 – Dec. 2017 (5 million US$ GoM + 3 million IRENA)
- **GoM/IRENA:** *Addu Atoll Regional Waste Management Facility Project*, Jan. 2016 – Dec. 2017 (5 million US$ GoM + 3 million IRENA)
- **World Bank**: *Maldives Ari Atoll Solid Waste Management Project*, 21 Nov. 2012 – 30 Nov. 2014 (1.33 million US$)
- **GEF/UNDP***: Increasing Climate Change Resilience of Maldives through Adaptation in the Tourism Sector, 2011 – 2014 (GEF Grant: 1,650,438 US$; Co-financing: 1,650,438 US$)*
- **MLF/UNDP:** *HCFC phase-out management plan* (420,000 US$)
- **MLF/UNDP:** *Demonstration project for low-global warming potential alternatives for HCFC phase-out in refrigeration applications in fishing industry* (141,000 US$)

6. Consistency with National Priorities. Is the project consistent with the National strategies and plans or reports and assessements under relevant conventions? (yes ☒ /no☐). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

With the financial support of the GEF and technical assistance provided by UNIDO, the Government of the Maldives implemented over the period 2013 – 2016 the project "*Enabling Activities to Facilitate Early Action on the Implementation of the Stockholm Convention on POPs*" (GEF ID 5234: 430,000 US$; co-financing: 280,000 US$).

The development of the country's first NIP started with various preliminary inventories being conducted over the period 2013-2015 through which information was obtained regarding POPs import, use, release and their management. A draft version of the NIP as well as final inventory reports were available at the time of the drafting of this proposal, and were used as its basis. The NIP is expected to be finalized by July 2016 and submitted to the Stockholm Secretariat in August 2016.

Although the NIP has not been finalized, the priorities which were taken up in the draft NIP, have been listed in Table 9 below. The two highest ranking national priorities are

1. *The implementation of measures to strengthen the institutional and regulatory framework* (including: Developing legislation for chemicals management; Strengthening institutional capacity; Improving data collection and management systems; and, Conducting research on the effects of POPs).

2. *Developing an action plan to eliminate PCB-containing equipment and its wastes by 2025* (including Identifying, labeling and mapping where PCBs and equipment containing PCBs are located in the country; Putting in place labelling mechanism for all PCB containing equipment; Establishing adequate storage facilities for replaced equipment containing PCBs; Formulating guidelines for disposal of equipment containing PCBs; and Disposing safely of equipment containing PCBs). According to a preliminary PCB

assessment carried out in support of the NIP's preparation, the Maldives counts 18 pieces of electrical equipment (~ 24 tonnes) potentially containing PCBs located on five of the most populated islands.

In addition, the NIP also lists national priorities for proposals for the development and capacity building to achieve the sound management of POPs. These are:

1. Reducing the incineration and open burning of wastes (including medical and hazardous wastes), which is the source of 98.6% of UPOPs releases in the country – totaling 151 g-TEQ/yr).
2. Reducing UPOPs emissions from vehicles, the second largest UPOPs release sources, responsible for 1.2% of UPOPs releases.
3. Awareness creation through the development of education curricula and targeted awareness campaigns.
4. Carrying out studies on the impacts of POPs on human health.
5. Establishing a standard chemicals labelling system in multiple languages.

Table 9. Priorities for the Management of POPs in the Maldives (NIP, 2016)

Priorities for the management of POPs Maldives	
I.	*(High priority)* **Institutional and regulatory strengthening measures** (*Develop legislation for chemicals management*: Set mechanism to address POPs within the chemicals legislation or regulation; Revise and harmonise existing mandates of all relevant institutions to incorporate and identify their responsibility in chemicals management. *Strengthen institutional capacity*: Capacity building of custom officers on inspection and identification procedures; Capacity building of staff handling chemicals for use, storage and disposal; Provide POPs chemical testing equipment for relevant authorities; Formulate a chemicals unit within the relevant institution. *Improve data collection and management systems:* Establish and update database of POPs in the country; Establish HS codes for all POPs and POPs containing equipment. *Conduct research on effects of POPs on health*.
II.	*(High priority)* **Use, identification, labelling, removal, storage and disposal of PCBs and equipment containing PCBs**. Develop an action plan to eliminate PCB-containing equipment and its wastes by 2025 (Identify, label and (map) where PCBs and equipment containing PCBs are located in the country; Labelling mechanism for all PCB containing equipment in place; Establish adequate storage facilities for the replaced equipment containing PCBs; Formulate guidelines for disposal of equipment containing PCBs; and, Safe disposal of equipment containing PCBs.
III.	*(Low priority)* **Production, import and export, use stockpile and wastes of hexaBDE, tetraBDE, pentaBDE and HBB**: Develop an information sharing platform; Improve awareness on EEE and WEEE.
IV.	**Production, import, and export, use stockpiles and wastes of PFOS, its salts and PFOSF.** Action plan for safe disposal and monitoring of PFOS containing firefighting foam.
V.	**Action Plan to reduce releases from unintentional production**. Develop an action plan to reduce releases from UPOPS (Conduct baseline study to identify hotspots, especially for open burning of waste; Set up segregation and recycling mechanism; Establish incinerating facilities; and Establish monitoring system for UPOPs emissions and releases).
VI.	**Measures to reduce releases from stockpiles, articles and wastes (Article 6)**. Develop an action plan to identify, manage and reduce releases from stockpiles, articles and wastes.
VII.	**Facilitating or undertaking information exchange and stakeholder involvement & Public awareness, information and education (Article 10)**. Establish mechanism for information exchange between Parties to Convention; Enhance awareness mechanisms.
VIII.	**Effective evaluation**. Ensure effective compliance mechanism.
IX.	**Reporting**. Establish a data sharing electronic mechanism.
X.	**Research, development and monitoring**. Improving sampling and analysis of POPs in Labs.
XI.	**Technical and financial assistance.** Strengthen financial and technical capacity.

It should be noted, that with the exception of a few, the level (high, medium, low) of the priorities has not yet been set. The proposed project anticipates to address nine (9) of the 11 priorities taken up in the NIP, these priorities are I, II, V, VI, VII, VIII, IX, X and XI.

In addition, the proposed project is consistent with Goal no. 6 of the Maldives National Strategy for Sustainable Development (2010-2020)that states the importance of ensuring that chemicals, including pesticides, are handled and used in ways that do not pose significant threats to human health and the environment (NIP, 2016).

7. 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.

Relevant international projects and initiatives that the proposed project is expected to learn and benefit from are listed in section 5. In particular, the project expects to benefit greatly from GEF/UNDP supported projects in the area of *ESM and Disposal of PCBs* in various countries, as well as the GEF/UNDP supported project *Sustainable Management of POPs in Mauritius* (GEF ID: 3205). At national level the project expects to learn from the World Bank support GoM MEMP project which to date appears to be the most comprehensive integrated waste management project implemented in the Maldives (as well as GoM financial Waste programmes that will be launched soon and will be building upon the MEMP project as well). Currently, the MEMP project is in progress to develop a lesson learnt report which is expected to be published in November 2016. The document will act as a tool to learn the challenges and opportunities with regard to establish integrated regional waste management systems, which this proposed project will utilize during the PPG phase and FSP implementation. In Addition, during the PPG and project implementation, where feasible, the project teams of MEMP and other waste management projects will be invited in the stakeholders' meetings and continue share the experience and knowledge from their projects.

The project will adopt the following knowledge management approaches:

- **Development of Knowledge Management Action Plan**: The project team, at the inception stage of the project, will develop a Knowledge Management Action Plan which will lay out the approaches for information collection and documenting project experiences and lessons-learned on a regular basis for each component and project outcome.
- **Preparation of annual lessons-learned reports/publications**: At least once a year the project will take stock of the experiences and lessons-learned to that date (preferably coinciding with either the preparation of a Project Implementation Review (PIR), a Mid-Term Evaluation (MTE) or a Terminal Evaluation (TE)), to ensure that later on this valuable information is not lost. The project will capture such experiences and lessons-learned in easy to update, sharable and understandable communication materials/publications.
- **Preparation of case studies**: For each of the project partners the project will support (e.g. PCB holders, Waste management companies, etc.) a case study report will be prepared to highlight achievements, lessons-learned and the approach/strategy used. The gender dimension will be particularly emphasized in these case studies.
- **Preparation and publication of guidelines/tools**: At a minimum the project will ensure that all the guidance materials developed for and used during project implementation will be published and made available through a publicly accessible website.
- **End-of-project publication**: At the end of the project, a publication will be produced that summarizes the project's achievements, lessons-learned, challenges, experiences, photos, etc.
- **Project websites**: Materials will be produced in Maldivian and English. Such materials will be posted on relevant project websites and those of project stakeholders that will remain on-line and available even after the project ends.
- **Experience sharing at international events**: Experiences resulting from the project implementation will be shared at international conferences and meetings, through side-events and presentation where feasible and when funding allows.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT[16] OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

[16] For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

(Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Miruza Mohamed	Director	**MINISTRY OF ENVIRONMENT AND ENERGY**	**06/29/2016**

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies[17] and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	**Signature**	**Date** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email**
Ms. Adriana Dinu Executive Coordinator UNDP - Global Environmental Finance		07/13/2016	Mr. Jacques Van Engel Director MPU/Chemicals	+1 (212) 906-5782	jacques.van.engel@undp.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required **GEF Project Agency Certification of Ceiling Information Template** to be attached as an annex to the PIF.

[17] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF