KINGDOM OF CAMBODIA

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Supported by : Global Environment Facility (GEF) and the United Nations Environment Programme (U N E P)

MOE UNEP GEF

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Updating of the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants

Has been endorsed during its final workshop held on 7th October 2015

PREPARED BY: Project Coordination Unit to Review and Update National Implementation Plan for the Stockholm Convention on POPs in Cambodia

2013 _ 2015

Ministry of Environment

Phnom Penh, December 2015

KINGDOM OF CAMBODIA
Nation – Religion - King

Updating of the National Implementation Plan for the Stockholm Convention with Its Associated Action Plans for all 22 POPs

Has been endorsed during its final workshop held on 7th October 2015

Prepared by:
Project Coordination Unit,
Enabling Activities to Review and Update of the National Implementation Plan for the Stockholm Convention on POPs

Supported by: UNEP/GEF

Ministry of Environment
Phnom Penh, December 2015

THIS DOCUMENT was prepared as part of the project on reviewing and updating of the National Implementation Plan (NIP) for the Stockholm Convention on Persistent Organic Pollutants (POPs) in the Kingdom of Cambodia, Ministry of Environment. The project was technically supported by United Nations Environment Program (UNEP) and financed by the Global Environment Facility (GEF) with in-kind contributions from the Royal Government of Cambodia. This report has been developed and published in Khmer and English by the NIP update project of the Ministry of Environment (MOE), the Royal Government of Cambodia (RGC).

This National Implementation Plan was updated and formulated based on the UNEP's guidance documents, POPs inventory reports, assessment report of POPs impact on human health and the environment, action plan and gap analysis on POPs management in Cambodia. This National Implementation Plan was also went through the comprehensive review resulted from the implementation of initial POPs, recommendation of POPs inventory reports from different sectors and undertaken by officers of Ministry of Agriculture, Forestry and Fisheries, Ministry of Environment, Ministry of Industry and Handicraft, Ministry of Public Works and Transport, and Ministry of Interior under the supervision provided by the Project Coordination Unit (PCU). This updating of National Implementation Plan was developed by the national consultant, **Mr. Kan Vibol** and reviewed and commented by international expert**, Dr. Reiner Arndt**, UNEP, several national stakeholders, and the National Coordination Committee (NCC).

The National Implementation Plan for the Stockholm Convention on POPs is a critical political and international commitment of the Royal Government of Cambodia responded to the Stockholm Convention, which are remaining Cambodia legislative framework, overview of the implementation of the initial POPs, Cambodia profile, priority setting for POPs issues, national objectives setting for both initial POPs and new listed POPs, action plan, proposed activities and priority project profiles for GEF funding to make sure that NIP development is smooth working through and responding to the real situation in Cambodia and to achieve reduction and where possible the elimination of 12 initial POPs and 10 new POPs.

PROJECT COORDINATION UNIT FOR NIP UPDATE FORMULATION

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FOREWORD

Cambodia prepared the first National Implementation Plan (NIP) on persistent Organic Pollutant (POPs) and it was approved by the Royal Government of Cambodia in 2006. Under the requirement of the Stockholm Convention, signatory countries need to regularly update their National Implementation Plan which cover the 22 POPs chemicals and Cambodia has fullfilled its obligation in updating the NIP which was endorsed during the final workshop held on 7 October 2015 and which participated by all national relevant stakeholders.

In the spirit to protect people's health, environment and in order to reduce and eliminate such POPs in Cambodia, we have proposed priority actions for the 5 years implementation period from 2016 to 2020.

This Updating of National Implementation Plan is a master plan fostering for safe and sound managment of POPs in Cambodia, which will be implementated by POPs use including POPs pesticides, PCB, POP PBDEs in transportation and in the e-waste sector, PFOS in firefighting sector and unintentionally produced POPs (dioxins and furans). Base on Cambodia's legal frameworks, policies, and provisions, this upadting of National Implementation Plan will improve the enviromental quality and human health from impact of POPs.

As the lead Ministry and on behalf of myself, I would like to express my gratitudeto the Global Environment Facility (GEF) and the United Nations Environmental Programme (UNEP) for both their technical and financial assistance provided in updating National Implementation Plan. Special thanks to the Ministry of Agriculture Forestry and Fisheries (MAFF), the Ministry of Public Works and Transport (MPWT), the Ministry of Mine and Energy (MME), the General Commissariat of National Police, Ministry of Interior (MOI) for their strong support by the provision of endorsement letters. I would also like to thank other institutions, academies, civil society , the Project Coordination Unit (PCU) of the Ministry of Environment and national and international consultants for their efforts and contribute their valuable comments and time contributed for development of this significant document.

In this regard, I would like to declare for strong support for the process to update National Implementation Plan and I hope this document will be implemented effectively for environmental sustainability, enhancing public health and contributing toward poverty reduction.

Phnom Penh, Date 30 / Dec / 2015

SAY SAMAL
Minister of Environment

ACKOWLEDGEMENT MESSAGE

of H.E. Heng Nareth, Director General, General Directorate of Environmental Protection

This Updating of National Implementation Plan (NIP) for the Stockholm Convention on Persistent Organic Pollutants (POPs) in Cambodia was prepared through the collaborative effort by several stakeholders and the advices provided by international and national experts.

In this occasion, I would like to express my gratitude to Global Environment Facility (GEF) and United Nations Environment Program (UNEP) that provided financial and technical support for the execution of the enabling activities for the development of updating of the National Implementation Plan for the Stockholm Convention on POPs in Cambodia. I would also thank relevant ministries, research institutions, academies, civil society, private sector, the National Coordinating Committee (NCC), and national and international experts for ideas, comments, information and data and recommendations to updating of this NIP.

My appreciation and acknowledgement to **Mr. Kan Vibol**, national consultant and **Dr. Reiner Arndt**, international expert, UNEP for the formulation of this updating of the NIP document.

Together, I would like to express my special profound thanks to **H.E. Say Samal**, Minister of Environment for his valuable support and highly considering public health and the environment and encourage for the updating of NIP development process in responding to Cambodia's obligation under the implementation of the Stockholm Convention.

Finally, I also thank the project coordination team for their efforts in the preparation of this National Implementation Plan for the Stockholm Convention with fruitful results.

Phnom Penh, Date 25th December, 2015

Heng Nareth
Director General,
General Directorate of Environmental Protection, MOE

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ABBREVIATIONS AND ACRONYM

3R	Reduce Reuse Recycle
BAT	Best Available Techniques
BEP	Best Environmental Practices
CRT	Cathode Ray Tube
CDC	Cambodia Development Council
CEDAC	Centre d'Etudeet de Développement Agricole Cambodgien
COMPED	Cambodian Education and Waste Management Organization
CSARO	Community Sanitation and Recycling Program
DDT	Dichlorodiphenyltrichloroethane
EEE	Electrical and Electronic Equipment
EDC	Electricite Du Cambodge
GEF	Global Environment Facility
HCFC	Hydro Chlorofluorocarbon
CKCC	Cambodia Korean Cooperation Center
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEF	Ministry of Economy and Finance
MIME	Ministry of Industry, Mines and Energy
MOC	Ministry of Commerce
MOE	Ministry of Environment
MOI	Ministry of Interior
MIH	Ministry of Industry and Handicrafts
MOH	Ministry of Health
MME	Ministry of Mines and Energy
MPWT	Ministry of Public Works and Transport

MWRAM	Ministry of Water Resources and Meteorology
MSDS	Material Safety Data Sheet
NCC	National Coordinating Committee
NEAC	National Electrical Authority of Cambodia
NGO	Non-Governmental Organization
NIP	National Implementation Plan
PBDEs	Polybrominateddiphenyl ethers
PCBs	Polychlorinated biphenyls
PFOS	Perfluorooctane sulfonic
POPs	Persistent Organic Pollutants
RGC	Royal Government of Cambodia
SAICM	Strategic Approach to International Chemicals Management
UNEP	United Nations Environmental Programme
UNIDO	United Nations Industrial Development Organization
WSSD	World Submit on Sustainable Development

EXECUTIVE SUMMARY

The Stockholm Convention on Persistent Organic Pollutants (referred to as POPs) was adopted in May 2001 and entered into force on 17th May 2004. The overall objective of the Convention is to protect human health and the environment from POPs. To this end, it requires Parties to take measures to eliminate or reduce the release of POPs into the environment.

The Convention initially encompassed 12 substances or substance groups (referred to as old POPs) and was later expanded by 10 new substances or substance groups (referred to as new POPs). Cambodia ratified the Convention on 23rd May 2001.Cambodia's first NIP of the Convention was prepared in June 2006 and submitted to the Conference of the Parties. According to the Convention, all parties undertake to prepare an updating of implementation plan five years after submission of the original plan.

This updating of NIP provides a description of general information related with POPs country profile, implementation status of original NIP, POPs regulated by the convention, current problems and impact of POPs on the human health and the environment, particularly focusing on describing developments in the past 6 years with regard to the old POPs, as well as a description of the 10 new substances.

This updating of NIP provides a framework of legislation on POPs. This included the international commitment and regulation in Cambodia of POPs and national law. Most legislation on POPs in Cambodia is not directly regulated for managing POPs. In the Cambodia context, the Stockholm Convention is implemented through multi regulation related on persistent organic pollutants (Table No 8 in this document mentioned about legislation related to POPs and related residues management in Cambodia). Generally, some legislation has been updating of since the first implementation plan was prepared. This part also mentioned above Cambodia strategy for sustainable development and clearly identified the roles and responsibilities of governmental ministries for managing POPs.

Very important part of updating of NIP is strategy and action plan for management of POP in Cambodia. This part provides the objectives of NIP, national priority and strategy for managing POPs. POPs action plan divided two parts. One is updating of plan for old POPs included pesticides, PCB and unintentionally produced POPs and two develop action plan for new 10 POPs (Cambodia focused only on PBDEs in e-waste and transportation sector and PFOS in firefighting). POPs action plan also provides a timeframe for implementation of the NIP and estimated cost for financial requirement and future funding.

To achieve the national objectives related to POPs management, the activity projects have been proposed are:

A- Initial POPs

Objective 1: Strengthen institutional capacity and improve public awareness on obsolete pesticides including POPs pesticides.

- Strengthening existing pesticide regulation enforcement,
- Promoting the involvement of all national stakeholders (governmental and non-governmental, private and public) in the various issues related to pesticides management and use,
- Expanding awareness raising program on pesticides including POP pesticides toxicity and hazards for related bodies (e.g. training workshops for government staff who work with pesticides management, pollution control and import/export control, dealers and the end-users), and

- Establishing a networking and communication system with both national and international level links regarding pesticides and POPs pesticides information exchange.

Objective 2: Strengthen laboratory capacity to support periodic POPs pesticides monitoring

- Upgrading capacity of laboratory and the capacity building for pesticide contamination analysis in crop, food, soil, and water, and
- Conducting a scientific monitoring study on pesticide contamination on crop, food, soil, water and air and human health.

Objective 3: Build capacity of government officials and enhance participation of private sector for managing PCBs

- Building capacity of government officials and other stakeholders including private sector,
- Making effort to building capacity of decision makers to consider and provisional to the import only PCBs-free equipment,
- Strengthening cooperation between governmental institutions, the public, private sector and the stakeholders for sound PCBs management related to electrical purposes and information freely shared, and
- Keeping in use the existing transformers PCBs contaminated until the end of their lives (up until 2025) by private companies under regular monitoring and reporting system made by MME's officers.

Objective 4: Improve management and monitoring measure to manage stockpile and waste contained PCBs

- Development of PCBs substance management regulation,
- Scaling up controlling transformers being use by private entities,
- Strengthening public laboratories regarding both technical and human resources in order to be able to monitor and analyze for banned chemicals and PCBs,
- Undertaking effective measure for storing the existing equipment in a safe place,
- Seeking for international assistance regarding both technical and financial support for the decommissioning of old transformers that are contaminated with PCBs, and
- Undertaking regular monitoring of the dielectric fluid of both public and private transformers.

Objective 5: Take effective measure for reduction of the release of unintentionally produced PCDD/PCDF

- Continuing consultation and finalizing law on chemical management and Developing a specific legislation/regulation on managing unintentionally produced POPs,
- Building capacity for decision makers, governmental official, local authorities, communities on uncontrolled burning waste,
- Providing training for formal education at public school (all levels),
- Providing training to industrial private sector on uncontrolled warning waste and doing a widespread education and dissemination to stakeholders at all levels,
- Enforcing law where hot-spot sources or PCDD/PCDF release sources with the target of halting and minimizing negative impacts to the environment and human health,
- Mainstreaming the sound management of PCDD/PCDF and minimizing initiatives of unintentionally produced POPs in the sectoral developments including in the planning sector,
- Developing a National Integrated Solid Waste Management Plan (NISWM), to provide viable disposal options including engineered landfills,

- Improve waste management capacity (Service collection, 3R implementation, incineration waste burning service and dump side development,
- Promoting and encouraging the comprehensive implementation of 3R initiatives towards household and/or urban solid waste management in order to minimize solid waste to be discarded at dumpsite as well as minimizing atmospheric pollution, climate change, acid rain and the release of PCDD/PCDF through open burning of solid wastes at dumpsites. Finding alternative in supporting daily involvement of women and/or assist to them in accessing to the job opportunity where women head household are taken higher percentage than men in the Kingdom of Cambodia,
- Improving waste management practices based on environmental sound friendly which is contributed to minimize health and environmental impacts resulting from generating and releasing of unintentionally produced POPs,
- Developing a roadmap as the guidance on the management of unintentionally produced POPs based on the national strategy development plan and the UN Charts in relation to the minimization and phasing out of unintentionally produced POPs,
- Developing pilot projects and selected implementing areas to introduce and minimize the release of PCDD/PCDF from industrial and agricultural practices,
- Strengthening the ability and capacity of government agencies to cope with the management of unintentionally produced POPs by sector development (technical capacity for implementation and enforcement),
- Building capacity of private sector and civil society implicating the interception and minimization of PCDD/PCDF release which may occur from their daily activities and/or involvements,
- Conducting research, monitoring and inventory for new POPs released, and
- Mobilizing financial resources needed to other donor sources/ partners and national operational budget.

B- <u>New POPs</u>

Objective 6: Develop legal frameworks/measures and effectiveness enforcement of POP PBDEs in E-Waste and in Transport Sector

- Developing specific legislation on POP PBDEs in e-waste and in transport sector,
- Raising basic consideration in banning the importation of EEE or other products or articles that contains internationally banned chemicals which Cambodia is a party to, such as POP PBDEs, and
- Re-enforcing cars deregistration system as well as enforcing of sub-decree on the management of garages, for which environmentally sound management shall be also considered.

Objective 7: Build capacity and promote awareness of POP PBDEs in E-Waste and in Transport Sector to the officials and the public

- Building capacity and awareness raising on POP PBDEs issues particularly their impact on human health and the environment should be provided. Such awareness should cover the environmentally sound handling, dismantling and recycling of EEE and its wastes.
- Building capacity and promote awareness raising on POP PBDEs impact on human health and the environment to officials from MPWT, MOE, and private sector, training will cover sound handling of car wastes or other wastes generated by end of life of vehicles.

Objective 8: Strengthen the management and applying monitoring measure of POP PBDEs in E-Waste and in Transport Sector

- Requesting an exemption from the Secretariat of the Convention for recycling articles containing POP PBDEs,
- Putting notification to the Secretariat of the Convention that CRT casings of TVs and monitors contaminated with HexaBDE and HeptaBDE (c- OBDE) remain in use within the country and to notify the SECRETARIAT the continued use of C-PentaBDE,
- As there is continued use of cars with car seats contaminated with c-PentaBDE in the country it is necessary to notify the Secretariat of the Convention that PUR foam in car seats contaminated with TetraBDE and PentaBDE (c- PentaBDE) remain in use within the country,
- Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs) waste from electronic equipment and casings of TVs and monitors,
- Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs), waste from cars,
- Promoting safe and sound handling of POP PBDEs. This also refers to the management of end of life EEE as well as controlling the use of spare parts,
- Promoting safe and sound handling of POP PBDEs. This refers to the management of end of life vehicles as well as controlling car spare parts, i.e. seat, cardboard, armrest, oily waste discharge… etc.,
- Monitoring on EEE repairing or dismantling facilities or scrap yards should be regularly undertaken to ensure that existing legislations are followed,
- Monitoring of car repairing or dismantling garage/facilities should be regularly undertaken to ensure that existing legislations is applied, and
- Making request for the further import of cars manufactured before 2005 a certificate that the cars' materials do not contain POP PBDEs.

Objective 9: Minimize the use of PFOS and take counter measure to manage waste contaminated PFOS based on environmental principles.

- Developing of legal framework for further prevention of the release of PFOS into the environment such as ministerial declaration or a circular or a joint declaration & enforcement by MOE and MOI,
- Keeping existing foam containing PFOS for emergency purpose due to Cambodia does not have resources to replace any PFOS firefighting foam for the time being,
- Undertaking sound environmental disposal of obsolete foam due to the obsolete firefighting foam containing PFOS, neither by its deteriorate quality/property nor by law requirement, shall be considered as hazardous wastes and must be disposed at designated hazardous dumpsites,
- Building capacity on safe and sound handling of firefighting foam to the police fire brigade,
- Seeking the external support for the analytical determination of PFOS or PFOS related chemicals in selected firefighting foams with amount of 44,419 litres are considered as PFOS contained, where 9,934 litres are likely contained PFOS and 34,485 litres are assumed to contain PFOS, while the 27,190.6 litres are unlikely to contain PFOS, and
- Seeking exemption from the Secretariat to continue to use PFOS containing firefighting foam already in the country.

Activities proposed will be implemented by different government ministries involved by the relevant stakeholders. The Royal Government of Cambodia will provides financial support entity or contributes in kinds or/and in cash with the development partners, civil society, NGOs and other donors community to implement this NIP for reduction and elimination of POPs. In conclusion, this

updating of plan will be carried out within 5 years (2016-2020) based on the identified priority activities/projects.

SECTION 1: INTRODUCTION

1. BACKGROUND TO THE ADOPTION OF THE STOKHOLM CONVENTION

On 23rd May 2001, Cambodia signed the Stockholm Convention and officially became the member of the convention. The Stockholm Convention on Persistent Organic Pollutants (POPs) entered into force on 17th May 2004. It is a global treaty signed by 151 States and regional economic integration organizations with the objective to protect human health and the environment from persistent organic pollutants. The Convention web address may be found at: http://www.pops.int/

Regulated by the Convention, Cambodia is a member of parties to the Convention are also required to develop and endeavor to put into practice a National Implementation Plan (NIP) setting out how Cambodia will implement their obligations under the Convention. The national implementation plan is submitted by Cambodia within two years of the date on which the Convention entered into force for that Party. In June 2006, the National Implementation Plan (NIP) was formally formulated for reduction and elimination of 12 initial POPs. The first NIP's timeframe covered from 2006-2010. Cambodia as well as other countries adopted the amendments listing the addition of the nine POPs in 2009 and one more POPs in 2011. The first Cambodia's NIP is subject to periodic update and revision in response to the dynamic nature of the Convention, for example, in its identification, inclusion and management of new POPs.

2. PURPOSE OF THE UPDATING OF NATIONAL IMPLEMENTATION PLAN

Cambodia has experience in developing and implementing enabling project UNEP-funded on first development of the NIP under the Stockholm Convention. The purpose of this reviewing and update the NIP is still ongoing to assist the decision makers of Cambodia in fulfilling obligation of the reviewing and update the National Implementation Plan having it endorsed and submitted to Conference of Parties of Stockholm Convention on Persistent Organic Pollutants (POPs).

3. WHAT ARE PERSISTENT ORGANIC POLLUTANTS

POPs are a group of chemicals that are toxic, persist in the environment, bio-accumulate in fatty tissues and bio-magnify through the food chain. In addition, POPs have the potential to be transported long distances and deposited far from their place of release, including in pristine environments such as the Arctic and Antarctic. POPs have been identified as priority chemicals for many years in the United Kingdom and the international community has called for actions to reduce and eliminate their production, use and release.

4. OVERVIEW OF THE LISTED PERSISTENT ORGANIC POLLUTANTS

The Stockholm Convention currently focuses on reducing and eliminating releases of 22 POPs (Table No1). These are included those POPs added to the Convention in 2009 and 2011.

Table No 1: The 22 POPs listed by category of use in the Stockholm Convention

Chemical's Name	Listed in	POPs Pesticides	Industrial POPs Chemical	Unintentionally Produced POPs
Initial POPs				
1. Aldrin	2004	√		
2. Chlordane	2004	√		
3. Dieldrin	2004	√		
4. Endrin	2004	√		

5. Heptachlor	2004	√		
6. Hexachlorobenzene	2004	√	√	√
7. Mirex	2004	√		
8. Toxaphene	2004	√		
9. Polychlorinated biphenyls (PCBs)	2004		√	√
10. DDT	2004	√		
11. Dioxins	2004			√
12. Furans	2004			√
New POPs				
13. Chlordecone	2009	√		
14. Hexabromobiphenyl	2009		√	
15. Hexa-and hepta-bromodiphenyl ether	2009		√	
16. Alpha hexachlorocyclohexane	2009	√		
17. Beta hexachlorocyclohexane	2009	√		
18. Lindane (gamma hexachlorocyclohexane)	2009	√		
19. Pentachlorobenzene (PeCB)	2009	√	√	√
20. Perfluorooctanesulfonic acid (PFOS), its salts and perfluorooctanesulfonyl fluoride (PFOS-F)	2009	√	√	
21. Tetra- and pentabromodiphenyl ether	2009		√	
22. Endosulfan	2011	√		

Source: ***Update Inventory Report on Unintentionally Produced POPs, 2014***

5. PROVISIONS OF THE STOCKHOLM CONVENTION

The Stockholm Convention establishes a strong international framework for promoting global action on POPs, which are divided into three groups according to their mechanism of production and level of restriction.

Nineteen of the intentionally produced chemicals are subject to a ban on production and use except where there are generic or specific exemptions (aldrin, poly-bromodiphenyl ether (hexa-, hepta-, tetra-, penta-), chlordane, chlordecone, dieldrin, endosulfan, endrin, heptachlor, hexabromobiphenyl, hexachlorobenzene (HCB), alpha and beta hexachlorocyclohexane (HCH), lindane (gamma hexachlorocyclohexane), mirex, pentachlorobenzene, perfluorooctanesulfonic acid (PFOS), its salts and perfluorooctanesulfonyl fluoride (PFOS-F), polychlorinated biphenyls (PCBs), toxaphene (also known as camphechlor)). In addition, the production and use of DDT is severely restricted.

Parties are required to take measures to reduce releases from the unintentional production of dioxins, PCBs, HCB and pentachlorobenzene (PeCB) with the goal of their continuing minimization and, where feasible, ultimate elimination. The main tool for this is the development of source inventories and release estimates as well as plans for release reductions. The use of Best Available Techniques to limit releases of unintentionally produced POPs from the major sources, as categorized in the Convention, is also required.

There are special provisions for those Parties with regulatory assessment schemes to both review existing chemicals for POPs characteristics and to take regulatory measures to prevent the development, production and marketing of new substances with POPs characteristics.

The Convention also makes provision for the identification and safe management of stockpiles containing or consisting of POPs. Waste containing, consisting of or contaminated with POPs should be disposed of in such a way that the POPs content is destroyed or irreversibly transformed. Where this does not represent the environmentally preferable option or where the POPs content is low, waste shall be otherwise disposed of in an environmentally sound manner. Disposal operations that may lead to the recovery or re-use of POPs are forbidden.

The Convention recognizes the particular needs of developing countries and specific provisions on technical assistance and financial resources and mechanisms are included in the general obligations.

6. REQUIREMENT FOR THE DEVELOPMENT OF THE UPDATING OF THE NIP

Based on article 7 of the Stockholm Convention, parties need to do its NIP update. In February 2013, GEF's CEO approved enabling activity project for Cambodia. The project title is review and update of the National Implementation Plan for the Stockholm Convention on POPs in the Kingdom of Cambodia.

Follow the project's action plan, the updating of Cambodia NIP has been developed by the Department for Environment Environmental Pollution Control of the Ministry of Environment, Cambodia and soon become the General Department of Environmental Protection (Environmental Protection Agency), Project Coordination Unit and National Consultant who well experiences in development of the first Cambodia NIP in close collaboration with the Ministry of Agriculture, Forestry and Fishery, Ministry of Industry and Handicraft, Ministry of Public Work and Transport, Ministry of Interior and other relevant Government Departments and Agencies.

SECTION 2: CURRENT STATUS OF CAMBODIA

1. COUNTRY PROFILE

1.1 Geography and population

A. Geography

Cambodia is a tropical country situated in South East Asia between latitudes 8^0 and 12^0 degree north and longitudes 102^0 and 108^0 degree east. It shares borders with Laos to the North, Thailand to the North and West, and Vietnam to the East and South. Cambodia has total area of 181,035Km^2 territory with a coastline of about 435 Km on the Gulf of Thailand.

Cambodia has a tropical monsoon climate with pronounced wet and dry seasons. During the wet season, from May until October, rainfall is largely derived from the southwest monsoon drawn landward from the Indian Ocean. The dry season, from November to April, is associated with the Northeast monsoon, which brings cooler air offer dusty and sandy. From the latter part of July there may be period without significant rainfall for ten or fifteen days or more at a time, referred to as the short dry season.

Most of Cambodia can be described as sub humid. The wet season accounts for 80% of the annual rainfall. The average annual rainfall varies considerably across the country. Rainfall in the central area, covering the Tonle Sap Basin-Lower Mekong valley, averages 1,200mm. The heaviest rainfall, over 3,000mm per year, occurs along the coastal lowland in the west. Precipitation also varies widely from year to year.

B. Population

Cambodia has a population of 15,205,539 people and a density of 211.8 per square mile or 82.7 per Km2, as stated by a July, 2013 estimate provided by populationfun.com. For Cambodia, the estimate was calculated considering the effects of excess mortality due to AIDS, which can result in lower life expectancy, higher infant mortality, higher death rates, lower population growth rates, and changes in the distribution of population by age and sex than would otherwise be expected. The last census took place in 2008 and indicated a total population of 13,388,910 people.

Based on the statistical data of the Ministry of Planning, a 2013 estimate indicates a population growth rate of 1.67%, making Cambodia the 71st country in the world by growth of the human population, while birthrate is 24.88 births/1,000 populations. Life expectancy at birth is of 63.41 years – rank 179 in the world, 61.01 years for males and 65.93 years for females. Sex ratio at birth is 1.05 male(s) per female and of total population is of 0.94 males(s) per female. According to a 2009 estimate, 3,100 people from Cambodia died of HIV/AIDS. The degree of being infected with major food, waterborne, and vector borne diseases is very high. The country's urban population is projected to double until 2030, while the rural population will grow only by 14.2%. By the end of the projection period, urban areas will be experiencing an annual growth of 2.22% while rural areas of only 0.25%. In general, the growth in urban areas will be determined mainly by migration.

However, based on the National Strategic Development Plan 2014-2018, the population of Cambodia showed in table below:

Table No 2: Cambodia Population at a Glance

No	Population	Unit	2013	2014	2015	2016	2017	2018
1	Total: November 2913 CIPS	Million	14.7					
2	Population Density	Per Sq.km	82	85	87	88	89	90
3	Male/Female Ration	100 Female	94.3	96	96.2	96.3	96.5	96.7

4	Age 0-14	% Population	29.4	29.6	29.2	28.9	28.7	28.5
5	Age 15-64	% Population	62.6	65.9	66.2	66.4	66.5	66.5
6	Age 65 and above	% Population	5.0	4.5	4.6	4.7	4.8	5.0
7	Rural Population Rate	% Population	78.6	78.5	78.4	78.3	78.2	78.1
8	Urban Population Rate	% Population	21.4	21.5	21.6	21.7	21.8	21.9
9	Annual Growth Rate	%	1.46	1.44	1.42	1.41	1.39	1.36
10	Total Fertility Rate (per 1,000)	Live births	2.8	2.7	2.6	2.5	2.4	2.3
11	Life Expectancy at birth							
	▪ *Male*	%	67.1	67.3	67.5	67.7	67.9	68.1
	▪ *Female*	%	71.0	71.2	71.4	71.6	71.8	71.9

1.2 Political Profile

Cambodia is a country holding the Constitutional Monarchy with three supreme institutions such as a Parliament (Senate, National Assembly), Royal Government, and Judicatory.

a) Parliament

The Cambodian parliament is composed of 2 houses, a lower house, which is also called the National Assembly, and an upper house that is commonly referred to as the Senate. Draft laws require adoption by both houses before they become laws.

b) Senate

An amendment of the Constitution led to the establishment of the Senate as a body empowered with legislative power after the 1998 general election. Within a month period, the Senate reviews and makes recommendations on draft or proposed legislations initially adopted by the National Assembly. When a draft is marked as urgent, the review period is reduced to five days. It also considers all other matters submitted by the National Assembly. Senate members have the right to initiate legislation.

Other roles include a duty to provide coordination between the National Assembly and the Government. When the need arise, both houses can jointly convene a congress to solve problems of national importance.

The Senate consists of 61 members. The Senate Chairman is assisted by 2 Vice Chairmen. The Senate meets twice a year with each session lasting for three months. When needed, the Senate can call an extraordinary session. The first term of senate will expire in 2004 after which senators will be elected for a six-year term.

c) National Assembly

According to the Constitution, the National Assembly is elected for five years and can be dissolved only under very specific circumstances, i.e. if on two occasions in twelve months; the Government has been in a minority.

The National Assembly consists of 123 members all of whom are elected by universal election, through a free, equal, and direct and secret ballot. They may stand for re-election.

The ordinary session of the National Assembly is held twice per year with each session lasting at least three months. If there is a proposal from the King, the Prime Minister or one-third of the members, the Permanent Committee can call for an extraordinary session. In between session, the Permanent Committee manages the work of the assembly.

In the case of war or other specific circumstances where an election cannot be held, the National Assembly may, at the request of the King extend, its term for one year at a time. A two–third vote of the entire Assembly is required for the extension. If the country is in a state of emergency, the National Assembly must meet every day and cannot be dissolved.

The National Assembly is the only body empowered to adopt legislation. This right is not transferable to any other body. It approves the national budget and state planning, authorizes the government to borrow and to lend, and is empowered to create, amend or annul taxes. It approves or annuls treaties or international conventions, and may declare a state of war. The adoption of the above mentioned laws must be decided by a simple majority of all members. It may pass a vote of confidence or no confidence in the Royal Government by a two-thirds majority of all members.

The National Assembly and Senate members or the Prime Minister have the right to propose laws. Adopted laws which run counter to the principles of national sovereignty and affect the political unity or the administrative management of the nation are annulled. The Constitutional Council is the only body empowered to approve this annulment. Laws come in to effect in Phnom Penh within ten days and within twenty days nationwide after their promulgation. Urgent laws become effective immediately after the King's promulgation.

d) Royal Government of Cambodia

The Prime Minister can present for nomination by the King by way of a Royal Decree (Reach-Kret) the following high ranking civilian and military officials: members of the Government; Governor and Deputy Governor of the National Bank of Cambodia, under secretaries of state; advisors to the Government and to the Prime Minister; secretary generals of the Government; secretary generals and director generals of ministries, delegates of the Government; governors of provinces and municipalities; ambassadors; extraordinary and plenipotentiary envoys; chief of staff of the armed forces; and military generals. He can also appoint by way of a sub-decree other high ranking civilian, military and Foreign Service Officials, deputy governors of provinces and municipalities, chief of district (Srok) and urban divisions (Khan).

The Constitution defines the royal role as being one of a symbol of unity and permanence of the Nation and a guarantee of national independence, sovereignty and territorial integrity of the Kingdom. The King is the head of state for life. The King reigns but does not govern. He approved the Prime Minister and the Council of Ministers. In the absence of the King, the chairman of the senate assumes the powers as acting Head of State.

The Council of Ministers is the Royal Government of Cambodia. The Royal Government is the executive organ of the State led by Prime Minister. The RGC, with its armed forces and its administration, governs the State, is in charge of the overall national policies and programs implementation, and is accountable to the Parliament. The Prime Minister is assisted by deputy Prime Ministers, Senior Ministers, Ministers and Secretaries of State most of whom are in charge of a separate ministry.

After approval from the parliament member, a Prime Minister forms the government by preparing the list of the Ministers and Secretary of State and submits the listed to the national assembly for approval. The following Ministries required for those position.

Office of the Council Ministers

Ministry of Agriculture Forestry and Fisheries
Ministry of Commerce
Ministry of Culture and Fine Art
Ministry of Economic and Finance
Ministry of Education Youth and Sports
Ministry of Environment
Ministry of Foreign Affairs and International Cooperation
Ministry of Health
Ministry of Industry and Handicraft
Ministry of Information
Ministry of Interior
Ministry of Justice
Ministry of Land Management, Urban Planning and Construction
Ministry of Labor and Vocational Training
Ministry of Mines and Energy
Ministry of National Defense
Ministry of Parliamentary Affairs and Inspection
Ministry of Planning
Ministry of Post and Telecommunication
Ministry of Public Works and Transport
Ministry of Religions and Cults
Ministry of Rural Development
Ministry of Social Affairs and Youth Rehabilitation
Ministry of Tourism
Ministry of Water Resource and Meteorology
Ministry of Women Affairs and Veteran
Ministry of Public Service
State Secretariat of Civil Aviation

e) Judicatory

The judicial power is independence which guarantees by the King with the assistance of the Supreme Council of Magistrate. There is no any other power has the authority to apply the judicial power, only the judge can make hearing and the judgment. This power is protect the right and freedom of the people. The power occupies by the Supreme Court, any court sections and level, and is cover to all kind of cases including the administrative case. Under the law on organizing and functioning of the Supreme Council of Magistrate, Only the Supreme Council of Magistrate can make decision to penalize the judge for making any wrong action.

The Independence of the Judiciary - the judge must decide in complete impartiality, on the basis facts which are presented to them, and in accordance with the law, refusing any pressure, threat or intimidation, direct or indirect, from any of the parties to a proceeding or any other person. They must have decent and sufficient material conditions for exercise of their functions. Judge must suitable training and be remunerated adequately to ensure their impartiality and independence.

The Municipal /Provincial Courts and the Appellate Court judge both law and fact, but for the Supreme Court judge the law only, and may render a final decision on both the law and the facts in case the second appellate.

1.3 Economy

Based on Cambodia economic update published by the World Bank Group in October 2014, Cambodia economic growth has held up well despite domestic political situation uncertainty and

instability in neighboring countries. Real growth for 2014 is estimated to reach 7.2 percent, driven by the garment, construction, and services sectors. Overall macroeconomic management has been good with fiscal consolidation underpinned by improved revenue administration. In 2015, with the expectation of renewed confidence and the return of political stability after ending a year-long political deadlock in July 2014, bolstered by a strengthening global economy, Cambodia's real economic growth rate is expected to reach 7.5 percent, similar to that of 2013. The downside risks to the projected robust growth are a potential recurrence of labor unrest, natural disasters, especially the possibility of heavy floods, as well as regional political uncertainty. The following table below summarized the current Cambodia economic and estimated for Cambodia economic from 2015 up to 2018.

Table No 3: Cambodia Macro-Economic and Business at a Glance

No	Macro-Economic	Unit	2013	2014	2015	2016	2017	2018
1	Annual GDP at Constant 2000 Prices	billion Riels	61,525	68,618	75,636	83,422	92,143	101,548
2	Annual GDP at Constant 2000 Prices	million USD	15,191	16,943	18,676	20,598	22,474	24,768
3	Real GDP growth rate (constant prices 2000)	%	7.6	7.0	7.0	7.0	7.0	7.0
	▪ *Agriculture*	%	4.2	4.2	4.0	4.0	4.0	4.0
	▪ *Industry*	%	9.8	9.9	9.3	9.1	8.8	8.8
	▪ *Services*	%	8.8	6.8	7.1	7.1	7.2	7.2
4	GDP Per Capita	000 Riels	4,248	4,670	5,072	5,523	5,949	6,472
5	GDP Per Capita	USD	1,036	1,139	1,237	1,347	1,451	1,579
6	Inflation (Year average)	%	3.0	3.5	3.5	3.5	3.5	3.5
7	Exchange rate per US$ (Year average)	Riels	4100	4100	4100	4100	4100	4100
8	Gross Foreign Exchange Reserves	months of imports	4.5	4.5	4.5	4.5	4.5	4.5
9	Gross Foreign Exchange Reserves - In US$	USD million	3,932	4,477	5,086	5,708	6,365	7,065
10	FDI: Investments -- for the year	USD million	1,216	1,211	1,361	1,529	1,696	1,904

Table No 4: GDP Cambodia Fiscal Year

No	Fiscal Year	Unit	2013	2014	2015	2016	2017	2018
1	Total Budget Revenues	% of GDP	14.3	15.1	15.6	16.1	16.5	16.9
2	Total Budget Expenditures	% of GDP	19.5	19.9	19.8	19.9	19.9	19.9
3	Current Surplus	% of GDP	2.3	2.6	3.4	3.9	4.4	4.8

Table No 5: Cambodia Finance Sector

No	Finance Sector	Unit	2013	2014	2015	2016	2017	2018
1	Commercial Banks and Specialized Banks	Nos	44					
	▪ *Loan outstanding*	million Riels	30,204	39,265	51,045	66,358	86,266	112,145
2	Micro-Finance Institutions	Nos	38					
	▪ *Loan outstanding*	million Riels	5,262	7,524	10,760	15,386	22,003	31,464

Table No 6: Cambodia Official Development Assistance Including NGOs

No	Development Assistance	Unit	2013	2014	2015	2016	2017	2018
	Total	USD millions	1,566.4	1242.2	1,000.8			
1	Technical Assistance	USD millions	263.7	251.1	214.7			
2	Capital Assistance	USD millions	1,238.3	897	696.8			
3	Other than TA	USD millions	64.4	94.1	89.3			

1.4 The Overall Environmental Situation in Cambodia

Cambodia has many positive physical and cultural attributes which lay the sustainable basis for its ongoing development. It also has significant social, environmental and economic constraints which are currently compounded by inadequate social, environmental and economic policies and legislation as well as administration with sound governmental commitment.

This document points that, Cambodia is still under the serious demographic, economic, land conflict and industrial pressures raised from the majority of serious social and environmental problems originated in other countries. Most of the natural resources are vulnerable and lost or degraded due to:

- The ability of Government is limited to manage natural resources on a sustainable basis because of inadequate policies, legislation, forward planning and administration;
- Land use and management is effectively uncontrolled and emerging as a serious issue;
- Municipal power management is a conspicuous national dilemma;
- Serous soil degradation, water resource uncontrollable and mine fields impacts is becoming prevalent in the marginal agricultural and rural infrastructural development lands which are Cambodia's agricultural resource base of the future;
- Gender and development issues is critically considered by the strategy to promote women equity and empower;
- Economic sectors development like mining, energy, water supply, tourism development are faced with many issues need to solve urgently in order to ensure long term sustainable development;
- The governance systems are yet not comprehensive; the legal knowledge and law enforcement capacity is below the required level, and the organizational structures and functions are not fully responsive to the needs. Additionally, there is little inter-ministerial/ departmental coordination and limited coordination between the national and sub-national levels, resulting in less than optimal service delivery; and
- Managing the environment and natural resources requires the highest attention for sustainable development. In addition, global climate change has been adversely impacting on Cambodia's ecological system and hence, socio-economic development, for which Cambodia has to brace itself.

However, Cambodia is still fortunate in having the opportunity to focus this National Sustainable Development Strategy on addressing the sources of problems for each strategy rather than addressing the effects with short term curative measures. Unfortunately, it is some track record of the majority of governments worldwide that they pay insufficient attention to all sectors and sustainable development concepts and sustainable resource use issues until the problems are so conspicuous and serious that they need expensive curative measures such as 'rehabilitation'. Cambodia has the opportunity to break with this trend, but it is clearly at the threshold and if the opportunity is not grasped, it will soon be lost.

Although all action in the NSDS document will require increased capital and development investments, these are rarely significant if viewed over the life and turnover of the actions concerned. More significantly, social, economic and environmental damage results in high costs for remedial measures, of contaminated sites and rehabilitation of degraded ecosystems as well as infrastructure improvement, and changes people' attitude regarding gender equity and empower are prohibitively expensive. Some environments can never be rehabilitated, while the loss of national heritage is, like extinction, forever.

2. IMPLEMENTATION STATUS OF CAMBODIA'S ACTION PLAN ON POPs

2.1 Update for POPs Regulated Before 2009 (Old POPs)

Based on the national policy related to POPs and from the time of the signature of the Stockholm Convention in May 23, 2001, the Royal Government of Cambodia delegated the ministry of environment to play a role as a national focal point for the Stockholm Convention. At the same time, in order to facilitate the implementation of the Stockholm Convention among relevant institutions and also for improving effective management of chemicals as well as POPs management, the Inter-Ministerial Technical Working Group-IMTWG (known as National Coordinating Committee – NCC) have been established with membership of governmental institutions, NGOs, and national institutes. The Ministry of Environment, in association with other governmental institutions and stakeholders, deals with human health protection, environmental protection, human capacity building, and information dissemination and public awareness raising in Cambodia, a country where both human and natural resources have been devastated by years of civil war. The initial NIP supports the governmental policy framework and Cambodia's millennium development goals in the following areas:

1) Improvement of public health,
2) Prevention of toxic chemicals releases into the environment, and
3) Reduction of poverty through reducing cost of health services.

The initial NIP established four action plans, namely:

- Action Plan on POPs pesticides,
- Action Plan on PCBs,
- Action Plan on unintentionally produced POPs, and
- Action Plan on the management of the NIP implementation.

The Goals and Objectives for the first three of these are listed below:

POPs Pesticides

Goals: Eliminate the import and use of POPs pesticides. Overall Objectives: Effectively implement

The law and enforcement related to POPs pesticides.

Objective 1: Amendment of existing legal instruments and strengthening effective pesticides (including POPs) law enforcement.

Objective 2: Strengthen institutional capacity and raise public awareness on obsolete pesticides including POPs pesticides.

Objective 3: Undertake ecologically sound management measures related to obsolete pesticides including POPs pesticides.

Objective 4: Eliminate stockpile of obsolete pesticides, including POPs pesticides.

Results Achieved in Implementation of Action Plan of POPs Pesticides

MAFF has successful implemented of activities to achieve the objective 1 through developed new law on the Management of Pesticides and Fertilizers. It is completed (2012). The progress towards achieving the target under objective 2 was estimated at 20% by the MAFF's representative through POPs priority setting workshop in October 2014. Most of capacity building achieved through the workshops, meeting and or seminars. MAFF has not been conducting any profession training on POPs pesticides. This is a good self-evaluation of achievement objectives 3 made by MAFF' representative and the figure is closer to 90% through updating of POPs Pesticides inventory 2014. However, the MAFF has not yet been undertaken the monitoring and laboratory testing of POPs impact on the environmental and human health for the contaminated site that showed in NIP 2004. MAFF got fully be implemented the field monitoring on the trafficking of illegal pesticides including POPs pesticides. After 10 years of NIP 2004 approved, we noted that, land use completely changed and no stockpile to be found in Cambodia (Based on inventory 2014). The progress towards achieving the target under objective 4 was estimated at 100%.

PCBs

Goals: Reduce risks and minimize impacts caused by PCBs with sound economic and ecological management. Overall Objectives: Proper economic and ecological management of PCBs and its contaminated articles.

Objective 1: Develop legal instruments and technical standards for managing equipment and articles contained and contaminated with PCBs.

Objective 2: Develop ESM of in-use electrical equipment and accessories/articles containing and/or contaminated with PCBs.

Objective 3: Set up a management tool for transformers in use until the end of life considering the socio economic aspects

Objective 4: ESM of out-of-use of equipment, articles and wastes containing and/or contaminated with PCBs

Objective 5: Strengthen capacity and enhance public awareness on PCBs issue

Results Achieved in Implementation of Action Plan of PCBs

The progress towards achieving the target under the action plan on PCBs was estimated at 85% by the MME's representative through the inventory report. The main issue current remained in the country is the management of private electrical companies that use uncontrollable transformers for electricity supply. For further well implementing NIP, particularly the environmentally sound management of PCBs substance and its contaminated materials, Cambodia requested for capacity strengthening in this field. In response, the SAICM Quick Start Programme Trust Fund was granted a regional project entitled "Capacity Strengthening and Information Exchange on PCBs Management in Selected Asia Countries" which Cambodia was selected with other 3 countries in Asia, including Lao PDR, Pakistan and Sri Lanka. China is participating in this project and act as the role of technical support to other partners in this project.

Based on desk study and field observation, it is understood that there are no PCBs transformers are importing to the country since the enabling activities project to develop a National Implementation Plan (NIP) for the Stockholm Convention was carried out in 2003. Other good opportunity for Cambodia related to not importing PCBs transformers is associated with national

grid network which changing from 15 KV to 22 KV, where new and non PCBs type transformers are encourage to import.

The study also found that .more aged PCBs transformers are remove from services and kept at EDC Sambour warehouse and waiting from disposal. No any testing for PCBs containing in dielectric fluid was made; however, based on their ages and repairing history, it can be concluded that those retirement transformers are contaminated by PCBs. Furthermore, EDC Sambour warehouse is considered PCBs pollutant hotspot site that have to be cleaning up.

Unintentionally Produced POPs

Goals: Reduce and eliminate the release of unintentionally produced POPs. Overall Objectives: Proper management of the release of unintentionally produced POPs.

Objective 1: Revise or develop the legislations related to the sound management of unintentionally produced POPs.

Objective 2: Strengthen capacity and raise public awareness on unintentionally produced POPs issues and hazard.

Objective 3: Improve waste management practices and prevent uncontrolled burning of wastes

Objective 4: Maintaining of comprehensive inventories of unintentionally produced POPs.

Objective 5: Implementation of guidelines on best available techniques (BAT) and best environmental practice (BEP) to prioritized sources of unintentionally produced POPs

Results Achieved in Implementation of Action Plan of Unintentionally Produced POPs

The progress towards achieving the target under the action plan on unintentionally produced POPs was estimated at 80% by the unintentionally produced POPs inventory consultant and the stakeholders who attended in the priority setting consultation workshop in October 2014. The progress towards achieving the target under objective 1 was estimated at 90% by drafted environmental pollution management law and submitted to council of minister and finalized the sub-decree on e-waste.

Achieved 90% over the target under objective 2 on capacity building and public awareness raising includes project supported by UNIDO implemented by the MIH on boiler of industrial sector including private sector and academic. Training of trainers for provincial environmental departments and extension worker and public awareness are also achieved a great success with promoted understanding about unintentionally produced POPs at city level and on removing crematory outside town as a big part of our action at city levels on dioxin/furan release reduction. Supported and promoted debate action through national media (talk show, qui show…) related waste management and uncontrolled open burning awareness is regularly achieving for general public.

The progress towards achieving the target under objective 3 was estimated at 80% by providing periodical training to provincial environmental departments and local authorities on controlling dump side, official informed to all private sectors on uncontrolled warning waste, applied 3 R principles at some provinces, schools waste separation, waste recovery, developed technical guideline for biomass in Industrial sector and developed technical guideline for biogas (husk rice) for agricultural sector (this made by MAFF). This achievement has been made through creation of integrated resource recovery center in two provinces of Battambang and Kampot.

The progress towards achieving the target under objective 4 was estimated at 70% by completion of an updating of inventory on Dioxin and furan in 2014 (It is not a comprehensive inventory of unintentionally produced POPs but it is an update inventory from 2004 with the same release sources for made in 2014). The progress towards achieving the target under objective 5 was estimated at 90% by completion of guidelines on best available techniques (BAT) and best environmental practice (BEP) to prioritized sources of unintentionally produced POPs in Khmer language and ongoing progress in translation into English. At the meantime, the implementation of this guideline has been undertaking by UNIDO cooperated with the Ministry of Industry and Handicraft.

2.2 POPs Regulated From 2009 (New POPs)

2.2.1 POPs Pesticides

2.2.1.1 Historical import, production, export and use of POPs pesticides

There were some unofficial sources reported that Cambodia had imported and used chemical pesticides since early years of 1950s and up to now Cambodia is still importing and using pesticides for modern agricultural techniques, agrochemical application and sustainable crop yields and avoidance of crop losses due to pests and diseases.

However, those pesticides imported and used were not found as of POPs pesticides contaminated. POPs pesticides awareness was started since 2006 during and after Cambodia formulated the NIP for implementation. Above resulted of no POPs pesticides came from, we built good awareness to the people and promoted Cambodian legislation to be developed and banned all kinds of import, production, export and use of POPs pesticides.

Years for entry into force of regulation of the banned POPs pesticides in Cambodia are listed in Table3. The two most important instruments are the Law on The Management of Pesticides and Fertilizers enacted in 2012 and the Sub-Decree on Standards and Management of Agricultural Materials approved in 1998.

The historical use of the old POPs pesticides was generally described in the 2006 implementation plan, and this should be referred to for a more detailed description. Focus in update implementation plan will be on the new POPs pesticides under the Convention based on this assessment and clear inventories.

Inventory of POPs Pesticides	Result in 2014
• **Production of POPs pesticides**	• No **production** and formulation of pesticides including POPs pesticides in the country(Prohibited by the law in 2012)
• **Import of POPs pesticides**	• No evidence regarding the import of all 15 POPs pesticides listed in the Stockholm Convention in Cambodia. These all prohibited for importation (Prohibited by the law in 2012)
• **Placing on the market and use of POPs pesticides**	• All 15 POPs pesticides currently prohibited for placing on the market and use in Cambodia. In Cambodia most of the POPs pesticides were used in the past as insecticides (Prohibited by the law in 2012)
• **Export of POPs pesticides**	• Cambodia does not produce or export chemicals; there is no evidence of any legal export activities with regards to any kind of pesticides including POPs pesticides (Prohibited by the law in 2012)

2.2.1.2 Stockpiles waste and disposal

Based on the POPs pesticides inventory report, there is no any evidence of available of POPs pesticides stockpiles waste and contaminated sites in Cambodia in recent year. However, there may be pesticides which expired or being phased out because of their high hazardous or being

banned or obsolete reasons. There is currently no facility for disposal of hazardous wastes in Cambodia, a solution should be found for the disposal of all obsolete pesticides stocks.

2.2.1.3 Programmes for monitoring

Based on the Law on the Management of Pesticides and Fertilizers 2012, the management of POPs pesticides is under the responsibility of the Ministry of Agriculture, Forestry and Fisheries(MAFF). Under the general competent Jurisdiction of the Ministry of Agriculture, Forestry and Fisheries, some monitoring programmes have been conducted since 1999 up to 2013.

Previous Monitoring Programme	Monitoring Results
• Cambodian Centre for Study and Development of Agriculture (CEDAC)	• Study on amount of pesticides use and no POPs pesticides found
• Drinking Water Quality Assessment in Cambodia, 2001, a survey on pesticide residues contaminated ground water (well water) was conducted by WHO in cooperation with the MRD	• No pesticides (including POPs pesticides) detected in any of the samples collected
• Integrated Pest Management Programme from 1993 to 2013 in 19 provinces/ Phnom Penh municipal	• Focused on food security and safety in Cambodia. No POPs pesticides found
• Pesticide Risk Reduction Project (PRRP) from 2007-2013 on hazards of chemical pesticides	• Educated farmers on hazards of chemical pesticide
Current Monitoring Programme	**Monitoring Results**
• No monitoring programme is undertaking	• Non Available

2.2.2 PCBs

2.2.2.1 Historical import, production, export and use of PCBs

Cambodia used PCBs for various products and equipment for technical applications. The first full inventory of PCBs consumption in Cambodia was made in 2004 under the Enabling Activities for the Development of a National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs). In this section, shows an overview of the historical consumption of PCBs in Cambodia.

Based on the PCBs inventory report in 2004, electricity was first introduced to Cambodia in 1906 by the Compagnie des Eauxet Electricité (CEE), Union d' Electricitéd'Indochine (UNEDI) and Compagnie Franco-Khmer d' Electricité (CFKE). CEE was responsible to supply the electricity to Phnom Penh and vicinities, while UNEDI operating throughout country except Battambang province, which was supplied by CFKE. In 1958, the Cambodian government purchased the CEE's and UNEDI's concession rights to form the Electricité Du Cambodge (EDC) to generate, transmit and distribute the electricity in Phnom Penh and provinces throughout Cambodia. During the war, EDC's facilities were destroyed. In 1979, general assessment of Cambodia's power supply facilities was heavily damaged by civil war. From that time, Cambodia has started its process of rehabilitation under support from the World Bank, ADB, Japan, USA and European Countries. At present, the electricity supply in Cambodia is fragmented into 24 isolated power systems centered in provincial towns and cities.

In the power systems, power transformers are devices that can increase or decrease the voltage level that are suitable to the customer's appliances and the capacitors are the devices that can accumulate and hold an electrical charge such reactive power compensator to improve the voltage stability in the power systems. Both power transformer and capacitor use dielectric material, usually a dielectric fluid which or may not contain PCBs. refer to the above consideration, up to present; Cambodia is just a country import those materials from abroad to meet the demand. In this connection, just focus on transformers, which have been imported to meet the demand only,

there are around 1600 power transformers, of which 1343 transformers were recorded. Among the recorded transformers, there were only 988 units that have been inspected and recorded by the task team to identify the present of PCBs concentration in dielectric fluid. Based on the conducted inventory January-April, 2004 and we were categorized below:

- Before 1970: mostly imported from France, Japan with the quantity of about 300, through EDC ordered,
- From 1970-1983: within this period, the power transformers mostly import from France, Japan, with the quantity of about 200,
- After 1983: through Cambodia-Soviet Union bilateral, multilateral cooperation with Eastern European countries and from France, South Korea, Thailand, Japan, Romania and Italy, it is estimation about 1,100 power transformers were imported during that period.

Inventory of PCBs	Result in 2014
• **Production of PCBs**	• No production in Cambodia
• **Import of PCBs**	• The imported dielectric fluids for transformers in Cambodia during the period before 1970 through several years after 1983. Based inventory 2004 some transformers are contained PCBs. • There are no data about import in Cambodia of dielectric fluids containing PCBs. • No importation of transformers contained PCBs since 2005 (Phased out).
• **Use of PCBs**	• 300 private companies are used maximum 10 transformers for each without confirmation of dielectric fluids contained PCBs.
• **Export of PCBs**	• No export in Cambodia

2.2.2.2 Stockpiles

The inventory report in 2004 stated that there were 274 units waiting for disposal are the only ones currently stored at the warehouses of Sambour and Toeuk Thla, belonging to EDC, which is currently no information on the amount of transformers storing. The Sambour warehouse is currently storing all type of transformers ranking from brand new one to the repaired, standby for use and waiting for disposal.

To date, it still observed that, transformers waiting for disposal have been sold by the owner for cost recovery and the scavengers can recycle the copper. The dielectric fluid generally has been sold to tailors for sewing machines as provides good lubricant oil, and to small handicrafts to be used as secondary fuel. However, there were no records, statistical data or information on the numbers of units that had been sold.

2.2.2.3 Programmes for monitoring

Most of monitoring programmes on PCBs made by the government of Cambodia is building capacity for officers to deal with PCBs issues and management and studying the status of PCBs substances affecting to the environment and human health. In order to support the monitoring programme, strengthen capacity of laboratory is a top priority. In Cambodia only MOE laboratory is able to analyze PCBs substance whether it contained in the products or in waste forms. Such analysis can provide both actual PCBs in concentrations and positive verification of PCBs presence. Only one monitoring project implemented during 2008-2009.

Previous Monitoring Programme	Monitoring Results
• Regional Capacity Building Program for Health Risk Management of Persistent Organic Pollutant (POPs) in South East Asia Project (2008-2009). Biota (Fish,	• Screening the maximum concentrations for PCDD/Fs and dioxin-like PCBs resulted in exceedance factors of 2.6 and 10.2, respectively (based on WHO 2006 toxicity equivalence factors). Because these exceedance factors are both

snails, crabs and prawns), non-biota (soil, mud and dust), and blood samples were collected and sent to Canada and Japan for analysis	greater than one, both PCDD/Fs and dioxin-like PCBs were considered contaminants of potential concern in those products and people. • Result from blood analysis expressed the present of PCB substances in human blood.
Current Monitoring Programme	**Monitoring Results**
• No monitoring programme is undertaking	• N/A

2.2.3 POP PBDEs in E-Waste

2.2.3.1 Historical import, production, export and use of POPPBDEs in E-Waste

The inventory report also mentioned that: As in many other countries, an exponential expansion has occurred in the telecommunications sector. While in 1998, only 0.74 percent of the population owned a telephone, in 2010 the figure had increased to 87 percent. The expansion happened most rapidly in the past five years, the number of telephones in use growing by 1521 percent between 2005 and 2010, and the telephone density doubling between 2009 and 2010. The expansion can be attributed to an exponential growth of mobile telephone in rural areas.

Mobile subscribers have also resulted in a significant expansion of the internet use that the number of subscribers increased from 8,000 in 2005 to 850,000 in the first quarter of 2011. This number suggests that the 2013 target of 620,000 has far been exceeded. There are currently 37 Internet Service Providers (ISPs) in Cambodia with 16 operating. The listed POPs contained in c-OctaBDE are 11% hexaBDE and 43% heptaBDE and that leads to 907.54kg hexaBDE and value of 3,547.67 kg heptaBDE in Cambodia.

Inventory of POP PBDEs in E-Waste	Result in 2014
• **Production of POP PBDEs**	• No production of POP PDBEs in E-Waste in Cambodia.
• **Import of POP PBDEs**	• No POP PBDEs imported E-Waste in Cambodia. Most of industrial products available in Cambodia are imported either as new and second hand materials.
• **Use of POP PBDEs**	• No POP PBDEs used E-Waste in Cambodia.
• **Export of POP PBDEs**	• No POP PBDEs E-Waste exported from Cambodia.

2.2.3.2 Stockpiles waste and contaminated sites

Up to now, Cambodia does not have a big scale recycling facilities and no stockpile for recyclable wastes including e-waste.

There is no specific facility for POP PBDEs containing waste. Most scrape wastes from WEEE that may contain POP PBDEs have been collected together with municipality wastes and sent to city dumpsites.

In addition to this, there is no data on domestic E-waste recycling facilities neither by location and amount and type of e-wastes generated. Therefore, it is difficult to identify hot spots that are contaminated by POP PBDEs. Nevertheless, e-waste recycling and dismantling facilities could be assumed to be POP PBDEs contaminated sites, if they would have been operating for a long period.

2.2.3.3 Programmes for monitoring

Cambodia has not yet established yet the monitoring programme or system for the specific exemption use of POP PBDEs, this based on the inventory reported in 2014. Current status and monitoring programme of POP PBDEs in E-Waste in Cambodia is summarized as table below:

Current Monitoring Programme	Monitoring Results
• No monitoring programme is undertaking	• N/A

2.2.4 POP PBDEs in Transport

2.2.4.1 Historical import, production, export and use of POP BPDEs in Transport

Based on the inventory report on POP PBDEs in transportation 2014, there is no data showed about the history of import, production, export and use of PBDEs in Cambodia. Cambodian industry is mainly based on small and medium enterprise (SME) where garment industry is well known sector followed by agro-industry and mineral products. Most of industrial products in Cambodia are imported both branch new and second hand materials.

Therefore, it can be assumed that there are no POP PBDEs imported or exported or used in Cambodia, except POP PBDEs contained in articles or other product like car seats, head and armrests.

The inventory report noticed that vehicles, cars, trucks, vans, and buses are considered containing POP PBDEs. Other mean of transportation vehicles like boats and airplanes should not be included in this inventory as their number is very limited in Cambodia. On the other hand, motorcycles are widespread in Cambodia but their seat life spans are not long and generally replaced by homemade seats. The imported materials for homemade seats are quite new products; where can be said contain no POP PBDEs.

This first inventory of the Cambodian transport sector shows a total amount of 377,098 vehicles (car/trucks/buses) have been imported and registered up to 2014, of which vehicles manufactured between 1975 and 2004 account for 328,526 car/trucks/buses. These vehicles contain approx. 17.237 tons of POPs PBDE in 58.595 tons of PUR foam. The listed POPs contained in the PUR foam are TetraBDE 1,379.02 kg and PentaBDE 9,997.91 kg.

Inventory of POP PBDEs in Transport Sector	Result in 2014
• **Production of POP PBDEs**	• No production of POP PDBEs in transport sector in Cambodia.
• **Import of POP PBDEs**	• No POP PBDEs imported in transport sector in Cambodia. POP PBDEs contained in articles like car seats, head and arm rests in cars.
• **Use of POP PBDEs**	• No POP PBDEs used in transport sector in Cambodia.
• **Export of POP PBDEs**	• No POP PBDEs in transport sector exported from Cambodia.

2.2.4.2 Stockpiles waste and contaminated sites

Cambodia has no practice in deregistration of cars and therefore we have no information on the number of cars entering the waste stream.

Based on Cambodia economic conditions, the old aged vehicles are not scrapped quickly but they are kept in use through many cycles of repairing. Then, at the end of life of the vehicle usable spare parts are used for other repairs and other parts with economic value have been sold as

scraped materials. Thus, it is hardly to estimate the “life span” of those vehicles and the number of vehicles that have become waste.

There is no specific facility for POP PBDEs containing waste. Most scrape wastes from care repairing garages or other car spare part facilities that may contain POP PBDEs have been collected together with municipality wastes and send to city dumpsite.

In addition to this, there is no data on car repairing garages neither by location and amount and type of wastes generated. Therefore, it is difficult to identify hot spot sites that contaminated by POP PBDEs. Nevertheless, car repairing garage and scrapping facilities can be assumed as POP PBDEs contaminated sites.

2.2.4.3 Programmes for monitoring

Current Monitoring Programme	Monitoring Results
• No monitoring programme is undertaking	• N/A

2.2.5 PFOS

2.2.5.1 Historical import, production, export and use of PFOS

Based on inventory workshop held on 20 January 2014, it was noticed that only PFOS associated with firefighting foam is suitable to undertake inventory because, Cambodia historically and economically between 1970 to 2000 had very limited activities related to the utilization of PFOS whether in pure chemical or products or it containing in article. On the other hand, the internal meeting between consultants for POPs inventories and concerned institutions that involved in POP inventories had concluded that Cambodia will undertake PFOS inventory in firefighting sector only, even this sector is noticed that may have PFOS in firefighting foam.

Inventory of PFOS in Firefighting	Result in 2014
• Production of PFOS	• PFOS derivatives have not been produced in Cambodia. All these substances described above are imported in finished products or end products
• Import of PFOS	• Fire-fighting foam was imported and it is unknown which contained PFOS. No PFOS compounds are registered as imported independently or in mixtures containing PFOS.
• Use of PFOS	• No PFOS directly used in other industrial sectors in Cambodia. Only the firefighting sector might have PFOS in firefighting foam.
• Export of PFOS	• No PFOS exported from Cambodia.

2.2.5.2 Stockpiles, waste and contaminated sites

Cambodia has no available data about stockpile, waste and contaminated sides of PFOS. However, based on the PFOS inventory report the firefighting foams distributed by provinces, 2014 as follow:

No	Province	Form (Litres)	Remark
1	Battambang	3,674.00	• Fluoroprotein Foam (FP) 70, Corda, Sabo
2	Siem Reap	13,085.00	• Film Foaming Fluoroprotein (FFFP) 3% and 6%
3	Preah Sihanouk	16,345.60	• FP 70, FFFP, P1, PO1
4	Prey Veng	100.00	• Aqueous film-forming foams (AFFF) 3%
5	Kampong Cham	800.00	• Film Foaming Fluoroprotein (FFFP)
6	Kandal	12,220.00	• Film Foaming Fluoroprotein (FFFP) (3%)

No	Province	Form (Litres)	Remark
7	Phnom Penh	24,060.00	• AFFF (3%) and (5%) and FFFP (6%)
8	Ratanakiri	1,325.00	• This number was given by police fire brigade of Ratanakiri province, where name of foam, its origin, and imported date are unknown as no labelling or documents.
	Total	**71,609.60**	

2.2.5.3 Programmes for monitoring

Currently, Cambodia has not yet established the monitoring programme on PFOS. Based on the inventory, we can make some conclusions as follows:

- No permitted use of PFOS has been registered in the country for other sectors such as decorative and non-decorative hard plating, for the photographic industry, dyes and lacquers, in the furniture and leather industry, in cleaning agents, car and floor polishes, cardboard packaging;
- No waste plastic was been identified which was generated from the dismantling of discarded EEE and ELV, containing PFOS. No samples were analysed in the country from plastic fractions from discarded EEE regarding PFOS content due to the fact that there have been no legal grounds for such analyses.
- No available data and sample were analysed specifically on fire-fighting foam containing PFOS and fire-fighting foam containing PFOS were not identified as waste which will be disposed of outside Cambodia due to there being no hazardous waste incineration facilities in Cambodia;
- Currently, there is no identification activity on alternatives options to PFOS in various applications in the country.

2.2.6 Unintentionally Produced POPs

2.2.6.1 Current legislation on unintentionally produced POPs

During the last two decades, a total reduction of the levels of PCDD/PCDF, PCB, HCB and PeCB in the environment and in humans was achieved through control over the industrial emission sources only. However, taking into account the persistency of these chemicals, it is expedient to continue the efforts for reduction of the anthropogenic emissions to the environment with the ultimate goal to minimize and finally eliminate them, where possible. Furthermore, the levels in food and feed should additionally be reduced in order to limit the exposure of humans.

No	Legislation/Regulation Title	Responsible Institution	Direct/Indirect Impacts
Recorded by prior to 2004			
1	The Law on Environmental Protection and Management, 1996	MOE	A part of the Law aims to protect and maintain the environmental quality from any kinds of pollution. It might be indirectly impact to POPs and chemicals management, including its wastes
2	Sub-Decree on Solid Waste Management, 1999	MOE	The Sub-Decree may directly involve the environmental sound management of industrial and hazardous wastes including POPs wastes, as mentioned in annexes
3	Sub-Decree on EIA Process, 1999	MOE	The Sub-Decree may indirectly involve in managing POPs chemicals and related residues due to its objectives aim at protecting and

			conserving the environment and natural resources.
4	Sub-Decree on Air Pollution and Noise Disturbance, 2000	MOE	It has a purpose to protect the environment quality and public health from air pollutants and noise pollution through monitoring, curb and mitigation activities
5	Guideline on Boosting the Carrying out of SSWM, 1999	MOE	It may directly involve the management of POPs wastes through industrial and hazardous waste management
6	Prakas on the Collection and Transportation of Industrial Solid Waste in PPM, 2002	MOE	It has not specified POPs waste, but its objective aim at managing industrial and hazardous waste as a whole.
7	Prakas on the Halting of Selling or Providing and Burning of Industrial Solid Waste, 2003	MOE	It focuses on the intercepting of the burning of industrial solid waste that causes high risks to environment and public health
8	Prakas on Solid Waste Management in Factories, Enterprises and Companies, 2003	MOE	-Ditto-
9	Joint Prakas of MOE and the Ministry of Interior (MOI) on Solid Waste Management in Cities and Provinces, 2003	MOI&MOE	It aims at managing solid wastes in cities and provinces in effective ways in order to ensure the public health protection, aesthetics, environmental quality, and biodiversity
Recorded in between 2004 – 2014			
10	Sub-Decree on Standards and Management of Agricultural Materials, 19981	MAFF	Some stipulations of the Sub-Decree may directly manage POPs pesticides, where these have been banned.
11	The Law on Water Resources Management in the Kingdom of Cambodia, 2007	MWRAM	Article 22 of the Law may indirectly impact to POPs and chemicals management, including its wastes.
12	Law on Land Traffics, 2007	MPWT	It may indirectly link to the transportation of POPs products and related residues, as stipulated in Article 53
13	Sub-Decree on the Establishment and Management of the Special Economic Zone, 2005	CDC	It is commonly indirectly linked to management of POPs products or POPs containing in articles within various activities of trades and other developments
14	Sub-Decree on Classification and Labelling Chemicals, 2009	MOE and relevant ministries	The Sub-Decree commonly addresses the management of chemicals, hazardous substances including their wastes. It is recognized to directly impact to POPs management
15	Prakas on Waste Management from Healthcare Services in the Kingdom of Cambodia, 2008	MOH&MOE	It is indirectly involved POPs wastes' management, which might be generated by health sector
16	The Law on The Management of Pesticides and Fertilizers, 2012	MAFF	The Law is considered to directly impact to the management of POPs pesticides and relevant chemicals, but its specific stipulation has not highlighted.
Draft legislations/regulation			
17	Draft Law on Chemicals Management	MOE and key relevant government	The Law is considered to directly impact to the management of POPs products and relevant chemicals, including their wastes

[1]*The Sub-decree was unvalued (or null) in implementing on ground, while the Law on the Management of Pesticides and Fertilizers has adopted and enter into force in 2012*

		agencies	
18	Draft Law on Environmental Pollution Control	MOE	The Law is considered to directly impact to the management of POPs related wastes
19	Draft Sub-Decree on E-waste Management	MOE	It is considered to directly involve the management POP related wastes

2.2.6.2 Unintentionally Released POPs Inventory

Based on the update inventory report 2014, by using the 2013 emission factors as guided by the late version Toolkit for Identify and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs, the total estimation of PCDD/PCDF's generation and release from the ten Source Group in the Table below into the environment via by air, land, residue and other potential routes in 2013 is higher than the release of PCDD/PCDF in 2013. It is about 290.278g TEQ/a in 2013 and102g TEQ/a in 2003.

Category	Source Categories	Year Update Inventory 2003					
		Annual Releases (g TEQ/a)					
		Air	Water	Land	Product	Residues	Sub-Total
1	Waste incineration	41.53	0.00	0.00	0.00	0.41	**41.9**
2	Ferrous and non-ferrous metal production	0.30	0.00	0.00	0.00	0.56	**0.87**
3	Power generation and heating	8.44	0.00	0.00	0.00	0.00	**8.44**
4	Production of mineral products	0.10	0.00	0.00	0.029	0.014	**0.14**
5	Transport	0.12	0.00	0.00	0.00	0.00	**0.12**
6	Uncontrolled combustion processes	24.95	0.00	3.95	0.00	0.00	**28.9**
7	Production of chemicals and consumer goods	0	0	0	0	0	**0**
8	Miscellaneous	3.77	0.00	0.00	0.00	0.12	**3.89**
9	Disposal/Landfill	0.00	0.2	0.00	0.00	17.38	**17.58**
10	Potential Hot-Spots	0	0	0	0	0	**0**
Total		**79.20**	**0,20**	**3.95**	**0.029**	**18.50**	**102**

Total release on Unintentionally Produced POPs in 2013 record and calculated by the inventory team as table below:

Category	Source Categories	Year Update Inventory 2013					
		Annual Releases (g TEQ/a)					
		Air	Water	Land	Product	Residues	Sub-Total
1	Waste incineration	60.66	0.00	0.00	0.00	0.31	**60.97**
2	Ferrous and non-ferrous metal production	0.30	0.00	0.00	0.00	0.159	**0.46**
3	Power generation and heating	0.747	0.00	0.00	0.00	0.249	**0.99**
4	Production of mineral products	0.132	0.00	0.00	0.021	0.007	**0.16**
5	Transport	0.048	0.00	0.00	0.00	0.00	**0.048**
6	Uncontrolled combustion	214.26	0.00	9.04	0.00	0.00	**223.3**

	processes						
7	Production of chemicals and consumer goods	0	0	0	0	0	**0**
8	Miscellaneous	1.50	0.00	0.00	0.00	0.013	**1.51**
9	Disposal/Landfill		0.028		0.003	2.81	**2.84**
10	Potential Hot-Spots	0	0	0	0	0	**0**
Total		**277.446**	**0.028**	**9.04**	**0.024**	**3.548**	**290.278**

In according with the above figure, we remarkably found the release of PCDD/PCDF to air in 2013 is higher than 2003, or the release to air is much higher than other routes such as: water, land, products and residues. A brief description is given below.

1) The total release of PCDD/PCDF in 2013 from waste incineration is 60.97 g TEQ/a, and it is higher than 2003 which generated and released only 41.90g TEQ/a. Reasonably, although in 2003 some municipal wastes were burnt mostly for steam processing in garment factories with higher amounts (lower emission factor) than medical waste incineration (or two sources of municipal and medicinal waste incinerations), but only the source of medical waste incineration has identified in 2013 (higher emission factor).

2) In the context of estimating amounts of PCDD/PCDF which is released from the Ferrous and non-ferrous metal production sources in 2003, although in minor amount, but it is higher around four times more than 2013 or 0.87 g TEQ/a (2003) and 0.46 g TEQ/a (2013), although few criteria sources are differed.

3) The estimation of PCDD/PCDF releasing from the power generation and heating source in 2013 is estimated to be lesser around eight times than 2003. The 2013 PCDD/PCDF releasing are 0.99 g TEQ/a to air and residues, while 2003 were 8.44 g TEQ/a released to air. This is the big variation of PCDD/PCDF release between 2003 and 2013.

4) The total release of PCDD/PCDF in 2003 and 2013 is closely similar, of which 0.14 g TEQ/a in 2003, and in 2013 is 0.16 g TEQ/a, although few generating sources of PCDD/PCDF are identified to be different.

5) The total release of PCDD/PCDF from the transport sector in 2013 is lower than 2003 around two and half times, of which in the figures are 0.048 g TEQ/a and 0.12 g TEQ/a accordingly. Few reasons have identified during the assessment of the release of PCDD/PCDF as summarized below.

   - 2-stroke engines and 4-stroke engines were found in using in 2003, while the survey team did not find in relation to the use of 2-stroke engine in 2013, except the 4-stroke engines.
   - Fuel gas is being introduced and consumed by some taxies and families' cars (different models) which sharing the reduction of fuel oils consumption.

6) As an estimation of uncontrolled combustion processes, the total release of PCDD/PCDF in 2013 (223.30 g TEQ/a) – that is higher than 2003 (28.90g TEQ/a) nearly eight times. The remarked generating and release sources of large amount of PCDD/PCDF are uncontrolled waste combustion at dumpsites and households as well. Some main reasons of the high release of PCDD/PCDF in 2013 are briefly as follows:

   - Amounts of generated wastes being increased in according to the population increase and high demands of daily consumptions.

- Scope of waste burning at households and dumpsite is still ranked between medium to high due to the lacking of sanitation landfills, and although some existing regulations have been entered into forces.

7) The survey team can neither identify nor find the release of PCDD/PCDF from the production of chemicals and consumer goods in terms of both 2003 and 2013, while the existing processes of industrial products including wastewater treatment are not in the classification of the Toolkit.

8) It is estimated that PCDD/PCDF release to air and residues from Miscellaneous sources in 2013 (1.51 g TEQ/a) is lower around two times to 2003 (3.89 g TEQ/a), due to the survey team found the use of cigarettes be decreased in according to: (i) the consumers' awareness toward health maintenance and precaution; (ii) national legislation towards smoking forbiddance being entered into force; and (iii) domestic manual products found slightly at some rural and remote areas only. Additionally crematory activities (class b1 and b2) in 2013 are less than 2003 (class b1) for two times.

9) The total release of PCDD/PCDF in 2013 is 2.84 g TEQ/a, while in 2003 was 17.58 g TEQ/a. That is the big variation. Although most sources of PCDD/PCDF generating and release in the Disposal and landfill in 2003 and 2013 are similar, but there is a big different amount of mixed wastes (class a2) are found in 2013 less than 2003 around 6 times.

10) In the context of Potential Hot-Spots, the survey team, although in 2003 and 2013, commonly identified merely the hot-spot in relation to PCB contaminated site, where there is still studied and no quantitative information can be entered class f. While evidences to other sources of dredging of sediments and contaminated flood plains, and timber manufacture and treatment sites could not identify.

2.2.6.3 Unintentionally Released POPs Monitoring Programme

Cambodia not yet set up any monitoring programmes for control of the release of unintentionally produced POPs. However, a commitment has been made to fulfill the requirement of the Stockholm Convention in the reduction of unintentionally POPs released to the environment and its impact on human health. Based on the inventory report 2014 on unintentionally released POPs it was shown that, Cambodia implemented some major activities for reducing the release of unintentionally produced POPs through promotion of the stakeholders awareness raising programme including:

- Awareness raising of unintentional produced POPs, especially PCDD and PCDF, on its release and management including health prevention, is done under the project implementation framework only.
- Chemical wastes management including unintentional produced POPs with limited financial mobilization to support the activities under the MOE strategic plan 2009-2013.
- Informal education to the target vulnerable people are persons who work at/in release sources of unintentional produced POPs, people who live surround these sources, waste pickers, waste collectors, etc.
- Officials of line agencies at both national and sub-national levels got some awareness through attending education workshops or seminars, or receiving educational materials from the previous project implementations and today project.
- National Programme for Sub-National Democratic Development 2010 – 2019 (NP-SNDD).
- Capacity building and improvement of government officials and the public awareness raising towards the minimization of negative impacts resulting from unintentionally produced POPs.

- Capacity building for assessing the release scope of unintentional produced POP to the environment.

2.2.7 Activities by NGOs for Managing POPs

Based on the review, the civil societies involved in chemicals management including POPs are NGO Forum on Cambodia, Centre d'Etude et de Développement Agricole Cambodgien (CEDAC), Agricultural Extension, Sre Khmer Organization, Resource Development International, CSARO, Cambodian Education and Waste Management Organization, Mlup Baitong and COMPED. All of them much focus on reducing and stop use of pesticides, boosting the implementation of 3R initiative at community level; introducing and composting by using organic wastes which taken from markets; and solid and liquid waste management and sanitation; etc.

All the partners shared very limited the common goals of POPs management and are in broad unofficial agreement that the POPs management in Cambodia is government mandate and not consistent with their overall policies on chemical management and related issues.

Those partners are only shared limited contribution such as the data collection methods on chemicals and no POPs information to be shared, information related general chemicals, and attended in training courses and consultation workshops conducted by the line Ministries 'projects or/and comments provided by the partners on such technical document shared by the project.

All the partners have no financial sharing for implementing activities on POPs chemicals even they had been dealing with pesticides, industrial chemicals and other chemicals in Cambodia.

The involvement of civil society, NGOs and the stakeholders was a policy response to achieving the management's goals and keeping the participation of partners, academy, NGOs and beneficiaries is evidence of its continuing relevance to their own policies on chemicals related issues and future support for the relevant project sustainability.

2.2.8 Technical Infrastructure for POPs Assessment, Measurements, Analyses, and Research and Development

There is no progress regarding the technical infrastructure for analyzing chemicals including POPs chemicals and chemical products. No either evidence nor any report has been producing or disseminating on strengthening capacity for laboratory, upgrading equipment and other facilities and human resource development in Cambodia. However, based on the review reported by the relevant representative from line ministries during the POPs priority setting workshop in October 22-24, 2014 at Cambodia-Korea Cooperation Center (CKCC), Royal University of Phnom Penh showed as follow:

Table No 7: Laboratories Infrastructure for POPs Analysis

No	Name/Location	Name of the Tested Products	Name of the Tested POPs Characteristics
1	National Agricultural Laboratory	*Quality of chemical fertilizers and pesticides*	Non Available
2	General Department of CAMCONTROL Laboratory	*Food, chemicals and consumers products analysis*	Non Available
3	Ministry of Environment Laboratory	*Environmental quality (water, soil, air and biological sample) and all kinds of wastes*	Non Available
4	Industrial Laboratory Center of Cambodia (ILCC)	*Quality of industrial-handicraft domestic products and waste water analysis. Final industrial products regarding the industrial standards*	Non Available

5	National Laboratory for Drug Quality Analysis (Pharmaceutical Production)	*Quality control of drug and food imported, domestic & trafficking to ensure people good health*	Non Available
6	Ministry of Water Resource and Meteorology Laboratory	*Control Public Water and Soil Quality*	Non Available
7	Department of Chemical engineering and food technology, ITC (UPP)	*Food, chemical analysis, waste water treatment, air pollution control*	Non Available

2.2.9 Particularly Exposed Population Groups

According to the outputs of the specific assessment of POPs impact on human health and the environment report, major potential exposure sources include such as: (i) areas surrounding dumpsites and waste incinerations including residential areas where domestic wastes and/or agricultural residues are burnt, and power generating and heating plants; (ii) areas surrounding occupational operation, for instance, ferrous and non-ferrous metal production and production of mineral products, including industrial area; (iii) areas locate along and closed to roads; (iv) dredging and land filling areas by drainage/channel sludge and/or sediments; (v) areas closed to and crematorium area; (vi) storage areas of waste oils/lubricants (including PCBs containing oil); and (vii) areas closed to and/or composting area, and other areas and equipment contaminated with POPs pesticides, PCBs workplace and former stockpiles, POP PBDEs in e-waste storage and in transport sector and PFOS in firefighting.

Specifically for population group exposed included famers, employees and workers have not been provided them any training course yet. The serious issues for the public regarding POPs hazard awareness. This is very extremely dangerous that exposed general public have nothing in their brain about POPs hazard. Many cases to be assessed that people bought the food, equipment and other old cars mostly its facilities contaminated POPs. In general, exposed general public have no education to be provided. Very limited information has been disseminated for public awareness. The POPs hazard and perception has been promoted through mass media for public understanding and raising awareness during the implementation of NIP project only a small scope being conducted.

2.2.10 Systems for Assessment and Inclusion of New Substances under the Convention

Cambodia has no system for assessment and inclusion of new substances under the convention yet.

2.2.11 Existing Chemical Management Systems and Inclusion of POPs

It is recognized that there is no clearly assigned duties for one ministry/institution to responsible for managing chemicals and POPs. However, Ministry of Environment seems to be a coordination agency for managing chemicals and POPs while other relevant ministries are responsible for the importation and the use without harmonizing management of all chemicals.

The review resulted, the chemicals management including POPs management framework in Cambodia is applying the three management systems those are:

1) System for registration, evaluation, authorization and restriction for use,
2) System for classification, labelling and packaging of substances and mixtures, and
3) System for monitoring on the market products contaminated chemicals banned.

2.2.12 Review Results In Financing of POPs Management Infrastructure

It was considered likely that effective POPs management would difficultly be achieved in the country due to the lack of good funding mechanism and difficulty access to financial resources, there is not clear that operational funding was secured as yet for the long term. Based on review result, seem to be unclear and does not appear fully dependent for its day-to-day operations on POPs management funding example poor co-funding in cash from the government for POPs management since 2006 up to the present.

There does not seem to have been any other source of operational funding in place once the project expected to be ended in November 2015 except the source from outside STAR funding from GEF-6 that Cambodia is limited ability access to this resource. On the other hand, NGOs had been dealing with POPs management in Cambodia, e.g. COMPED, SCARO, Mlup Baitong…etc. are working on boosting the implementation of 3R initiative at community level; introducing and composting by using organic wastes which taken from markets; and solid and liquid waste management and sanitation; etc., doesn't have any big amount of fund for implementing activities. That is why it is hard to find co-financing from NGOs partner". Also the current legislation, specifically the environmental law and other relevant legislations does not make provision for the separate management of funds obtained from the private sector however it has provision for registration/authorization of chemicals and licensing fees.

3. CURRENT PROBLEMS AND ITS IMPACT SURROUNDING POPs

3.1 Assessment Result of POPs Impact on Environment

3.1.1 Summary POP pesticides impact on the environment

In Cambodia, based on the inventory report and assessment of POPs impact on the environmental report 2014, there are no amount of chlorinated pesticides, including DDT/DDE, HCB, lindane and chlordane, included in the ongoing monitoring of pollutants in the environment and in emissions from point sources. In general there is decreasing or no concentrations of POPs pesticides.

The concentration of POPs pesticides substances in mussels and fish in marine fishery products has been detected in 2004 (based on inventory report 2004), and up to now there has not been any testing for POPs pesticides contaminated(based on update POPs inventory report 2014)

Also, according to the program on Drinking Water Quality Assessment in Cambodia, 2001, a survey on pesticide residues contaminated ground water(well water) was conducted by the WHO in cooperation with the Ministry of Rural Development which showed that there were no pesticides (including POPs pesticides) detected in any of the samples collected.

As the current survey result, it showed that no POPs Pesticides used for agricultural purposes and no organization has ability to conduct a monitoring survey or program on pesticides contamination on crops, soil, water and air as well, in Cambodia. Therefore, there is no evidence of POPs Pesticides contamination in the environment.

3.1.2 Summary PCBs impact on the environment

The update PCBs inventory report 2014 showed that, based on the Regional Capacity Building Program for Health Risk Management of Persistent Organic Pollutants (POPs) in South East Asia Project (2008-2009), had been conducted site assessment at POPs' hot spots, where PCBs storage warehouse of Sambour was selected to take environmental samples for PCBs analysis. Number of biota (fish, snails, crabs and prawns), non-biota (soil, mud and dust), and blood samples were collected and sent to Canada and Japan for analysis. All environment samples were pre-screened by Hiyoshi Corporation in Japan using CALUX. Upon obtaining the preliminary

results from Hiyoshi on October 4, 2008, the Hatfield Project Team selected 32 environmental samples and all 14 blood samples for PCBs analysis by AXYS in Canada using high resolution Gas Chromatography-Mass Spectrometry (GCMS). The final batch of analytical results was obtained from AXYS on December 30, 2008.

3.1.3 Summary POP PBDEs in e-waste impact on the environment

The inventory report 2014 on POP PBDEs in E-Waste impact on the environment does not provide any results of their survey data. Only one interested recommendation raised by consultant on Monitoring on EEE repairing or dismantling facilities or scrap yards shall be regularly undertaken to ensure that existing legislations are in compliance. Impossible to find levels POP PBDEs in E-Waste impact on the environment. In general assumption, based on new inventory conducted by the inventory team in 2014 is also no monitoring programme has been conducting for assessment of the POP PBDEs in E-Waste impact on the environment and it may not be a big concern for the environment that impact by POP PBDEs in E-Wastes.

3.1.4 Summary POP PBDEs in transport impact on the environment

In Cambodia, the most commonly used PBDEs have been found in car seats, head and arm rests but not in sediments, mussels, and fish. A full study does not exist to show levels of POP PBDEs in car seats, head, arm and waste disposal sites. The environmental criteria for PBDEs have not yet been established within the context of environmental protection as well as the human health risk prevention. PBDEs have never been included in any another study or monitoring program yet.

3.1.5 Summary PFOS in firefighting impact on the environment

Cambodia not yet conducted any survey for PFOS and related compounds in or in the environment. Only the first inventory on PFOS in firefighting was conducted by the national inventory team from April to July 2014.

Due to the lack of technical survey data for analysis of PFOS, there is no idea to determine the levels of PFOS contaminated in both environment and in the human health. The inventory report assumed that levels of PFOS even maybe low and no concerns were raised about human health.

The Ministry of Environment as well as the line Ministries has never undertaken monitoring for PFOS in the environment. A range of organic contaminants have not been determined in environment alongside without support. Future monitoring programme should include the flame retardants PBDEs as well as PFOS. Without the Environment Monitoring Programme, Cambodia will not be able to undertake contaminant analyses (PCBs, PBDEs, PFOS…) in Cambodia's environment.

3.1.6 Assessment of Unintentionally Released POPs Impact on the Environment

There is uncertainty with some of the inventory information particularly in relation to releases to the environment such as land, air and water and impact on human health. There is limited information in relation to dioxin and furan levels found in the Cambodia environment such as water and soil however the low levels being found as table above is an indicator of low level contamination in the environment.

Based on the Inventory Report on Unintentionally Produced POPs in Cambodia 2014 did not indicate figure or scope of negative impacts to human health and the environment, because there was not enough data/information including less capability to identify such negative impacts from unintentionally produced POPs, while Cambodia does not have LAB for monitoring and analyzing POPs. The Comparison of Total Release on Unintentionally Produced POPs between 2003 and 2013, among the potential routes of unintentionally produced POPs, air is the route getting most

PCDD/PCDF for 277.71g TEQ/a (or equal 95.46%). The release by land is taken about 9.043g TEQ/a (or 3.25%) and it is ranked at second level after the potential route's air. The residues released is taken about 4.02g TEQ/a (or 1.44%) and it is ranked at third level after the potential route's land. On the other hand, the two lowest receiving routes are products and water – these got around 0.058 g TEQ/a, and 0.024 g TEQ/a respectively.

3.2 Assessment Result of POPs Impact on Human Health

3.2.1 Summary POPs pesticides in impact on human health

Related to the impact on human health, the MAFF has evaluated that pesticides pose a hazard to human health, animal, wildlife and pose environmental contamination. Although this has not been verified by laboratory tests, villagers in Cambodia have reported livestock deaths that they attributed to pesticide contamination and humans are part of food chain after livestock deaths. One study reported 56 such deaths in 2007 among 25 villages surveyed across 7 provinces. In Cambodia there is very limited information on pesticides-related health incidents and associated costs for treatment and income lost since no systematic data collection on these issues has taken place. However, there are a few study reports produced by the National IPM program (MAFF 2000) and by some NGOs and donors (CEDAC, Pesticide Forum, DANIDA and FAO). The findings of these reports can serve to illustrate the current magnitude of health impacts of pesticide use in Cambodia.

There is still not enough data for the identification of pesticides (POPs pesticides) impacts on human health and the environment, but some priority concerns or risks have been observed by governmental institutions. No reports about POP pesticides contaminated have been detected in fruit, vegetables, fish, sea food and food of animal origin to be indicated in this update POPs pesticides inventory.

3.2.2 Summary PCBs in impact on human health

Based on the update PCBs inventory report 2014, we do not have any new data regarding the PCBs impact on human health. Old information and data extracted from inventory report 2004 were used in this assessment of PCBs impact on human health.

In 2008, as we know, the MOE/Hatfield Consultants' Final Risk Assessment Report for Sambour EDC Warehouse[2]describes the analysis of the blood of warehouse workers and other EDC Training Centre employees. There are 14 blood samples which were analyzed by AXYS using US EPA Method 1668A. Results were reported for all 209 congeners, including total PCBs, PCBs homologues, and PCBs TEQ (based on the WHO 2006 criteria). Lipids were analyzed and reported for all blood samples. Results from blood analysis expressed the presence of PCBs substances in human blood; even some samples indicated little variation on concentration. Some samples showed higher concentrations than other samples, up to 10 times higher than other blood samples. Information on this individual indicates that the expert, he used to train other employees on how to re-condition old transformers; and also regularly staff brought transformer oils home for burning or to be used to lubricate a sewing marching. The other two samples exhibited total PCBs concentration 1.8 and three times greater than the next highest concentration, respectively. These two samples corresponded to the senior warehouse managers and a janitor at the ware house. In general, concerning PCBs impact on the environment and on the human health, Cambodia conducted a health risk assessment project in 2008, in which environmental and blood samples were collected and analyzed find PCBs substances in soil, sediment, biota (snail, crabs, and

[2] MOE/Hatfield Consultant, *2008-2009: Regional Capacity Building Program for Health Risk Management of Persistent Organic Pollutants (POPs) in South East Asia.*

fishes) and human blood. Samples analysis in Canada and Japan confirmed the escape of PCBs substances from broken transformers to and polluting nearby environment. Through food chain aspect, PCBs finally have been entered into animals and humans via intake.

3.2.3 Summary POP PBDEs in e-waste impact on human health

Currently, analyses of PBDEs in health are not part of the Cambodia monitoring programme for organic pollutants in industrial processes, recycling stream, waste management and hotspot sites. Unfortunately, based on the inventory of POP PBDEs inventory report 2014 Cambodia has no monitoring programme in place and no available data regarding the impact on human health.

3.2.4 Summary POP PBDEs in transport impact on human health

Human exposure to POPs can be through air, water, soil, food, dermal contact and occupational exposure. There is no specific facility working on POP PBDEs waste related activities. Most scrap wastes from car repair garages or other car spare parts facilities that may contain POP PBDEs have been collected together with municipality wastes and sent to city dumpsite as mentioned above.

In addition to this, there is no data on car repair garages neither by location and amount and type of wastes generated. Therefore, it is hard to identify hot spot sites with contaminated by POP PBDEs. Nevertheless, car repair garages and scrap facilities can be assumed as POP PBDEs contaminated sites. There are no results from inventory available in 2014. PBDEs in transportation impact on human health will also be included in a new investigation plan led by The Ministry of Public Works and Transport in cooperation with the Ministry of Environment and the Ministry of Health, planned to begin in early 2016.

3.2.5 Summary PFOS in firefighting impact on human health

As mentioned in the inventory report 2014, it is clear that only firefighting foam that is likely to be containing PFOS or PFOS related substances, and they are subject for this inventory. The inventory report also assumed that there is neither contaminate site nor hot spot sites related to PFOS or PFOS related substances, even at foam storage facilities. Based on field observations, it was noticed that foams are well stored in containers and kept in a safe place.

3.2.6 Assessment of Unintentionally Released POPs Impact on Human Health

Same as the 1st inventory report 2004, the report 2014commonly assessed vulnerable people and/or areas engaging the sources of generating unintentionally produced POPs based on visible cases and its estimation in accordance with the UNEP Toolkit. For instance, the most potential vulnerable people (direct impact) to unintentionally produced POPs would be waste pickers, workers who work at dumping sites and dwellers living in surrounding areas, or those who lived closed to or on land-fills mixed with PCDD/PCDF, or those who worked in area or engaged activities of unintentionally produced POPs. For those were exposed to less potential impacts – those consumed foods (e.g. vegetable, fish…etc.) taken from urban sewage or wastewater canal, pound/wetland which comprised PCDD/PCDF substances.

In Cambodia the potential exposed population based on the second inventory reported in 2014, people mostly faced serious health impacts through directly and/or indirectly contacted/absorbed are as follows:

- Waste pickers at waste generating sources and dumpsites, as well as those dwellers who are living in, surrounding and/or beneath these sources, including domestic animals.
- Workers who are working at occupation areas which generated unintentionally produced POPs (for example, industrial and handicraft sector, composting center, etc.) without

thinking about health safety precaution, e.g. using health safety facilities; surrounding dwellers.

- People who are living at or close to dredging drainages/channels of urban sewers, and those who are living on land filled by sludge or sediment taken from these dredging processes.
- People who work at or live close to power generating and heating plants including crematorium areas.
- It is considered people and workers who live or work at transformer warehouses, where it is concerned on the leakage of PCB oil and other lubricants.

Cambodia has no monitoring programme on controlling dioxins in food and non-available estimated of human exposure to dioxins can result from the consumption of dioxin-contaminated food. Dioxins can occur mainly in foodstuffs of animal origin with a high fat content as they can accumulate in fatty tissues including meat, fish, eggs and milk. The Ministry of Environment should do in conjunction with Ministry of Commerce, local authorities and civil society to undertake regular monitoring of dioxins and furans in various food groups. Through monitoring, Cambodia could indicate levels of dioxin contamination and at concentrations below limits for set out in the future food legislation

Dioxins, furans are currently being proposed for inclusion in the list of priority hazardous substances that are subject to environmental quality standards under the development of Cambodia Environmental Pollution Control Law or the Environmental Code in the future.

SECTION 3: THE CAMBODIA'S LEGISLATIVE AND POLICY FRAMEWORK ON POPs

1. INTERNATIONAL COMMITMENT

1.1 Stockholm Convention

The Stockholm Convention was adopted in May 2001 and entered into force on 17 May 2004. The objective of this Convention is to protect human health and the environment from chemicals (POPs) that remain intact in the environment for long periods, become widely distributed geographically and accumulate in the fatty tissue of humans and wildlife. Cambodia became a party to it in May 2007. The Ministry of Environment is a National Leading Agency to this Convention.

It promotes global action on an initial cluster of twelve POP substances, with an overall objective to protect human health and the environment from POPs and requires Parties to take measures to eliminate or reduce the release of POPs into the environment. As of August 2012, the Convention had been adopted by 178 parties. At the fourth and fifth meetings of the Conference of the Parties in 2009 and 2011, respectively, a total of 10 new substances or substance groups were added to the Convention. An important part of this updating of implementation plan relates to these new substances. According to the Stockholm Convention, the parties are required to ban and/or take the legal and administrative steps necessary to eliminate production, import/exports and use of substances listed in Annex A of the Convention which today comprises 22 POPs. The parties are also required to limit production and use of the substances listed in Annex B of the Convention. Furthermore, Parties are required to take measures to reduce, and if feasible, eliminate releases from unintentional formation of the substance groups listed in Annex C of the Convention (please note that the Danish version of the Convention applies the designation "unintentional production"). Releases of unintentionally formed POPs listed in Annex C are continuously to be minimized with the ultimate goal of completely preventing releases, where feasible.

The Stockholm Convention also foresees identification and safe management of stockpiles containing or consisting of POPs. Waste consisting of containing or contaminated by POPs should be disposed of in such a way that the POPs contents are destroyed or irreversibly transformed so that they do not exhibit the characteristics of POPs. Where destruction or irreversible transformation does not represent the environmentally preferable option or POPs content is low, waste should be disposed of in an environmentally sound manner. Disposal operations that may lead to recovery, recycling or direct reuse of POPs are explicitly forbidden. When transporting waste, relevant international regulations, standards and guidelines, including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, must be taken into consideration. The Convention stipulates a number of general obligations, including that Parties are to regularly update the implementation plan in accordance with the decisions adopted by the Conference of the Parties. This action plan is an important part of update the NIP.

Furthermore, where appropriate, Parties must cooperate directly or through global, regional and sub-regional organizations. They must consult their national stakeholders, including women's groups and groups involved in the health of children, in order to facilitate the development, implementation and update of their implementation plans.

Finally, Parties must endeavor to utilize and establish the means to integrate national implementation plans for persistent organic pollutants in their sustainable strategies where appropriate.

1.2 Basel Convention

The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their disposal was adopted on 22 March 1989. The Kingdom of Cambodia had already ratified the Basel Convention since 2 March 2001. The Ministry of Environment is a National Leading Agency to this Convention. This is the Convention that was developed under the auspices of UNEP in response to the growing worldwide awareness of the problem of international traffic in hazardous wastes. It regulates the trans-boundary movement of hazardous wastes and other wastes and obligates the Parties to ensure that such waste is managed in an environmentally sound manner especially during the disposal process. The “environmentally sound management” is defied under Article 2.8.

1.3 Rotterdam Convention

The Convention on Prior Informed Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, strives to reduce health and environmental hazards posed by chemicals and pesticides. It obliges a party that plans to export a chemical that is either banned or severely restricted for use within its territory, to inform the importing party that such an export will take place. It requires clear labelling of chemicals to be exported and it requires an exporting party to ensure that an up to date materials safety data sheet (MSDS) is sent to the importer when exporting chemicals that are to be used for occupational purposes.

There are a total of 47 chemicals listed in Annex III, 33 are pesticides (including 4 severely hazardous pesticides formulations) and 14 industrial chemicals. The Kingdom of Cambodia has ratified and became a 151 party member of the said Convention in May 2013.The Ministry of Agriculture, Forestry and Fisheries is a National Designated Authority to the Convention.

1.4 The World Summit on Sustainable Development

The World Summit on Sustainable Development (WSSD), held in September 2002 in Johannesburg, agreed an Intergovernmental Plan of Implementation setting out what needs to be done to achieve global sustainable development. The plan of implementation included a number of chemicals related targets, including the implementation of existing chemicals conventions and the development of a Strategic Approach to International Chemicals Management (SAICM).

1.5 The Strategic Approach to International Chemicals Management

The International Conference on Chemicals Management held in February 2006 finalized and adopted the Strategic Approach to International Chemicals Management.

SAICM is a global framework to improve chemicals management. It is a voluntary agreement supported by a high-level declaration and contains a toolkit of policies and activities aimed at raising the standards of chemicals management, particularly in developing countries. SAICM pulls together international bodies with responsibility for chemicals management and supports and enhances the global treaties that cover chemicals and hazardous waste. Further details can be found athttp://www.chem.unep.ch/saicm/

2. NATIONAL LEGAL FRAMEWORK RELATED POPs MANAGEMENT

Based on the legislations reviewed report in March 2014 by the local consultant in the national context both public and private sectors are pending some new legislations being submitted to the Government for approval, or they want to see at least the drafted relevant legislation to manage POPs by responsible government agency in closed cooperation with line institutions. See review results are summarized legislations in the table below:

Table No 8: Legislation related to POPs and related residues management in Cambodia

No.	Legislation's Title	Year of Approval	Responsible Institution	Review Resulted
Constitution				
1	The Constitution of the Kingdom of Cambodia	1993	All	It indirect involves to POPs and chemical management, but it aims to protect and conserve the environment and natural resources as a whole.
Relevant Laws				
2	The Law on Environmental Protection and Management	1996	MOE	A part of the Law aims to protect and maintain the environmental quality from any kinds of pollution. It might be indirectly impact to POPs and chemicals management, including its wastes.
3	Law on the Management of Quality and Safety of Products and Service	2000	MOC	Although the Law is not specifically addressed on POP products' management, but it has enough authority to control Quality and Safety of Products and Service in according with the existing national and international legislations.
4	The Law on Administration of Factory and Handicraft	2006 and amendment law in 2014	MIH[3]	Some articles of the Law may directly involve the management of POP products, although these are not specifically stipulating such POP products.
5	The Law on Water Resources Management in the Kingdom of Cambodia	2007	MWRAM	Article 22 of the Law may indirectly impact to POPs and chemicals management, including its wastes.
6	Law on Land Traffics	2007	MPWT	It may indirectly link to the transportation of POP products and related residues, as stipulated in Article 53.
7	The Law on The Management of Pesticides and Fertilizers	2012	MAFF	The Law is considered to directly impact to the management of POPs pesticides and relevant chemicals, but its specific stipulation has not highlighted.
Relevant Sub-Decrees				
8	Sub-Decree on Standards and Management of Agricultural Materials	1998	MAFF	Some stipulations of the Sub-Decree may directly manage POPs pesticides, where these have been banned.
9	Sub-Decree on Water Pollution Control	1999	MOE	The Sub-Decree may directly involve the environmental sound management of chemical wastes including POP wastes, as mentioned in annexes.
10	Sub-Decree on Solid Waste Management	1999	MOE	The Sub-Decree may directly involve the environmental sound management of industrial and

[3] *The Ministry of Mine and Energy has divided in two Ministries, namely, "Ministry of Industry and Handicraft", and "Ministry of Mine and Energy"*

				hazardous wastes including POP wastes, as mentioned in annexes.
11	Sub-Decree on EIA Process	1999	MOE	The Sub-Decree may indirectly involve in managing POP chemicals and related residues due to its objectives aim at protecting and conserving the environment and natural resources.
12	Sub-Decree on the organization and functioning of the Ministry of Industry and Handicrafts	2013	MIH	The Sub-Decree may indirectly involve in setting up the standard and labelling the chemical substance used in industrial sector as stipulated in point No. 8 of article 19.
13	Sub-Decree on the Implementation of the Amendment to the Law on Investment of the Kingdom of Cambodia	2005	CDC	The Sub-Decree is evaluated to be indirectly linked to the management of POP products or POP containing in articles.
14	Sub-Decree on the Establishment and Management of the Special Economic Zone	2005	CDC	It is commonly indirectly linked to management of POP products or POP containing in articles within various activities of trades and other developments.
15	Sub-decree 21 on the Facilitation of Trade Through Risk Management	2006	MOC	The Sub-Decree may indirectly involve with the control of POP products, through control the import-export of chemicals, chemical substances at check-points.
16	Sub-Decree on Classification and Labelling Chemicals	2009	MOE and relevant ministries	The Sub-Decree commonly addresses the management of chemicals, hazardous substances including their wastes. It is recognized to directly impact to POP management too.
Relevant Regulations				
17	Guideline on Urging the Carrying out of Sub-Decree on Solid Waste Management, MOE 1999	1999	MOE	It may directly involve the management of POP wastes through industrial and hazardous waste management.
18	Prakas on Industrial Waste Collection and Transportation in Phnom Penh Municipality	2002	MOE	It has not specified POP waste, but its objective aim at managing industrial and hazardous waste as a whole.
19	Prakas on List of Pesticides in the Kingdom of Cambodia	2012	MAFF	It commonly involve the management of POPs pesticides, where these are banned nationally
20	Announcement on the Halting of Industrial Waste Selling, Providing and Burning	2003	MOE	It has not specified POP waste, but its objective aim at managing industrial and hazardous waste as a whole.
21	Prakas on Solid Waste Management in Factories, Enterprises and Companies	2003	MOE	– Ditto –
22	The Joint Declaration MOI and MOE on “Solid Wastes and Litter Management in	2003	MOI and MOE	It is not clearly mentioned the management of POP wastes.

	Cambodia"			
23	Prakas on Waste Management from Healthcare Services in the Kingdom of Cambodia	2008	MOH&MOE	It is indirectly involved POP wastes' management, which might be generated by health sector.
24	Prakas on Procedure and Requirement for Pesticides Registration	2012	MAFF	It is not clearly engaged the management of POPs.
25	Prakas on List of Pesticides in the Kingdom of Cambodia	2012	MAFF	It is directly engaged to the management of POPs pesticides management.
26	Prakas on Procedure of Management of Pesticides in Trade	2013	MAFF	– Ditto –
	Prakas on Organization and Functioning of Department of Standards Regulatory	2014	MIH	It may indirectly involve in POPs management, which is relevant to chemical substances management and usage standards for industrial sector.
Relevant Draft Law/Sub-Decree				
24	Draft Law on Chemicals Management	In discussing with line ministries	MOE and relevant key ministries	The Law is considered to directly impact to the management of POP products and relevant chemicals, including their wastes.
25	Draft Law on Environmental Pollution Control	In discussing with line ministries	MOE	The Law is considered to directly impact to the management of POP related wastes.
26	Draft Sub-Decree on Water Quality Management	Being submitted to the Council Ministers for approval	MWRAM	It is indirectly addressed to POP wastes management.
27	Draft Sub-Decree on E-waste Management	Under the drafting process	MOE	It is considered to directly involve the management POP related wastes.

3. NATIONAL ENVIRONMENTAL POLICY AND INSTITUTIONAL FRAMEWORKS

3.1 Environmental Policy

In terms of related policies implementation for environmental management in the country, Cambodia produced many policies through revisions of and elaboration on the public administration structure and legal framework of the country. These include new revisions of laws, the creation of new ministries and the formulation of various inter-ministerial committees. Some existing policies possible to meet environmental protection and natural resource management listed below:

1. The Policy of Land Use and Management, the Council of Minister, June 03, 1989.
2. Land Policy, August 2001.
3. Policy Paper on Social Concessions in the Kingdom of Cambodia, 19 March 2002
4. National Policy on Forest Sector, July 26, 2002.
5. National Policy on People August 15, 2003.
6. National Policy on Water Resources, January 16, 2003
7. National Poverty Reduction Strategy (NPRS) 2003-2005.

8. National Policy on Fisheries Sector, June 15, 2005.
9. Cambodia Millennium Development Goals (CMDGs).
10. Policy on Registration of and Right to Use Lands of Indigenous Communities in Cambodia, Approved by the Council of Ministers at plenary session on April 24, 2009
11. National Policy on Green Growth, March 01, 2013.
12. National Policy on Housing, 2014.
13. Rectangular Strategy Phase III (20014-2018).
14. National Strategy Development Plan 2014-2018.
15. National Strategic Plan on Climate Change 2014-2023.

Development strategy of RGC, as reflected in the Rectangular Strategy (RS) Phase 3, draws on the National Strategy Development Plan (NSDP) 2014-2018. NSDP is a comprehensive development plan focusing on promoting growth, environmental protection, social stability, health care, human rights, regional integration, and reducing poverty.

NSDP is based on sectoral plan formulated by different governmental ministries and elaborates the poverty reduction agenda, providing a framework for support by international development partners and a comprehensive set of monitoring indicators towards the achievement of the CMDGs outcomes.

3.2 Strategy for Sustainable Development and Management of Natural Resources

Sustainable Development defined as “Development that meets the needs of the present without compromising the ability of future generation to meet their own needs”. Principle 1 of the Rio Declaration states that: “human beings are at the center of concerns of sustainable development. They are entitled to a healthy and productive life in harmony with nature”.

Sustainable development comprises three objectives: (i) economic development; (ii) social equity; and (iii) environmental conservation. Economic development refers to the wellbeing of the people and eradication of poverty. Social equity includes: access to basic needs such as health, education, human security and rights, gender equity, and distribution of benefits and access to resources across the society. Environmental conservation concerns with conservation of natural resources and minimizing impacts on physical and biological resources.

Cambodian’s national sustainable development strategy is based on comprehensive approach implicating with social, economic and environmental priorities. The strategy defines as a long-term vision and foundation of values and specifies the policy instruments, tools and processes that are necessary to implement the change process. It also contains concrete objectives and measures for the achievement of sustainable development in various core areas. The shift will call for broad participation by various players and will build on public consultation. In achieving the national sustainable development goals, Cambodia has set the following strategic areas since 2009 for National Sustainable Development for Cambodia:

Strategic Area 1: People Wellbeing and Social Development

- ❑ Strategy 1: Poverty Alleviating and Food Security
- ❑ Strategy 2: Good Health
- ❑ Strategy 3: Well Educated People
- ❑ Strategy 4: Gender Equality
- ❑ Strategy 5: Zero Victims of Landmines and UXO

Strategic Area 2: Sustainability of the Natural Resources and Environment

- ❑ Strategy 1: Environment for Development
- ❑ Strategy 2: Environmental Problems in Cambodia

- ❑ Strategy 3: Environmental Quality Objectives
- ❑ Strategy 4: Indicators for Environmental Sustainability
- ❑ Strategy 5: Strategic Measures for the Environment

Strategic Area 3: Sustainable Economic Sectors and Infrastructure

- ❑ Strategy 1: Sustainable Land Use and Agriculture
- ❑ Strategy 2: Sustainable Forestry
- ❑ Strategy 3: Sustainable Water Resource Management
- ❑ Strategy 4: Sustainable Fishery
- ❑ Strategy 5: Sustainable Mining
- ❑ Strategy 6: Private Sector and Sustainable Business Development
- ❑ Strategy 7: Sustainable Tourism
- ❑ Strategy 8: Sustainable Transportation
- ❑ Strategy 9: Sustainable Energy
- ❑ Strategy 10: Sustainable Water Supply and Sanitation
- ❑ Strategy 11: Solid Waste Management

For sustainable management of natural resources, the Royal Government of the Fifth Legislature will reinforce and broaden the management of natural resources to strike a "balance between development and conservation", in particular, increase the contribution of natural resources to the development of agriculture sector by ensuring:

(1) Green cover, forest and wildlife conservation;
(2) The sustainability of fisheries resources; and
(3) The sustainability of the ecosystem, so that the quality of land and sustainability of water sources could be improved by focusing on the protection of biodiversity, wetlands and coastal areas.

To achieve this objective, the Royal Government will implement a comprehensive and cross cutting approach, aimed at improving the effectiveness and equity in the exploitation of natural resources, by:

(1) Clearly determining the ownership of natural resources;
(2) Developing an appropriate incentive scheme for the conservation of natural resources and empowering the sub-national government, communities and individuals to participate in their conservation by focusing on training, information sharing as well as strengthening social capital, and institutional accountability and transparency; and
(3) Stepping up cooperation with concerned stakeholders under the framework of green growth and climate change. RGC will place priority on:

    a) Further managing forest and wildlife resources in a sustainable and equitable manner, in accordance with the "National Forest Program 2010-2029", in particular through better law enforcement and governance, demarcation, classification and registration of forest, effective management and exploitation of state and private forests, implementation of measures for improving the livelihoods of and promoting participation from forest-dependent communities, enhancement of management and effectiveness of conservation measures, reduction of deforestation and degradation of forests, intensified tree planting and forest rehabilitation, strengthening the conservation of wildlife and wildlife sanctuaries, development of institutional and human capacity, and promotion of research studies and their dissemination.

    b) Further strengthening the management and conservation of fishery resources in a sustainable manner in line with the "Strategic Planning Framework for Fisheries Sector

2010-2019" and the "Declaration on the National Policy for Fisheries Sector", especially through the suppression of all violations of laws, rules and regulations related to fisheries including tightened control of fishing gears and fishing period, elimination of overfishing, strengthening fishing communities' capacity for the management, use and conservation of fisheries resources, protection of biodiversity and aquatic-animal habitats, control of freshwater and seawater quality through pollution minimization, protection and replanting of flooded forests and mangroves, demarcation of flooded forest and fisheries conservation zones, development of institutional and human capacity, and preparing research studies and their dissemination.

c) Intensifying the implementation of necessary measures to ensure the sustainability of the ecosystem, aimed at ensuring the quality of soil, and surface and underground water for serving the agriculture sector and the livelihood of Cambodian people by promoting the preparation and effective implementation of policies and regulations, as well as related action plans and programs for the management of protected natural areas such as national parks, wildlife sanctuaries, protected landscape areas, multiple use areas, wetlands, biodiversity conservation areas, natural heritage conservation areas, and maritime parks, and in particular, strengthening the implementation of "Law on the Environmental Protection and the Management of Natural Resources", "Law on Protected Natural Areas" and "Guideline on the Development of Coastal Areas in the Kingdom of Cambodia".

d) Stepping up cooperation with relevant development stakeholders under the framework of the "National Policy on Green Development" and the "National Strategic Plan on Green Development 2013-2030" through the development of regulatory frameworks and mechanisms for carbon trading, strengthening the capability, preparation and implementation of climate change adaptation measures, assessment of the scope of the use of environmental financing mechanisms including payment for environmental services and environmental fund, strengthening the management of protected natural areas including protection of biodiversity, rain forests, and wetland areas; and environment and ecosystem monitoring and control mechanism at both national and sub-national levels.

3.3 Roles and Responsibilities of Central Government

In addition to a need for an existence of effective legal framework, equally strong and effective institutional arrangements with proper vertical and horizontal linkages and proper coordination among all the players is one of the prerequisites for POPs management. The previous NIP reinforced this element by recognizing that good governance within each Ministry and at the national level is essential for sustainable development and further that at domestic levels, sound environmental, social and economic policies responsive to the needs of the people, the rule of law, anti-corruption measures, gender equality and an enabling environment for investment are the basis for sustainable development.

An organizational structure for sound management of chemicals including POPs, at a minimum calls for the establishment of as follow:

- Clear mandates at the 3 levels of national administration (Policy, Management and Enforcement levels).
- Inter-agency coordination mechanism, Board, technical committee/s.
- Clear allocation of public and private sectors responsibilities, where companies are at least responsible for generation and dissemination of information on chemicals properties, hazards, risks and safe handling of chemicals including POPs.

This section describes and analyses the mandates and programmes of different ministries, agencies, and other governmental institutions responsible for, and concerned with, various aspects of chemicals including POPs management. Chemicals including POPs management need the participation of the various governmental institutions based on roles and responsibilities determined by the Royal Government of Cambodia. Some of those governmental ministries very specifically responsible for monitoring and managing the stockpiles and clean up contaminated areas and make inventory of POPs substances. They also need very close cooperation with the local governments (sub-national level) and strongly support from the laboratory.

Governmental institutions participate in chemicals including POPs management according to their role and responsibility regulated by governmental ordinances. The governmental institutions fulfil their mandates in managing chemicals by building safety into the chemicals production processes (if available), chemicals trade, and by ensuring the prevention and/or mitigation of impacts on people's health, especially user health, and protect the environment and biodiversity.

The governmental ministries involved in chemical management process include:

1. Ministry of Agriculture Forestry and Fisheries,
2. Ministry of Mines and Energy,
3. Ministry of Environment,
4. Ministry of Public Work and Transport.
5. Ministry of Interior (Department of Small Arms and Explosives and Fire Fighting),
6. Ministry of Commerce (General Department of CAMCONTROL),
7. Ministry of Economic and Finance (General Department of Customs and Excise),
8. Ministry of Industry and Handicraft, and
9. Ministry of Health.

Ministry roles and responsibilities in managing POPs and controls over the stages of chemical's life cycle including is illustrated in below:

Table No 9: Responsibilities of Government Institutions in Management of POPs

GOVERNMENTAL INSTITUTIONS	POPs (Initial and New Listed)						Stages of Chemicals Life-Cycle Including POPs							
	POPs Pesticides	PCBs	PBDEs in E-Waste	PBDEs in Transport	PFOS in Fire Fighting	Unintentionally Produced POPs	Importation	Production	Storage	Transport	Distribution/ Marketing	Use/Handling	Emergencies	Disposal
Directly Managing POPs														
Ministry of Agriculture Forestry and Fisheries (MAFF)	x						x	x	x	x	x	x	x	x
Ministry of Mines and Energy (MME)		x					x	x	x			x	x	x
Ministry of Environment (MOE)			x			x	x	x	x	x	x	x	x	x
Ministry of Public Works and Transport (MPWT)				x										
Ministry of Interior (MOI)					x		x	x	x	x	x	x	x	x
Indirectly Managing POPs														

Ministry of Commerce (MOC)							x				x			
Ministry of Economic and Finance (MEF)							x							
Ministry of Industry and Handicraft (MIH)							x	x	x			x		
Ministry of Health (MOH)							x	x	x	x	x	x	x	x

The various governmental institutions described above have difference roles and responsibilities for managing chemicals determined by the Royal Government of Cambodia. Summary role and responsibilities of those governmental institutions are as follows:

1) MINISTRY OF AGRICULTURE FORESTRY AND FISHERIES

Related to chemicals management, the Ministry of Agriculture, Forestry, and Fisheries has large responsibilities for the management of agricultural materials including the three main sectors of chemical fertilizers, pesticides including POPs pesticides, and veterinary drugs through controlling import and use. The Ministry has obligations to develop agricultural materials, management policy and legal frameworks, and promote public awareness in the safe use of agricultural materials in order to improve agricultural productivity, food safety, food security, and public welfare.

2) MINISTRY OF MINES AND ENERGY

The Ministry of Mines and Energy is responsible for promoting development of mineral exploration and exploitation activities, and hydropower development and electricity supply. Most importantly, the Ministry has the obligation to create the development of legislation, policy, and planning related to mineral management and energy development and management aspects including transformers contaminated POPs PCB management for both public and private sectors.

3) MINISTRY OF ENVIRONMENT

The Ministry of Environment cooperates with other governmental institutions, national and international organizations, non-governmental organizations, and private sectors responsible for monitoring environmental quality (water, soil, and air), controlling environmental pollutants release, and participates in collecting, compiling, and managing data related to toxic and hazardous chemicals, and managing all kinds of waste in terms of a safe environment.

4) MINISTRY OF PUBLIC WORK AND TRANSPORT

The Ministry of Public Works and Transport shall have the following duties and obligations:

- to manage and develop the national policy on general public construction sectors by preparing principles, and laws and coordinating with other institutions to develop the country;
- to improve, maintain, and manage the infrastructures such as roads, bridges, ports, railways, water ways, and state buildings;
- to develop regulations related to the management of infrastructures of roads, ports, railways, and waterways;
- to develop regulations and manage all road transportations, railways and waterways;
- to participate and jointly develop laws, rules and regulations relating to constructions;
- to improve other various buildings as assigned by the Royal Government; and
- to cooperate with the State Secretariat of Civil Aviation concerning any aeronautical construction.

In term of legal and technical responsibility, the Ministry of Public Works and Transport will involve in managing POPs PFOS in all aspects through strongly cooperation with line Ministries.

5) MINISTRY OF INTERIOR (DEPARTMENT OF SMALL ARMS AND EXPLOSIVE AND FIRE FIGHTING)

Relative to the managing PFOS, the Department of Ammunition and Explosive Ordinance Management and Fire Fighting of the General Directorate of Police Department of the Ministry of Interior is responsible for gathering information and management nationwide.

6) MINISTRY OF COMMERCE (GENERAL DEPARTMENT OF CAMCONTROL)

Related to chemicals management, the Ministry of Commerce through the department of CAMCONTROL has the role and responsibility in controlling the quality and quantity of imported and exported goods and carrying out the repression of fraud related to product quality except for pharmaceutical products, medical equipment, and cosmetics.

7) MINISTRY OF ECONOMIC AND FINANCE (GENERAL DEPARTMENT OF CUSTOMAND EXCISE)

Related to the role and responsibility of the Ministry of Economic and Finance in managing chemicals, the Department of Customs and Excise is the Ministry's agent in managing import-export regulated goods; to carry out prevention measures and confiscation of goods smuggled; control, monitor, and manage import-export regulated goods; address passenger's goods, foreign currency, valuable gem stones, jewels, cultural heritage, packages, and parcel postage in all kinds of transportation means.

8) MINISTRY OF INDUSTRY AND HANDICRAFT

The Ministry of Industry and Handicraft is responsible for promoting development of industrial activities and handicraft for both national and sub-national level and industrial chemicals production and use in terms of national industrial chemicals management. This Ministry also plays the important role to promote development and small and medium enterprises and handicraft, and industrial technological development. Most importantly, the Ministry has the obligation to create the development of legislation, policy, and planning related to industrial and handicraft aspects including industrial chemical management including POPs.

9) MINISTRY OF HEALTH

Related to chemicals management, the Ministry of Health is responsible for developing overall health policy direction, regulation and legislation based on the governmental policy goals to improve health, managing the systems of pharmaceutical production, business and distribution of medical and paramedical equipment to all private and public units, and examining and following-up of food safety.

SECTION 4: STRATEGY AND ACTION PLAN

1. OBJECTIVES

A. OVERALL OBJECTIVE:

The overall objective is reduction of the risk for the human health and the environment from the harmful effect of POPs.

B. SPECIFIC NATIONAL OBJECTIVES:

1. *Strengthen institutional capacity and improve public awareness on obsolete pesticides including POPs pesticides.*
2. *Strengthen laboratory capacity to support periodic POPs pesticides monitoring.*
3. *Build capacity of government officials and enhance participation of private sector for managing PCBs.*
4. *Improve management and monitoring measure to manage stockpile and waste contained PCBs.*
5. *Take effective measure for reduction of the release of unintentionally produced PCDD/PCDF.*
6. *Develop legal frameworks/measures and effectiveness enforcement of POP PBDEs in E-Waste and in Transport Sector.*
7. *Build capacity and promote awareness of POP PBDEs in E-Waste and in Transport Sector to the officials and the public.*
8. *Strengthen the management and applying monitoring measure of POP PBDEs in E-Waste and in Transport Sector.*
9. *Minimize the use of PFOS and take counter measure to manage waste contaminated PFOS based on environmental principles.*

2. NATIONAL PRIORITIES FOR MANAGING POPs

For the attainment of the strategic goal and the operative objectives of the updating of NIP POPs management, national priorities have been set through prioritization workshop in from 22-24 October, 2014. The key priorities of national importance for the management of POPs are prioritized according to the importance of the issues. The following 11 priorities of national importance have been set:

1. *No provision on management of POPs in existing legislations;*
2. *Public information (awareness campaign, social media…);*
3. *Poor POPs research, development and monitoring;*
4. *Unclear measure and lack of technical capacity for management stockpile and waste;*
5. *Knowledge and awareness is limited among government officials;*
6. *Financial resource mechanism for effective managing POPs;*
7. *Lack of mechanism for full law enforcement in place;*
8. *No data on transformer in use of private sector;*
9. *Database, (importation);*
10. *Registration and deregistration system for transport sector; and*
11. *Capacity of government officials at sub-national level is limited for POPs management*

3. NATIONAL STRATEGY FOR MANAGING POPs

The strategy for the management of POPs based on the set objectives and priorities includes:

1. *Application of an integrated approach in the resolution of the issues with the coordinating role of MOE through active involvement of the ministries and institutions responsible for the policy related to the management of POPs.*
2. *Use of diverse and effective measures for implementation and support of the planned activities legislation and control, information and training, economic measures, use of the currently existing structures.*
3. *Monitoring of the environment and the health.*
4. *Prioritization of the activities which may affect positively the health of the population.*
5. *Engagement of NGOs in the process of information of the community regarding the effects of the new POPs on the human health and the environment.*
6. *Provision of public access to information on POPs via the Internet site of MOE.*
7. *Coordination of the activities for the management of POPs through cooperation in the application of the Stockholm, Rotterdam and Basel Conventions*.

4. ADDITIONAL STRATEGIES TO IMPLEMENT THE NIP

Based on gap analysis report for smooth future implementation of the national implementation plan on POPs, some additional strategies proposed as follows:

4.1 Strategy 1: Framework Law on POPs Management

1. There should be a framework law which is specific to chemicals management including POPs which shall be comprehensive, coherent and transparent and shall clearly spell out the roles and mandates of the stakeholders (public authorities, private entities, community, academy, industry, suppliers, importers, manufacturers, producers, distributors and users of the chemicals)…etc.
2. For instance, private entities' responsibilities should have the responsibility of performing the main tasks required by chemicals including POPs risk management whilst public authorities would have regulation responsibility ensuring that the private entities perform their responsibilities. Seller and/or chemicals users' responsibilities will also have to be spelt out e.g. obtaining of data.
3. This chemical management law will not only spell out the roles and responsibilities as mentioned, but will have all the elements that are necessary for sound management of chemicals including POPs as well.
4. These include all instruments governing sound management of chemicals including POPs comprehensive inventories, classification and labelling, bans and restrictions, registration or authorization of chemicals, licensing, inspections, record keeping and reporting, enforcement etc.
5. Perhaps this could be done by improving the Draft Chemical Management Law 2010 to incorporate these suggestions.

4.2 Strategy 2: Improve the Existing Institutional and Structural Mechanisms

1. Opening up access to meet the production of annual national report on policies, legal framework, activities and plans for implementation of the update NIP;
2. Develop communication system on NGO networks, and donors community working in the field of POPs related issues to promote effective management;
3. Solicit relevant project ideas and proposals from relevant groups in accordance with the guidelines developed by the Royal Government of Cambodia;
4. Designate a staff member to be the focal point for all donors related matters including relations with donor agencies;
5. Participate in the development of all new or revised guidelines and materials pertaining to the involvement of community groups, NGOs and other stakeholders in the project cycle; propose additional national measures that may be needed to achieve objectives;
6. Design and carry out, at Cambodia and project level, country-specific activities to

implement and/or supplement new guidelines for implementation of the update NIP;
7. Regular reporting on the status of POPs management to the NCC; and
8. Monitoring and flexibility on the NIP after first year implementation and full review and update of the NIP in every 5 years (2019).

4.3 Strategy 3: Coordination

1. The NIP implementation cannot MOE alone achieve the overall goal in reduction of the risk for the human health and the environment from the harmful effect of POPs, shall create a coordination mechanism or design an entity to be a primary authority whose mandate shall be supervision and management of POPs.
2. Perhaps MOE is an authority that should also be given and can run its affairs without interference from government or any other party related with POPs management
3. The authority will be responsible for keeping an inventory of all chemicals including POPs as well as the list of all importers of chemical substances.
4. Again, the framework law will articulate coordination mechanisms at all levels e.g. (i) inter sectoral levels for activities related to inspections systems, health and environment surveillance, reporting as well as keeping track of impacts on chemicals. (ii) Multi-stakeholders level, which will include non-governmental organizations and is meant for consultative purposes related to POPs management scheme.

4.4 Strategy 4: Enforcement

1. Use of tools for compliance promotion (communication, training, awareness raising) should be provided for, to complement the sanction system that is commonly used where violations have occurred.
2. Use of incentives such as tax rebates, subsidies and other economic incentives so as to encourage a positive behavior of compliance with the law should as appropriate also be stipulated by the regulations.
3. Funds should be committed to ensure availability of infrastructure, laboratories, storage facilities etc. As necessary the law should prescribe the sharing of resources especially among the public entities so as to save costs.
4. All chemical imports should require licensing. Importers should be pre-registered. In addition, they should be requested to provide technical and safety data information before hand as a precondition for registration/licensing.
5. The laws should apply a "polluter pays principle" i.e. any company that pollutes the environment must not only be liable to pay fines, but they should also be responsible for the clean-up costs.
6. The laws should stipulate that companies' leaders are also held liable in their personal capacities for any transgressions committed by their companies.
7. The responsible authority should employ its own inspectors, which should be sufficiently trained in the inspection of POPs. Such inspectors will be placed at different locations across the country, including ports of entry. Their primary responsibility will be to inspect goods and check compliance of importers, exporters and distributors of chemical substances.

4.5 Strategy 5: Improve the Participatory Mechanisms

1. Communicate and build on good examples of NGOs, private sector, public interest groups, and stakeholders' involvement in POPs management;
2. Review and assess current donors regulations and procedures bearing on participation by NGOs private sector, public interest groups, and stakeholders in donors projects with a view to (1) identifying the constraints placed on their participation by existing regulations

and (2) determining what modifications are needed to expand the range of options for, and greatly simplify, such participation;
3. Explore, assess and communicate possible options for new NGO, private sector, public interest groups, and stakeholders services arrangements under national execution projects executed fully or in part by the government institutions or/and other donors in Cambodia;
4. Support the use of NGOs private sector, public interest groups, and stakeholders as executing agencies by participating in the proposed project of whether NGOs should be given, executing agency responsibilities and plays role in extension work.
5. Initiate discussions between the government and concerned donor agencies of refined or new modalities and approaches for facilitating NGO and stakeholders' participation in future donor projects on POPs reduction and elimination.
6. Devise new models, within the framework of existing guidelines, for involving NGOs and stakeholders effectively in POPs management process.

4.6 Strategy 6: Improve Existing Human Mechanism

1. Identify and assess the capacity-building needs of both national and provincial governmental officers, private groups, NGOs and stakeholders involved in any aspect of the NIP implementation;
2. Develop in-country rosters of governmental institutions, NGOs, research and academic institutions, training institutions and other local bodies capable of providing capacity-building assistance to community groups, and public on POPs;
3. Assess necessary external resources to meet the relevant capacity-building needs of Cambodia participating in donors' activities;
4. Assess the commitment of particular intermediary governmental institutions, NGOs to strengthen and empower relevant local communities; support capacity-building for these groups (as well as their own capacity-building activities at community level on understanding POPs related issues and impact); and
5. Identify a Cambodian officer (who may be the donor focal point or office information officer) to be responsible for maintaining documentation on donor agencies, handling media relations, responding to inquiries from NGOs or the public, and related matters to the POPs.

4.7 Strategy 7: Improve Existing Financial Mechanism

1. Strengthen efforts to inform donor-country embassies and missions about Cambodia projects and proposal and other relevant in-country activities;
2. Involve representatives of the bilateral in national briefings and round tables on technical and financial assistance in Cambodia. Explore possible opportunities for in-country collaboration between donors' projects and Cambodia National Portfolio Formulation Exercise, e.g., the GEF-6 (2014-2018) fund for POPs management, and related activities by bilateral aid agencies;
3. Organize initiative meeting involving donor agencies, private sector to consider strategies for developing private sector partnerships in POPs management;
4. Organize meetings with relevant industry groups, e.g., the Industrial Association, local private companies for chemicals import, on how to develop private sector partnerships in POPs management programs and projects;
5. In cooperation with media, develop a roster of responsible companies working in areas relevant to the POPs thematic areas, including companies that might form partnerships with environmental groups, industrial groups...for technology transfers or other purposes and multinational corporations operating in Cambodia;

6. Develop relationships, and exchange information, with NGOs and other groups engaged in monitoring corporate environmentally POPs management practices; seek their help in identifying potential corporate partners;
7. Promote the allocation of the government fund for NIP implementation;
8. Promote join implementation of the plan with donor's fund and with NGOs or/and private sector;
9. Develop relationships with donors governments and bilateral aid agencies; and
10. Strengthen relationships with private sector companies and association to raising fund.

4.8 Strategy 8: Develop and Implement Communication Strategy

1. Identify national and local "target audiences" for POPs management information, including the local media; consult with representatives from the different target groups to determine the kinds of information they need locally to publicize, support or carry out POPs management activities;
2. Communicate findings and recommendations to the Cambodia technical working group on POPs management communications strategy;
3. Develop national and local mailing lists of individuals in the different target audiences who should be informed about POPs management; and
4. Organize national briefings and press conferences on POPs management activities for general or target audiences.

5. PROPOSED ACTIONS TO REDUCE OR ELIMINATE THE RELEASE OF POPs

5.1 Actions to reduce or eliminate the release of POPs Pesticides

Based on the identified situation of pesticides use and management including POPs pesticides in Cambodia, the following actions to reduce or eliminate the release of POPs Pesticides:

1. Strengthen existing pesticide regulation enforcement.
2. Involve all national stakeholders (governmental and non-governmental, private and public) in the various issues related to pesticides management and use.
3. Conduct a scientific monitoring study on pesticide contamination on crop, food, soil, water and air.
4. Upgrade the capacity building for pesticide contamination analysis in crop, food, soil, and water.
5. Continue and expand awareness raising on pesticides including POPs pesticides toxicity and hazards for related bodies (e.g. training workshops for government staff who work with pesticides management, pollution control and import/export control, dealers and the end-users).
6. Establish a networking and communication system with both national and international level links regarding pesticides and POPs pesticides information exchange.

5.2 Actions to reduce or eliminate the release of PCBs

A number of actions are made for effectively implement the Stockholm Convention to eliminate PCBs substances in electrical appliances include:

1. **Capacity building**. The capacity building of government officials and other stakeholders should be provided and strengthened in order to assist them to effectively perform their duties especially for the implementation of national and international regulations related to sound chemicals management. Knowledge on safeguards at work and personal protective equipment should be provided.

2. **Import only PCBs-free equipment**. Understanding the provisions for eliminating or phasing-out transformers contaminated with PCBs, Cambodia will permit importing only for new types of transformers, which applies for both public and private electrical supplying entities. . Any electrical equipment and associate applicants should be inspected and analyzed for non-PCBs substances before being allowed to import to Cambodia for use.
3. **Development of PCBs substance management regulation**. Regulation and/or guidelines on the management of PCBs substance use and disposal including contaminated materials should be developed and applied. Concerned ministries, institutions, and stakeholders should be carefully prepared for such regulations/guidelines.
4. **Scaling up controlling transformers being use by private entities is recommended**. It is recognized that rural electrification program operating by private investment has not mandated yet to control PCBs transformers and PCBs dielectric fluid as well as no requirement to those companies to report their transformers. Such requirement include the request to import only non-PCB transformers, analysis for non-PCBs dielectric fluid before put into transformers, and reporting all matters related to transformers life cycle use and disposal,
5. **Cooperation among institution and stakeholder**s. Close cooperation and collaboration is required between governmental institutions, the public, private sector and other stakeholders for sound chemicals management related to electrical purposes and information should be freely shared among them,
6. **Keep in use the existing transformers (if any)**. As Cambodia has an economy in transition and knowledge and capacity for the sound management of chemicals is still developing, it is necessary to keep all transformers in use whether they are PCBs-contaminated or PCBs assumed until the end of their lives (up until 2025)if they are still in use by private companies. In cases where transformers are broken before the year 2025, no further repairs will be made for transformers produced before 1983 and other transformers known to be contaminated with PCBs. Safe and sound environmental management of such transformers should be paid significant attention.
7. **Strengthening laboratories**. Public laboratories should be strengthened regarding both technical and human resources in order to be able to monitor and analyze for banned chemicals,
8. **Storing the existing equipment in a safe place**. It is recommended that old transformers are stored in good condition and safe places regardless of whether such equipment is contaminated with PCBs substances. Analysis for PCBs transformers should be carried out to segregate those that are contaminated with PCBs and those that are PCBs-free for further planning and action. In addition, workshop areas should have temporary storage facilities to keep PCBs-contaminated dielectric fluid and PCBs-contaminated materials separate from other items and sensitive areas.
9. **Aid assistance**. Cambodia would like to seek international assistance regarding both technical and financial support for the decommissioning of old transformers that are contaminated with PCBs.
10. **Control and monitoring activities**. Due to the finding of some transformers contaminated with PCB substances even they were produced after 1983 and used dielectric fluid (ONAN) which was stated as non-PCBs fluid, it is strongly recommended to undertake regular monitoring of the dielectric fluid of both public and private transformers. In addition, the control of importing transformers and electrical units should be considered.

5.3 Actions to reduce or eliminate the release of POP PBDEs in E-Waste

As POP PBDEs is not covered by neither specific neither legislation nor institution is mandated to responsible for safe use or handling of its products and articles nor wastes containing PBEDs, thus

there are number of suggested actions to reduce or eliminate the release of POP PBDEs in E-Waste as follows:

1. Legislation: The legislation that could address the need for further prevention of the release of PBDEs into the environment could be a ministerial declaration or a circular. There are two main institutions that could issue such a circular. One is the Ministry of Industry and Handicraft (MIH), who could control EEE repairing and recycling facilities (including dismantling facilities). The MIH could also govern the EEE repairing dismantling facilities. The Ministry of Environment (MOE) could regulate the out of use materials or wastes generated from EEE repairing or dismantling. Such regulation should require the collection of UEEE's scrap wastes and its classification as hazardous wastes and that it must be sent to assigned dumpsites. Joint declaration and enforcement by both ministries would be more efficient,
2. Consideration for further banning the importation of EEE or other products or articles that contains internationally banned chemicals which Cambodia is a party to, such as POPs including POP PBDEs, shall be taken action and be regulated,
3. Mandated institution could be responsible for the safe and sound handling of POP PBDEs. This also refers to the management of end of life EEE as well as controlling the use of spare parts,
4. Capacity building and awareness raising on POP PBDEs issues particularly their impact on human health and the environment should be provided. Such awareness should cover the environmentally sound handling, dismantling and recycling of EEE and its wastes,
5. Monitoring on EEE repairing or dismantling facilities or scrap yards should be regularly undertaken to ensure that existing legislations are followed,
6. As there is at present some recycling of TV/monitor CRT casings taking place in the country it is necessary to request an exemption from the Secretariat of the Convention for recycling articles containing POP-BDEs,
7. It is necessary to notify the Secretariat of the Convention that CRT casings of TVs and monitors contaminated with HexaBDE and HeptaBDE (c- OBDE) remain in use within the country,
8. A priority follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs) waste from cars and casings of TVs and monitors.

5.4 Actions to reduce or eliminate the release of POP PBDEs in Transportation

The same with POP PBDEs in e-waste, POP PBDEs in transport sector are not covered by specific legislation nor is any institution mandated to be responsible for safe use and handling of its products and articles or wastes containing PBEDs, thus there is number of suggested actions to reduce or eliminate the release of POP PBDEs in Transportation as follows:

1. Legislation: The legislation that could address the need for further prevention of release of POP PBDEs into the environment could be a ministerial declaration or a circular, necessary for governing repairing garage and vehicle deregistration. There are two main institutions that could issue such a circular either individually or together. One is the Ministry of Public Works and Transport (MPWT), who could control car repair garages (including dismantling facilities). The MPWT could regulate and control how cars are repaired and that no longer used cars are deregistered and sent for dismantling. The Ministry of Environment (MOE) could regulate the wastes generated from car repair or dismantling. Such regulation could require the collection of car's scrap wastes and to classify it as hazardous waste and that must be sent to assigned dumpsites. A joint declaration and enforcement by both ministries would be more efficient.

2. There is a need to re-enforce cars deregistration system as well as enforcement of sub-decree on the management of garages, for which environmentally sound management shall be also considered,
3. Mandate institutions to be responsible for safe and sound handling of POP PBDEs. This refers to the management of end of life vehicles as well as controlling car spare parts, i.e. seat, cardboard, armrest, oily waste discharge, etc.
4. Capacity building and awareness raising on POP PBDEs issues, particularly their impact on human health and the environment could be provided. Such awareness should cover sound handling of car wastes or other wastes generated by end of life of vehicles,
5. Monitoring of car repairing or dismantling garage/facilities should be regularly undertaken to ensure that existing legislations is applied;
6. As there is continued use of cars with car seats contaminated with c-PentaBDE in the country it is necessary to notify the Secretariat of the Convention that PUR foam in car seats contaminated with TetraBDE and PentaBDE (c- PentaBDE) remain in use within the country
7. As there is at present no recycling taking place in the country it is not necessary to request an exemption from the Secretariat of the Convention for recycling articles containing POP-BDEs.
8. One could consider to request for the further import of cars manufactured before 2005 a certificate that the cars' materials do not contain POP-BDEs
9. A priority follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs) waste from cars and electronic equipment.

5.5 Actions to reduce or eliminate the release of PFOS in Firefighting

As PFOS and PFOS related substances does not cover by specific legislation nor is any institution mandated to be responsible for safe use and handling of its products and wastes, thus there is number of suggested actions to reduce or eliminate the release of PFOS in firefighting as follows:

1. Development of legal framework: The legislation that could address the need for further prevention of the release of PFOS into the environment is a ministerial declaration or acicular. There are two main institutions that could issue such a circular: the Ministry of Interior (MOI) and the Ministry of Environment (MOE). Such regulation could require the prohibition of importation and use of PFOS and PFOS related substances and articles contained in firefighting foams and address clean-up of contaminated sites, where PFOS containing foams has been used to combat fire. Furthermore, the importation of new foam without PFOS and its related substances shall be regulated. A joint declaration and enforcement by both ministries would be more efficient;
2. Keep existing foam containing PFOS for emergency purpose. The existing PFOS firefighting foam is considered to keep as it is for emergency purposes as Cambodia does not have resources to replace any PFOS firefighting foam for the time being.
3. As there is at present the continued use of PFOS or PFOS related chemicals in the country in firefighting foams it is necessary to request an acceptable purpose for continued use PFOS in firefighting foam already in the country from the Secretariat of the Convention
4. Disposal of obsolete foam. The obsolete firefighting foam containing PFOS, neither by its deteriorate quality/property nor by law requirement, shall be considered as hazardous wastes and must be disposed at designated hazardous dumpsites.
5. Capacity building on safe and sound handling of firefighting foam shall be provided to police fire brigade .As there is at present no known use of PFOS or PFOS related chemicals in the country it is not necessary to request a specific exemption or acceptable purpose from the Secretariat of the Convention.

6. Notify to the Secretariat. According to the present knowledge it is not necessary to notifythe Secretariat that particular types of articles containing PFOS or PFOS related chemicals remain in use within the country
7. It would be useful to get external support for the analytical determination of PFOS or PFOS related chemicals in selected firefighting foams with amount of 44,419 liters are considered as PFOS contained, where 9,934 liters are likely contained PFOS and 34,485 liters are assumed to contain PFOS, while the 27,190.6 liters are unlikely to contain PFOS.

5.6 Actions to reduce the releases of unintentionally produced POPs

Minimization of the generation and release of unintentionally produced POPs from various potential release routes – that is key tool contributing to the protection of human health as well as to implement the poverty alleviation of the RG policy, including contributing the achievement of Goal No. 7 of the CMDG. In this regard, the proposed action to reduce the releases of unintentionally produced POPs herewith as follows should be taken into account and carried out:

1. Developing a specific legislation/regulation on managing unintentionally produced POPs and doing a widespread education and dissemination to stakeholders at all levels.
2. Legal tool enforcement shall be applied to hot-spot sources or PCDD/PCDF release sources with the target of halting and minimizing negative impacts to the environment and human health.
3. Mainstreaming the sound management of PCDD/PCDF and minimizing initiatives of unintentionally produced POPs in the sectoral developments including in the planning sector.
4. Promote and encourage the comprehensive implementation of 3R initiatives towards household and/or urban solid waste management in order to minimize solid waste to be discarded at dumpsite as well as minimizing atmospheric pollution, climate change, acid rain and the release of PCDD/PCDF through open burning of solid wastes at dumpsites. It's also to take into account the increasing daily involvement of gender and/or job opportunity – where woman head household is taken higher percentage than men in the KOC.
5. Develop a National Integrated Solid Waste Management Plan (NISWM), to provide viable disposal options including engineered landfills. It aims to urge and improve waste management practices based on environmental sound friendly which is contributed to minimize health and environmental impacts resulting from generating and releasing of unintentionally produced POPs.
6. Developing a roadmap as the guidance on the management of unintentionally produced POPs based on the national strategy development plan and the UN Charts in relation to the minimization and phasing out of unintentionally produced POPs.
7. Developing pilot projects and selected implementing areas to introduce and minimize the release of PCDD/PCDF from industrial and agricultural practices.
8. Strengthen the ability and capacity of government agencies to cope with the management of unintentionally produced POPs by sector development (technical capacity for implementation and enforcement). Additionally, it's also suggested to build capacity of private sector and civil society implicating the interception and minimization of PCDD/PCDF release which may occur from their daily activities and/or involvements.
9. Financial mobilizing to other donor sources/partners should be promoted meanwhile as the national operational budget is limited.

6. POPS ACTION PLANS

A. UPDATING OF ACTION PLAN FOR THE INITIAL POPs

Objective 1: Strengthen institutional capacity and improve public awareness on obsolete pesticides including POPs pesticides.

Table No 10: Action Plan of POPs Pesticide to Achieve Objective 1

No	ACTIVITY	Responsible Institution	Timeframe
1.1	Strengthening existing pesticide regulation enforcement.	MAFF	2016-2020
1.2	Promoting the involvement of all national stakeholders (governmental and non-governmental, private and public) in the various issues related to pesticides management and use.	MAFF	2016-2020
1.3	Expanding awareness raising program on pesticides including POPs pesticides toxicity and hazards for related bodies (e.g. training workshops for government staff who work with pesticides management, pollution control and import/export control, dealers and the end-users).	MAFF	2016-2020
1.4	Establishing a networking and communication system with both national and international level links regarding pesticides and POPs pesticides information exchange.	MAFF	2016-2020

Objective 2: Strengthen laboratory capacity to support periodic POPs pesticides monitoring.

Table No 11: Action Plan of POPs Pesticides to Achieve Objective 2

No	ACTIVITY	Responsible Institution	Timeframe
2.1	Upgrading capacity of laboratory and the capacity building for pesticide contamination analysis in crop, food, soil, and water.	MAFF/MOC/ MIH	2016-2018
2.2	Conducting a scientific monitoring study on pesticide contamination on crop, food, soil, water and air and human health.	MAFF	2016-2020

Objective 3: Build capacity of government officials and enhance participation of private sector for managing PCBs.

Table No 12: Action Plan of PCBs to Achieve Objective 3

No	ACTIVITY	Responsible Institution	Timeframe
3.1	Building capacity of government officials and other stakeholders including private sector.	MME	2016-2017
3.2	Making effort to building capacity of decision makers to consider and provisional to the import only PCBs-free equipment.	MME	2016-2017
3.3	Strengthening cooperation between governmental institutions, the public, private sector and the stakeholders for sound PCBs management related to electrical purposes and information freely shared.	MME	2016-2020
3.4	Keeping in use the existing transformers PCBs contaminated until the end of their lives (up until 2025) by private companies under regular monitoring and reporting system made by MME's officers.	MME	2016-2020

Objective 4: Improve management and monitoring measure to manage stockpile and waste contained PCBs

Table No 13: Action Plan of PCBs to Achieve Objective 4

No	ACTIVITY	Responsible Institution	Timeframe
4.1	Development of PCBs substances management regulation.	MME	2016-2017
4.2	Scaling up controlling transformers being use by private entities.	MME	2016-2020
4.3	Strengthening public laboratories regarding both technical and human resources in order to be able to monitor and analyze for banned chemicals and PCBs.	MME	2016-2020
4.4	Undertaking effective measure for storing the existing equipment in a safe place.	MME	2016-2020
4.5	Seeking for international assistance regarding both technical and financial support for the decommissioning of old transformers that are contaminated with PCBs.	MME	2017-2019
4.6	Undertaking regular monitoring of the dielectric fluid of both public and private transformers.	MME	2016-2020

Objective 5: Take effective measure for reduction of the release of unintentionally produced PCDD/PCDF.

Table No 14: Action Plan of Unintentionally Produced POPs to Achieve Objective 5

No	ACTIVITY	Responsible Institution	Timeframe
5.1	Continuing consultation and finalizing law on chemical management and Developing a specific legislation/regulation on managing unintentionally produced POPs.	MOE	2016-2018
5.2	Building capacity for decision makers, governmental official, local authorities, communities on uncontrolled burning waste.	MOE	2016-2018
5.3	Providing training for formal education at public school (all levels).	MOE	2016-2019
5.4	Providing training to industrial private sector on uncontrolled warning waste and doing a widespread education and dissemination to stakeholders at all levels.	MOE	2016-2020
5.5	Enforcing law where hot-spot sources or PCDD/PCDF release sources with the target of halting and minimizing negative impacts to the environment and human health.	MOE	2016-2020
5.6	Mainstreaming the sound management of PCDD/PCDF and minimizing initiatives of unintentionally produced POPs in the sectoral developments including in the planning sector.	MOE	2016-2020
5.7	Developing a National Integrated Solid Waste Management Plan (NISWM), to provide viable disposal options including engineered landfills.	MOE	2016-2017
5.8	Improve waste management capacity (Service collection, 3R implementation, incineration waste burning service and dump side development (5MUS$, 5years)	MOE	2016-2020
5.9	Promoting and encouraging the comprehensive implementation of 3R initiatives towards household and/or urban solid waste management in order to minimize solid waste to be discarded at dumpsite as well as minimizing atmospheric pollution, climate change, acid rain and the release of PCDD/PCDF through open burning of solid wastes at dumpsites. Finding alternative in supporting daily involvement of women and/or assist to them in accessing to the job opportunity where women head household are taken higher percentage than men in the Kingdom of Cambodia.	MOE	2016-2020
5.10	Improving waste management practices based on environmental	MOE	2016-2020

	sound friendly which is contributed to minimize health and environmental impacts resulting from generating and releasing of unintentionally produced POPs.		
5.11	Developing a roadmap as the guidance on the management of unintentionally produced POPs based on the national strategy development plan and the UN Charts in relation to the minimization and phasing out of unintentionally produced POPs.	MOE	2016-2017
5.12	Developing pilot projects and selected implementing areas to introduce and minimize the release of PCDD/PCDF from industrial and agricultural practices.	MOE	2016-2018
5.13	Strengthening the ability and capacity of government agencies to cope with the management of unintentionally produced POPs by sector development (technical capacity for implementation and enforcement).	MOE	2016-2020
5.14	Building capacity of private sector and civil society implicating the interception and minimization of PCDD/PCDF release which may occur from their daily activities and/or involvements.	MOE	2016-2020
5.15	Conducting research, monitoring and inventory for new POPs released	MOE	2016-2020
5.16	Mobilizing financial resources needed to other donor sources/ partners and national operational budget.	MOE	2016-2020

B. ACTION PLAN FOR NEW POPs

Objective 6: Develop legal frameworks/measures and effectiveness enforcement of POPs PBDE in E-Waste and in Transport Sector

Table No 15: Action Plan of POP PBDEs in E-Waste and in Transport to Achieve Objective 6

No	ACTIVITY	Responsible Institution	Timeframe
6.1	Developing specific legislation on POP PBDEs in e-waste and in transport sector.	MOE/ MPWT	2016-2017
6.2	Raising basic consideration in banning the importation of EEE or other products or articles that contains internationally banned chemicals which Cambodia is a party to, such as POP PBDEs.	MOE	2016-2017
6.3	Re-enforcing cars deregistration system as well as enforcing of sub-decree on the management of garages, for which environmentally sound management shall be also considered.	MPWT	2016-2020

Objective 7: Build capacity and promote awareness of POP PBDEs in E-Waste and in Transport Sector to the officials and the public

Table No 16: Action Plan of POP PBDEs in E-Waste and in Transport to Achieve Objective 7

No	ACTIVITY	Responsible Institution	Timeframe
7.1	Building capacity and awareness raising on POP PBDEs issues particularly their impact on human health and the environment should be provided. Such awareness should cover the environmentally sound handling, dismantling and recycling of EEE and its wastes.	MOE	2016-2020
7.2	Building capacity and promote awareness raising on POP PBDEs impact on human health and the environment to officials from MPWT, MOE, and private sector, training will cover sound handling of car wastes or other wastes generated by end of life of vehicles.	MOE/ MPWT	2016-2020

Objective 8: Strengthen the management and applying monitoring measure of POP PBDEs in E-Waste and in Transport Sector

Table No 17: Action Plan of POP PBDEs in E-Waste and in Transport to Achieve Objective 8

No	ACTIVITY	Responsible Institution	Timeframe
8.1	Requesting an exemption from the Secretariat of the Convention for recycling articles CRT casings of TV and monitor of PC containing POP PBDEs.	MOE	a letter to the secretariat submitted together with NIP update
8.2	Putting notification to the Secretariat of the Convention that CRT casings of TVs and monitors contaminated with HexaBDE and HeptaBDE (c- OBDE) remain in use within the country and to notify the SECRETARIAT the continued use of C-PentaBDE	MOE	a letter to the secretariat submitted together with NIP update
8.3	As there is continued use of cars with car seats contaminated with c-PentaBDE in the country it is necessary to notify the Secretariat of the Convention that PUR foam in car seats contaminated with TetraBDE and PentaBDE (c- PentaBDE) remain in use within the country.	MOE	a letter to the secretariat submitted together with NIP update
8.4	Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs) waste from electronic equipment and casings of TVs and monitors.	MOE	2016-2017
8.5	Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs), waste from cars.	MOE/MPWT	2016-2017
8.6	Promoting safe and sound handling of POPs PBDE. This also refers to the management of end of life EEE as well as controlling the use of spare parts.	MOE	2016-2020
8.7	Promoting safe and sound handling of POPs PBDE. This refers to the management of end of life vehicles as well as controlling car spare parts, i.e. seat, cardboard, armrest, oily waste discharge… etc.	MOE/ MPWT	2016-2020
8.8	Monitoring on EEE repairing or dismantling facilities or scrap yards should be regularly undertaken to ensure that existing legislations are followed.	MOE	2016-2020
8.9	Monitoring of car repairing or dismantling garage/facilities should be regularly undertaken to ensure that existing legislations is applied.	MOE/ MPWT	2016-2020
8.10	Making request for the further import of cars manufactured before 2005 a certificate that the cars' materials do not contain POPs PBDE.	MOE/ MPWT	2016-2020

Objective 9: Minimize the use of PFOS and take counter measure to manage waste contaminated PFOS based on environmental principles.

Table No 18: Action Plan of PFOS in Firefighting to Achieve Objective 9

No	ACTIVITY	Responsible Institution	Timeframe
9.1	Developing of legal framework for further prevention of the release of PFOS into the environment such as ministerial declaration or a circular or a joint declaration & enforcement by MOE and MOI.	MOI/MOE	2016-2018
9.2	Keeping existing foam containing PFOS for emergency purpose due	MOI	2016-2020

	to Cambodia does not have resources to replace any PFOS firefighting foam for the time being.		
9.3	Undertaking sound environmental disposal of obsolete foam due to the obsolete firefighting foam containing PFOS, neither by its deteriorate quality/property nor by law requirement, shall be considered as hazardous wastes and must be disposed at designated hazardous dumpsites.	MOI/MOE	2016-2020
9.4	Building capacity on safe and sound handling of firefighting foam to the police fire brigade.	MOI/MOE	2016-2020
9.5	Seeking the external support for the analytical determination of PFOS or PFOS related chemicals in selected firefighting foams with amount of 44,419 litres are considered as PFOS contained, where 9,934 litres are likely contained PFOS and 34,485 litres are assumed to contain PFOS, while the 27,190.6 litres are unlikely to contain PFOS.	MOI/MOE	2016-2020
9.6	Seeking exemption from the Secretariat to continue to use PFOS containing firefighting foam already in the country.	MOI	a letter to the secretariat submitted together with NIP update

C. TIME-TABLE FOR THE IMPLEMENTATION OF THE UPDATING OF ACTION PLAN FOR POPs, 2016 – 2020

Table No 19: Time -Table for Implementation of POPs Action Plan

No	ACTIVITY	2016	2017	2018	2019	2020
1	**Objective 1: Strengthen institutional capacity and improve public awareness on obsolete pesticides including POPs pesticides.**					
1.1	Strengthening existing pesticide regulation enforcement.	☒	☒	☒	☒	☒
1.2	Promoting the involvement of all national stakeholders (governmental and non-governmental, private and public) in the various issues related to pesticides management and use.	☒	☒	☒	☒	☒
1.3	Expanding awareness raising program on pesticides including POP pesticides toxicity and hazards for related bodies (e.g. training workshops for government staff who work with pesticides management, pollution control and import/export control, dealers and the end-users).	☒	☒	☒	☒	☒
1.4	Establishing a networking and communication system with both national and international level links regarding pesticides and POPs pesticide information exchange.	☒	☒	☒	☒	☒
2	**Objective 2: Strengthen laboratory capacity to support periodic POPs pesticides monitoring.**					
2.1	Upgrading capacity of laboratory and the capacity building for pesticide contamination analysis in crop, food, soil, and water.	☒	☒	☒		
2.2	Conducting a scientific monitoring study on pesticide contamination on crop, food, soil, water and air and human health.	☒	☒	☒	☒	☒
3	**Objective 3: Build capacity of government officials and enhance participation of private sector for managing PCBs.**					
3.1	Building capacity of government officials and other stakeholders including private sector.	☒	☒			
3.2	Making effort to building capacity of decision makers to consider and provisional to the import only PCBs-free equipment.	☒	☒			
3.3	Strengthening cooperation between governmental institutions, the public, private sector and the stakeholders for sound PCBs management related to electrical purposes and information freely shared.	☒	☒	☒	☒	☒
3.4	Keeping in use the existing transformers PCBs-contaminated until the end of their lives (up	☒	☒	☒	☒	☒

	until 2025) by private companies under regular monitoring and reporting system made by MME's officers.					
4	**Objective 4: Improve management and monitoring measure to manage stockpile and waste contained PCBs**					
4.1	Development of PCBs substance management regulation.	☒	☒			
4.2	Scaling up controlling transformers being use by private entities.	☒	☒	☒	☒	☒
4.3	Strengthening public laboratories regarding both technical and human resources in order to be able to monitor and analyze for banned chemicals and PCBs.	☒	☒	☒	☒	☒
4.4	Undertaking effective measure for storing the existing equipment in a safe place.	☒	☒	☒	☒	☒
4.5	Seeking for international assistance regarding both technical and financial support for the decommissioning of old transformers that are contaminated with PCBs.	☒	☒	☒	☒	☒
4.6	Undertaking regular monitoring of the dielectric fluid of both public and private transformers.	☒	☒	☒	☒	☒
5	**Objective 5: Take effective measure for reduction of the release of unintentionally produced PCDD/PCDF.**					
5.1	Continuing consultation and finalizing law on chemical management and Developing a specific legislation/regulation on managing unintentionally produced POPs.	☒	☒	☒		
5.2	Building capacity for decision makers, governmental official, local authorities, communities on uncontrolled burning waste.	☒	☒	☒		
5.3	Providing training for formal education at public school (all levels).	☒	☒	☒	☒	☒
5.4	Providing training to industrial private sector on uncontrolled warning waste and doing a widespread education and dissemination to stakeholders at all levels.	☒	☒	☒	☒	☒
5.5	Enforcing law where hot-spot sources or PCDD/PCDF release sources with the target of halting and minimizing negative impacts to the environment and human health.	☒	☒	☒	☒	☒
5.6	Mainstreaming the sound management of PCDD/PCDF and minimizing initiatives of unintentionally produced POPs in the sectoral developments including in the planning sector.	☒	☒	☒	☒	☒
5.7	Developing a National Integrated Solid Waste Management Plan (NISWM), to provide viable disposal options including engineered landfills.	☒	☒			
5.8	Improve waste management capacity (Service collection, 3R implementation, incineration waste burning service and dump side development (5MUS$, 5years)	☒	☒	☒	☒	☒

5.9	Promoting and encouraging the comprehensive implementation of 3R initiatives towards household and/or urban solid waste management in order to minimize solid waste to be discarded at dumpsite as well as minimizing atmospheric pollution, climate change, acid rain and the release of PCDD/PCDF through open burning of solid wastes at dumpsites. Finding alternative in supporting daily involvement of women and/or assist to them in accessing to the job opportunity where women head household are taken higher percentage than men in the Kingdom of Cambodia.	☒	☒	☒	☒	☒
5.10	Improving waste management practices based on environmental sound friendly which is contributed to minimize health and environmental impacts resulting from generating and releasing of unintentionally produced POPs.	☒	☒	☒	☒	☒
5.11	Developing a roadmap as the guidance on the management of unintentionally produced POPs based on the national strategy development plan and the UN Charts in relation to the minimization and phasing out of unintentionally produced POPs.	☒	☒			
5.12	Developing pilot projects and selected implementing areas to introduce and minimize the release of PCDD/PCDF from industrial and agricultural practices.		☒	☒	☒	
5.13	Strengthening the ability and capacity of government agencies to cope with the management of unintentionally produced POPs by sector development (technical capacity for implementation and enforcement).	☒	☒	☒	☒	☒
5.14	Building capacity of private sector and civil society implicating the interception and minimization of PCDD/PCDF release which may occur from their daily activities and/or involvements.	☒	☒	☒	☒	☒
5.15	Conducting research, monitoring and inventory for new POPs released	☒	☒	☒	☒	☒
5.16	Mobilizing financial resources needed to other donor sources/ partners and national operational budget.	☒	☒	☒	☒	☒
6	**Objective 6: Develop legal frameworks/measures and effectiveness enforcement of POP PBDEs in E-Waste and in Transport Sector**					
6.1	Developing specific legislation on POP PBDEs in e-waste and in transport sector.	☒	☒			
6.2	Raising basic consideration in banning the importation of EEE or other products or articles that contains internationally banned chemicals which Cambodia is a party to, such as POP PBDEs.	☒	☒			

6.3	Re-enforcing cars deregistration system as well as enforcing of sub-decree on the management of garages, for which environmentally sound management shall be also considered.	☒	☒	☒	☒	☒
7	**Objective 7: Build capacity and promote awareness of POP PBDEs in E-Waste and in Transport Sector to the officials and the public**					
7.1	Building capacity and awareness raising on POP PBDEs issues particularly their impact on human health and the environment should be provided. Such awareness should cover the environmentally sound handling, dismantling and recycling of EEE and its wastes.	☒	☒	☒	☒	☒
7.2	Building capacity and promote awareness raising on POP PBDEs impact on human health and the environment to officials from MPWT, MOE, and private sector, training will cover sound handling of car wastes or other wastes generated by end of life of vehicles.	☒	☒	☒	☒	☒
8	**Objective 8: Strengthen the management and applying monitoring measure of POP PBDEs in E-Waste and in Transport Sector**					
8.1	Requesting an exemption from the Secretariat of the Convention for recycling articles containing POP PBDEs.	☒	☒			
8.2	Putting notification to the Secretariat of the Convention that CRT casings of TVs and monitors contaminated with HexaBDE and HeptaBDE (c- OctaBDE) remain in use within the country and to notify the SECRETARIAT the continued use of C-PentaBDE	☒	☒	☒		
8.3	As there is continued use of cars with car seats contaminated with c-PentaBDE in the country it is necessary to notify the Secretariat of the Convention that PUR foam in car seats contaminated with TetraBDE and PentaBDE (c- PentaBDE) remain in use within the country.	☒	☒	☒		
8.4	Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs) waste from electronic equipment and casings of TVs and monitors.	☒	☒			
8.5	Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs), waste from cars.	☒	☒			
8.6	Promoting safe and sound handling of POP PBDEs. This also refers to the management of end of life EEE as well as controlling the use of spare parts.	☒	☒	☒	☒	☒
8.7	Promoting safe and sound handling of POP PBDEs. This refers to the management of end of life vehicles as well as controlling car spare parts, i.e. seat, cardboard, armrest, oily waste	☒	☒	☒	☒	☒

	discharge… etc.					
8.8	Monitoring on EEE repairing or dismantling facilities or scrap yards should be regularly undertaken to ensure that existing legislations are followed.	☒	☒	☒	☒	☒
8.9	Monitoring of car repairing or dismantling garage/facilities should be regularly undertaken to ensure that existing legislations is applied.	☒	☒	☒	☒	☒
8.10	Making request for the further import of cars manufactured before 2005 a certificate that the cars' materials do not contain POP PBDEs.	☒	☒	☒	☒	☒
9	**Objective 9: Minimize the use of PFOS and take counter measure to manage waste contaminated PFOS based on environmental principles.**					
9.1	Developing of legal framework for further prevention of the release of PFOS into the environment such as ministerial declaration or a circular or a joint declaration & enforcement by MOE and MOI.	☒	☒	☒		
9.2	Keeping existing foam containing PFOS for emergency purpose due to Cambodia does not have resources to replace any PFOS firefighting foam for the time being.	☒	☒	☒	☒	☒
9.3	Undertaking sound environmental disposal of obsolete foam due to the obsolete firefighting foam containing PFOS, neither by its deteriorate quality/property nor by law requirement, shall be considered as hazardous wastes and must be disposed at designated hazardous dumpsites.	☒	☒	☒	☒	☒
9.4	Building capacity on safe and sound handling of firefighting foam to the police fire brigade.	☒	☒	☒	☒	☒
9.5	Seeking the external support for the analytical determination of PFOS or PFOS related chemicals in selected firefighting foams with amount of 44,419 litres are considered as PFOS contained, where 9,934 litres are likely contained PFOS and 34,485 litres are assumed to contain PFOS, while the 27,190.6 litres are unlikely to contain PFOS.	☒	☒	☒	☒	☒
9.6	Seeking exemption from the Secretariat to continue to use PFOS containing firefighting foam already in the country.	☒	☒	☒	☒	☒

D. ESTIMATED COSTS REQUIRED FOR THE IMPLEMENTATION OF THE UPDATING OF ACTION PLAN ON POPs, 2016 – 2020 (US$)

Table No 20: Estimated Cost for Implementation of POPs Action Plan

No	ACTIVITY	Source of Financing	2016	2017	2018	2019	2020	Total Budget
1	**Objective 1: Strengthen institutional capacity and improve public awareness on obsolete pesticides including POPs pesticides**							
1.1	Strengthening existing pesticides regulation enforcement.		10,000	10,000	10,000	10,000	10,000	**50,000**
1.2	Promoting the involvement of all national stakeholders (governmental and non-governmental, private and public) in the various issues related to pesticides management and use.		5,000	5,000	5,000	5,000	5,000	**25,000**
1.3	Expanding awareness raising program on pesticides including POPs pesticides toxicity and hazards for related bodies (e.g. training workshops for government staff who work with pesticides management, pollution control and import/export control, dealers and the end-users).		14,000	14,000	14,000	14,000	14,000	**70,000**
1.4	Establishing a networking and communication system with both national and international level links regarding pesticides and POPs pesticide information exchange.		6,000	6,000	6,000	6,000	6,000	**30,000**
2	**Objective 2: Strengthen laboratory capacity to support periodic POPs pesticides monitoring**							
2.1	Upgrading capacity of laboratory and the capacity building for pesticide contamination analysis in crop, food, soil, and water.		50,000	40,000	30,000	-	-	**120,000**
2.2	Conducting a scientific monitoring study on pesticide contamination on crop, food, soil, water and air and		20,000	30,000	30,000	30,000	20,000	**130,000**

	human health.							
3	**Objective 3: Build capacity of government officials and enhance participation of private sector for managing PCBs**							
3.1	Building capacity of government officials and other stakeholders including private sector.		20,000	20,000	-	-	-	**40,000**
3.2	Making effort to building capacity of decision makers to consider and provisional to the import only PCBs-free equipment.		10,000	10,000	-	-	-	**20,000**
3.3	Strengthening cooperation between governmental institutions, the public, private sector and the stakeholders for sound PCBs management related to electrical purposes and information freely shared.		7,000	7,000	7,000	7,000	7,000	**35,000**
3.4	Keeping in use the existing transformers PCBs-contaminated until the end of their lives (up until 2025) by private companies under regular monitoring and reporting system made by MME's officers.		6,000	6,000	6,000	6,000	6,000	**30,000**
4	**Objective 4: Improve management and monitoring measure to manage stockpile and waste contained PCBs**							
4.1	Development of PCBs substances management regulation.		20,000	20,000	-	-	-	**40,000**
4.2	Scaling up controlling transformers being use by private entities.		10,000	10,000	10,000	10,000	10,000	**50,000**
4.3	Strengthening public laboratories regarding both technical and human resources in order to be able to monitor and analyze for banned chemicals and PCBs.		20,000	20,000	20,000	10,000	10,000	**80,000**

4.4	Undertaking effective measure for storing the existing equipment in a safe place.		10,000	10,000	10,000	10,000	10,000	**50,000**
4.5	Seeking for international assistance regarding both technical and financial support for the decommissioning of old transformers that are contaminated with PCBs.		-	-	20,000	20,000	20,000	**60,000**
4.6	Undertaking regular monitoring of the dielectric fluid of both public and private transformers.		20,000	20,000	20,000	20,000	20,000	**100,000**
5	**Objective 5: Take effective measure for reduction of the release of unintentionally produced PCDD/PCDF**							
5.1	Continuing consultation and finalizing law on chemical management and developing a specific legislation/regulation on managing unintentionally produced POPs.		10,000	10,000	10,000	-	-	**30,000**
5.2	Building capacity for decision makers, governmental official, local authorities, communities on uncontrolled burning waste.		10,000	15,000	15,000	-	-	**40,000**
5.3	Providing training for formal education at public school (all levels).		-	7,000	7,000	7,000	7,000	**28,000**
5.4	Providing training to industrial private sector on uncontrolled warning waste and doing a widespread education and dissemination to stakeholders at all levels.		6,000	6,000	6,000	6,000	6,000	**30,000**
5.5	Enforcing law where hot-spot sources or PCDD/PCDF release sources with the target of halting and minimizing negative impacts to the environment and human health.		20,000	20,000	20,000	20,000	20,000	**100,000**
5.6	Mainstreaming the sound management of PCDD/PCDF and minimizing initiatives of unintentionally produced POPs in the sectoral developments including in the planning sector.		7,000	7,000	7,000	7,000	7,000	**35,000**

5.7	Developing a National Integrated Solid Waste Management Plan (NISWM), to provide viable disposal options including engineered landfills.		40,000	20,000	-	-	-	**60,000**
5.8	Improve waste management capacity (Service collection, 3R implementation, incineration waste burning service and dump side development (5MUS$, 5years)		100,000	100,000	100,000	100,000	100,000	**500,000**
5.9	Promoting and encouraging the comprehensive implementation of 3R initiatives towards household and/or urban solid waste management in order to minimize solid waste to be discarded at dumpsite as well as minimizing atmospheric pollution, climate change, acid rain and the release of PCDD/PCDF through open burning of solid wastes at dumpsites. Finding alternative in supporting daily involvement of women and/or assist to them in accessing to the job opportunity where women head household are taken higher percentage than men in the Kingdom of Cambodia.		30,000	30,000	30,000	30,000	30,000	**150,000**
5.10	Improving waste management practices based on environmental sound friendly which is contributed to minimize health and environmental impacts resulting from generating and releasing of unintentionally produced POPs.		30,000	30,000	30,000	30,000	30,000	**150,000**
5.11	Developing a roadmap as the guidance on the management of unintentionally produced POPs based on the national strategy development plan and the UN Charts in relation to the minimization and phasing out of unintentionally produced POPs.		40,000	20,000	-	-	-	**60,000**
5.12	Developing pilot projects and selected implementing areas to introduce and minimize the release of PCDD/PCDF from industrial and agricultural practices.		-	70,000	60,000	50,000	-	**180,000**

5.13	Strengthening the ability and capacity of government agencies to cope with the management of unintentionally produced POPs by sector development (technical capacity for implementation and enforcement).		30,000	30,000	30,000	30,000	30,000	**150,000**
5.14	Building capacity of private sector and civil society implicating the interception and minimization of PCDD/PCDF release which may occur from their daily activities and/or involvements.		10,000	10,000	10,000	10,000	10,000	**50,000**
5.15	Conducting research, monitoring and inventory for new POPs released		30,000	30,000	30,000	30,000	30,000	**150,000**
5.16	Mobilizing financial resources needed to other donor sources/ partners and national operational budget.		7,000	7,000	7,000	7,000	7,000	**35,000**
6	**Objective 6: Develop legal frameworks/measures and effectiveness enforcement of POP PBDEs in E-Waste and in Transport Sector**							
6.1	Developing specific legislation on POP PBDEs in e-waste and in transport sector.		40,000	20,000	-	-	-	**60,000**
6.2	Raising basic consideration in banning the importation of EEE or other products or articles that contains internationally banned chemicals which Cambodia is a party to, such as POP PBDEs.		30,000	20,000	-	-	-	**50,000**
6.3	Re-enforcing cars deregistration system as well as enforcing of sub-decree on the management of garages, for which environmentally sound management shall be also considered.		30,000	30,000	30,000	30,000	30,000	**150,000**
7	**Objective 7: Build capacity and promote awareness of POP PBDEs in E-Waste and in Transport Sector to**							

	the officials and the public							
7.1	Building capacity and awareness raising on POP PBDEs issues particularly their impact on human health and the environment should be provided. Such awareness should cover the environmentally sound handling, dismantling and recycling of EEE and its wastes.		10,000	10,000	10,000	10,000	10,000	**50,000**
7.2	Building capacity and promote awareness raising on POP PBDEs impact on human health and the environment to officials from MPWT, MOE, and private sector, training will cover sound handling of car wastes or other wastes generated by end of life of vehicles.		20,000	20,000	20,000	20,000	20,000	**100,000**
8	**Objective 8: Strengthen the management and applying monitoring measure of POP PBDEs in E-Waste and in Transport Sector**							
8.1	Requesting an exemption from the Secretariat of the Convention for recycling articles CRT casings of TV and monitor of PC containing POP PBDEs.							
8.2	Putting notification to the Secretariat of the Convention that CRT casings of TVs and monitors contaminated with Hexabromodipheny either and Heptabromodiphenyl either (c- OBDE) remain in use within the country and to notify the Secretariat the continued use of C-PentaBDE.							
8.3	As there is continued use of cars with car seats contaminated with c-PentaBDE in the country it is necessary to notify the Secretariat of the Convention that PUR foam in car seats contaminated with TetraBDE and							

	PentaBDE (c- PentaBDE) remain in use within the country.							
8.4	Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs) waste from electronic equipment and casings of TVs and monitors.		5,000	5,000	-	-	-	**10,000**
8.5	Prioritizing follow up action could be a project supported by the GEF for the waste management of hazardous (including POPs), waste from cars.		5,000	5,000	-	-	-	**10,000**
8.6	Promoting safe and sound handling of POP PBDEs. This also refers to the management of end of life EEE as well as controlling the use of spare parts.		7,000	7,000	7,000	7,000	7,000	**35,000**
8.7	Promoting safe and sound handling of POP PBDEs. This refers to the management of end of life vehicles as well as controlling car spare parts, i.e. seat, cardboard, armrest, oily waste discharge… etc.		7,000	7,000	7,000	7,000	7,000	**35,000**
8.8	Monitoring on EEE repairing or dismantling facilities or scrap yards should be regularly undertaken to ensure that existing legislations are followed.		20,000	20,000	20,000	20,000	20,000	**100,000**
8.9	Monitoring of car repairing or dismantling garage/facilities should be regularly undertaken to ensure that existing legislations is applied.		20,000	20,000	20,000	20,000	20,000	**100,000**
8.10	Making request for the further import of cars manufactured before 2005 a certificate that the cars' materials do not contain POP PBDEs.		3,000	3,000	3,000	3,000	3,000	**15,000**
9	**Objective 9: Minimize the use of PFOS and take counter measure to manage waste contaminated PFOS based on environmental principles.**							
9.1	Developing of legal framework for further prevention of		30,000	20,000	10,000	-	-	**60,000**

	the release of PFOS into the environment such as ministerial declaration or a circular or a joint declaration & enforcement by MOE and MOI.							
9.2	Keeping existing foam containing PFOS for emergency purpose due to Cambodia does not have resources to replace any PFOS firefighting foam for the time being.		7,000	7,000	7,000	7,000	7,000	**35,000**
9.3	Undertaking sound environmental disposal of obsolete foam due to the obsolete firefighting foam containing PFOS, neither by its deteriorate quality/property nor by law requirement, shall be considered as hazardous wastes and must be disposed at designated hazardous dumpsites.		7,000	7,000	7,000	7,000	7,000	**35,000**
9.4	Building capacity on safe and sound handling of firefighting foam to the police fire brigade.		10,000	10,000	10,000	10,000	10,000	**50,000**
9.5	Seeking the external support for the analytical determination of PFOS or PFOS related chemicals in selected firefighting foams with amount of 44,419 liters are considered as PFOS contained, where 9,934 liters are likely contained PFOS and 34,485 liters are assumed to contain PFOS, while the 27,190.6 litres are unlikely to contain PFOS. The result of this analysis will allow determining the need to continue to use PFOS containing firefighting foam already in the country for the discussion at COP9 in 2019.		10,000	20,000	20,000	5,000	3,000	**58,000**
9.6	Seeking exemption from the Secretariat to continue to use PFOS containing firefighting foam already in the country.							
	TOTAL BUDGETED BY YEAR		**859,000**	**871,000**	**721,000**	**621,000**	**559,000**	**6,631,000**

SECTION 5 : ANNEXES

ANNEX 1: POPs PRIORITY PROJECT PROFILE FOR FUNDING

Project 1: POPs Pesticides:

1-Project Title	Monitoring of pesticide use in Cambodia
2-Implementation agency	MAFF
3-Co-operational Agency	University, Research Institutions, NGO
4-Duration	5 years
5-Project Location	Kandal, Prey Veng, Battambang, Banteay Meanchey, Pailin, Kampong Cham, Kampong Chhnang, Pursat
6-Background	The use of POPs pesticide has been of great concern since none of the studying focusing on the POPs pesticide inventory is done so far. Moreover, to improve the proper handling/application of these POPs pesticide, it is important that pesticide use should be monitored which is in line with the law on the management of pesticides and fertilizers by MAFF. This law gives the direct impact on the management of POP pesticides and relevant chemicals. In addition, this project is also in line with the Stockholm Convention regulated the reduction of unintentionally produced POPs release where feasible, ultimate elimination of unintentionally produced POPs.
7-Project Rationale	At the present, POPs pesticide has been widely used in Cambodia while the knowledge of POPs residue in food-chain is still very limited. Moreover, given the rapid development of agricultural activities, i.e., expansion of agricultural land, the existence of POPs pesticide is of great concern. This project aims to monitor the use of pesticide in Cambodia and to improve the public awareness on POPs pesticide.
8-Project Justification	Compliance with MAFF law in 2012 and the Stockholm Convention obligation with regards to minimization of unintentionally produced POPs releases and promotion of public health in Cambodia.
9-Project Goal	Reduce the use of POPs pesticide in Cambodia
10-Objectives	1-Increase the public understanding on POPs pesticide 2-Improve POPs pesticide analysis capacity
11-Beneficiaries	Direct beneficiaries: National Agriculture Laboratory, University Laboratory, NGOs and farmers involved in project. Indirect beneficiaries: General Public
12-Activities	➢ Training of trainer in the target provinces; ➢ Farmer training in the target provinces; ➢ Consumer workshops on the POPs pesticide effects on human health; ➢ Media (TV-talk show, Radio, Newspaper) campaign on the POPs pesticide effects on human health; ➢ Upgrade the laboratory facilities/equipment for the analysis of POPs pesticide; ➢ Conduct technical training for laboratory staffs; ➢ Conduct the POPs pesticide inventory in target provinces; ➢ Create database plate-form for the POPs pesticide inventory; ➢ Establish POPs monitoring website.
13-Estimated Cost	US$ 5,000,000
14-Donors	JICA, WB, ADB, Chinese Government, FAO

Project 2: PCBs:

1- Project Title	Development of PCBs substance management regulation
2- Implementing Agency	MOE (MME)
3- Co-operational Agency	MME, Ministry of Information NGOs
4- Duration	24 months
5- Project Location	Phnom Penh and Provinces
6- Background	The Stockholm convention regulates the reduction of unintentionally produced POPs release where feasible, ultimate animation of unintentionally produces POPs. Cambodia is a signatory member of the convention and Cambodian lack of knowledge about PCBs. Therefore, Cambodia is developed a national plan to promote awareness to our people on PCBs.
7- Project Rationale	PCBs is toxic chemical substance critical impact on human health Both of officials and people at large are poor understanding about PCBs Implement the obligation under the Stockholm Convention
8- Project Justification	This proposed project unidentified source of budget. Governmental budget is limited. Only in kind contribution from the government is expected. Around 90% of the stakeholders will be improved their knowledge on PCBs.
9- Project Goal	Mainstream the understanding PCBs impact on human health to direct workers and people.
10- Objectives	Promote awareness among electricity holding licensers and importer of the transformers about PCBs.
11- Beneficiaries	Global contribution in elimination of PCBs Local people and official worker will be safe and healthy.
12- Activities	➢ Prepare awareness materials; ➢ Disseminate awareness to the officials, electricity licensers, importers, transporter, repairers on PCBs; and ➢ Undertake full transformers inventory.
13- Estimated Cost	US $ 240,000, 20% will be in kind contributed by the government.
14- Donors	Donors 80% (GEF, WB, EU, FAO, UNEP, ADB,JICA)

Project 3: PBDEs:

1- Project Title	Building Capacity an Awareness raising on POP PBDEs
2- Implementing Agency	MPWT-MIH
3- Co-operational Agency	MOE, Local Authority, City Hall, NGOs, CDC, Custom and Exise, MEF
4- Duration	24 months
5- Project Location	Phnom Penh and Province
6- Background	PBDEs is new POPs listed in 2009 by the convention. The Stockholm Convention regulates the reduction of PBDE from vehicle parts and vehicle material for human health safety and sound environmental management. The convention also regulated the country must promote awareness to the stakeholders on PBDE impact and management in transportation sector mostly for all kinds

	of vehicles produced from 2005. The management will include from import, use and disposal.
7- Project Rationale	Vehicle registration is under responsibility of the municipality and province, the MPWT is responsible for policy maker. Specific information about production, processing or repairing and recycling of car seat and other material in unclear data to be provided.
8- Project Justification	Fullfil requirement of the convention Lack of proper vehicle management required for mainstream awareness and PBDEs awareness dissemination for the stakeholder
9- Project Goal	Reduce and eliminate the release of unintentional produced POP-PBDEs
10- Objectives	Promote awareness for public and private sector on POP PBDEs in transportation
11- Beneficiaries	➢ Vehicle Users ➢ Public
12- Activities	➢ Establish inter ministerial technical working group ➢ Undertake survey and inventory for import and vehicle installation ➢ Study and assess the POP PBDEs in vehicle part and material and level of impact on human health and the environment ➢ Undertake technical training and workshop ➢ Extended dissemination material, magazine, CD in order to mainstream awareness of PBDEs in transportation through website and mass media.
13- Estimated Cost	US$300,000
14- Donors	UNIDO, UNITA, UNEP, JICA, KOICA,

Project 4: PFOS:

1- Project Title	Training and Dissemination of PFOS
2- Implementing Agency	MOI
3- Co-operational Agency	MOE, MOI, MIH, SSCA, MOIn
4- Duration	24 Months
5- Project Location	Battambang, Siem Reap, Phnom Penh, Preah Sihanouk and Stung Treng
6- Background	New POP regulated by the convention to take action by country Very limitted capacity has been built for the stakeholders by the NIP update project
7- Project Rationale	Level of understanding of the police fire brigade on PFOS are limited.
8- Project Justification	This project follow the requirment of the Convention
9- Project Goal	Enhance capacity of the police fire brigade
10- Objectives	Assess and build capacity of the police fire brigade at target province and municipality
11- Beneficiaries	The police fire brigade at target province and municipality
12- Activities	➢ Establish technical working group ➢ Conduct capacity need assessment

	➢ Develop training material ➢ Undertake consultation workshop on training material ➢ Organize training and dissemination of technical material on PFOS
13- Estimated Cost	US$200,000
14- Donors	UNEP, ADB, UNIDO, UNITA

Project 5: Unintentionally Produced POPs

1- Project Title	Provide training to industrial private sectors
2- Implementing Agency	MOE
3- Co-operational Agency	MIH, MOH MPWT
4- Duration	24 monts
5- Project Location	Phnom Penh nad Provinces
6- Background	To implement Stockholm Convention. Inorder to prevent and minimize POPs Unintentionally produced POPs all industrial private sectors have to acknowledge of the effect to environment and public health
7- Project Rationale	➢ Fast growing up industrial ➢ Toxic substances released into the environment ➢ Poor understanding about impact those toxic substances on human health and the environment
8- Project Justification	Compliance with the Stockholm convention obligation
9- Project Goal	Increase people awareness of uncontrolled burning waste
10- Objectives	Reduce of the affectation of this POPs Improve people health
11- Beneficiaries	Peoples employee and employer
12- Activities	➢ Training materials and facilities ➢ Training for trainers ➢ Collect information from industry that produced the pollutions
13- Estimated Cost	200,000$
14- Donors	Total Budget from partner project (GEF, WB, EU, FAO, UNEP, ADB, GTZ, JICA)

ANNEX 2: ENDORSEMENT LETTERS TO SUPPORT NIP UPDATE BY 4 MAIN MINISTRIES

Endorsement letter to support NIP update by Ministry of Public Work and Transport

Kingdom of Cambodia

Nation Religion King

Ministry of Mines and Energy
General Department of Engergy
No: ..698.....GDE

Phnom Penh, Date: 01 Dec, 2015

To
Excellency Minister Ministry of Environment

Support Letter
for
the Endorsement of Updated National Implementation Plan (NIP) for the Stockholm Convention on POPs in Cambodia

The Ministry of Mine and Energy (MME) has an honor to inform your Excellency minister that since Cambodia has became as a party to the Stockholm Convention on POPs in 2001, the MME express its closely cooperated and actively participated with the Ministry of Environment as well as with other related ministries and agencies to the implementation of the Stockholm Convention such as in the process of first NIP development in 2006, assigned officers to be as a national consultant and member team for the conducting inventory on POPs included PCB and participated in development of action plans for POPs management and in all stages to reviewing and updating of NIP formulation under NIP update project from 2013 to 2015.

To fulfill the obligation under the Stockholm Convention in particular for sound management of PCB, Electricity of Cambodia (EDC) General Department of Energy (GDE) of the MME has set out its policy not to import PCB transformers.

Given long term to achieve further the above objective, GDE and EDC have proposed some priority actions plans related to PCB management as set in this NIP updated and the EDC will be a leading agency responsible for carrying out this action plan in cooperation with relevant stakeholders in order to protect human health and environment.

The General Department of Energy is pleased to express its strong support for the proposed action plan as set under this NIP updated and request for your endorsement of this NIP update.

Sincerely,

Director General

Endorsement letter to support NIP update by Ministry of Public Work and Transport

KINGDOM OF CAMBODIA

Nation Religion King

MINISTRY OF PUBLIC WORKS
AND TRANSPORT

No: MPWT

Phnom Penh, 6 October 2015

H.E Say Samal

Minister of Ministry of Environment

Subject: Support Letter for the Endorsement of Updated National Implementation Plan (NIP) for the Stockholm Convention on POPs in Cambodia

Excellency,

The Ministry of Public Work and Transport (MPWT) has an honor to inform your Excellency Minister that since Cambodia has become a party to the Stockholm Convention on POPs in 2001, the MPWT expresses its closely cooperation and active participation with the Ministry of Environment as well as with other related institutions to the implementation of the Stockholm Convention such as in the process of the first NIP development in 2006, being as a national consultant and a member team for conducting inventory on POP PBDEs in the transport sector and participating in the development of action plan for POPs management and in all stages to review and update NIP formulation under NIP updated project from 2013 to 2015.

To fulfill the obligation under the Stockholm Convention in particular for sound management of POP PBDE which used as a flame retardant in vehicles, there are proposed priority action plans related to POP PBDEs management under this NIP update and the Department of Planning, MPWT, will be a leading agency responsible for carrying out these action plans in cooperation with relevant stakeholders in protecting human health and environment.

The MPWT with this regard is pleased to express its strong support for the proposed action plan under this NIP updated and request for your endorsement of this NIP update.

Please, Excellency, accept the assurance of our high consideration.

Yours Sincerely,

H.E NHEM Saran

Under Secretary of State

Ministry of Public Works and Transport

Norodom Blvd. Phnom Penh

Tel & Fax : (855) 23 426 640, (855) 23 427 862

Endorsement letter to support NIP update by Ministry of Agriculture Forestry and Fisheries

ព្រះរាជាណាចក្រកម្ពុជា

ជាតិ សាសនា ព្រះមហាក្សត្រ

ក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និង នេសាទ

បទអន្តរាគមន៍
គាំទ្រលើបច្ចុប្បន្នភាពផែនការជាតិអនុវត្តអនុសញ្ញាស្តុកខូម
ស្តីពី "សារធាតុបំពុលសរីរាង្គមិនងាយបំបែកធាតុ (POPs)"

ក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ មានកិត្តិយសសូមគោរពជម្រាបជូន **ឯកឧត្តមរដ្ឋមន្ត្រី ក្រសួងបរិស្ថាន** មេត្តាជ្រាបថា ក្រោយពីកម្ពុជាបានក្លាយជាសមាជិកនៃអនុសញ្ញាស្តុកខូម ស្តីពីសារធាតុបំពុលសរីរាង្គមិនងាយបំបែកធាតុ POPs (persistent organic pollutants) ចាប់តាំងពីឆ្នាំ២០០១មក ក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ បានសម្រេចចាត់បញ្ចូលសារធាតុ POPs (persistent organic pollutants) ថ្នាំកសិកម្មក្នុង បញ្ជីហាមឃាត់ ការផលិត នាំចូល ចែកចាយ និងប្រើប្រាស់នៅឆ្នាំ២០០៣ និងជានិច្ចកាលបានធ្វើការសហការយ៉ាងជិតស្និទ្ធ និងបានចូលរួមយ៉ាងសកម្មជាមួយក្រសួងបរិស្ថាន ក៏ដូចជាក្រសួងពាក់ព័ន្ធផ្សេងទៀតក្នុងការអនុវត្តអនុសញ្ញាស្តុកខូម ដោយក្នុងនោះ ក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ បានរួមចំណែករៀបចំផែនការជាតិសម្រាប់អនុវត្តអនុសញ្ញាស្តុកខូមដំបូងនៅឆ្នាំ២០០៦ និងបានបន្តរួមចំណែកជាមួយសកម្មភាពដទៃទៀត រួមមាន៖ ការចាត់បញ្ជូនមន្ត្រីជំនាញចូលរួមចុះធ្វើសារពើភ័ណ្ឌសារធាតុ POPs (persistent organic pollutants) ក្នុងវិស័យកសិកម្ម និងការចូលរួមផ្តល់ជាមតិយោបល់ក្នុងដំណើរការរៀបចំនូវផែនការសកម្មភាពគ្រប់គ្រងសារធាតុ POPs (persistent organic pollutants) និងជាចុងក្រោយ គឺការធ្វើបច្ចុប្បន្នភាពផែនការជាតិអនុវត្តអនុសញ្ញាស្តុកខូម "ស្តីពីសារធាតុបំពុលសរីរាង្គមិនងាយបំបែកធាតុ (ដែលហៅកាត់ថា NIP Updated)" ក្រោមការប្រតិបត្តិគម្រោងដែលបានចាប់ផ្តើមដំណើរការពីឆ្នាំ២០១៣ ដល់ឆ្នាំ២០១៥នេះ។

នៅក្នុងការធ្វើបច្ចុប្បន្នភាពផែនការជាតិនេះ ក្រសួងបានដាក់ចេញជាផែនការសកម្មភាព និងបានលើកស្នើគម្រោងអាទិភាពមួយចំនួនសម្រាប់គ្រប់គ្រងប្រកបដោយសុវត្ថិភាព និងប្រសិទ្ធភាពថ្នាំកសិកម្ម (POPs pesticide) ដោយអនុលោមតាមច្បាប់ស្តីពី "ការគ្រប់គ្រងថ្នាំកសិកម្ម និងជីកសិកម្ម" ដែលអនុម័តនៅឆ្នាំ២០១២ ហើយនឹងត្រូវដឹកនាំអនុវត្តផ្ទាល់ដោយក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ និងមានការសហការជាមួយគ្រប់ផ្នែកពាក់ព័ន្ធសំដៅធ្វើយ៉ាងណារួមចំណែកទប់ស្កាត់ កាត់បន្ថយការសាយភាយសារធាតុ POPs (persistent organic pollutants) និងផលប៉ះពាល់របស់វាទៅលើសុខភាពមនុស្ស សត្វ និងបរិស្ថាន។

ក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ សូមសំដែងនូវសុច្ឆន្ទៈ និងប្រកាន់នូវជំហរច្បាស់លាស់ក្នុងការអនុវត្តនូវសកម្មភាពលុបបំបាត់សារធាតុ POPs (persistent organic pollutants) ថ្នាំកសិកម្ម និងសូមគាំទ្រទាំងស្រុងលើការអនុម័តលើឯកសារបច្ចុប្បន្នភាពផែនការជាតិនេះ។

រាជធានីភ្នំពេញថ្ងៃទី០៧ ខែ តុលា ឆ្នាំ២០១៥

ជ. **រដ្ឋមន្ត្រី**
ក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ
រដ្ឋលេខាធិការ

អាស័យដ្ឋានលេខ ២០០ មហាវិថីព្រះនរោត្តម សង្កាត់ទន្លេបាសាក់ ខណ្ឌចំការមន រាជធានីភ្នំពេញ កម្ពុជា
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Endorsement letter to support NIP update by Ministry of Interior

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ជាតិ សាសនា ព្រះមហាក្សត្រ

ក្រសួងមហាផ្ទៃ
អគ្គស្នងការដ្ឋាននគរបាលជាតិ
លេខ : ៤៤៧ ស.ជ.ក

គោរពជូន

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លិខិតគាំទ្រលើឯកសារបច្ចុប្បន្នភាពផែនការជាតិអនុវត្តអនុសញ្ញាស្តុកខ្ញុម ស្តីពីសារធាតុបំពុលសរីរាង្គមិនងាយបំបែកធាតុ (POPs)

យោង : - របាយការណ៍ ចុះថ្ងៃទី១៣-១១-២០១៥ របស់នាយកដ្ឋានគ្រប់គ្រងសារធាតុគ្រោះថ្នាក់ នៃអគ្គនាយកដ្ឋានគាំពារបរិស្ថាន នៃក្រសួងបរិស្ថាន ស្តីពីសិក្ខាសាលាប្រកាសអនុម័តឯកសារបច្ចុប្បន្នភាពផែនការជាតិអនុវត្តអនុសញ្ញាស្តុកខ្ញុម ស្តីពី POPs នៅកម្ពុជា (ឯកសារ NIP Update)
- របាយការណ៍លេខ ២២៦១/១៥ ចុះថ្ងៃទី២៧-១០-២០១៥ របស់នាយកដ្ឋានគ្រប់គ្រងអាវុធជាតិផ្ទុះ និងអគ្គិភ័យ ការចូលរួមសិក្ខាសាលា ស្តីពីការប្រកាសអនុម័តឯកសារបច្ចុប្បន្នភាពផែនការជាតិអនុវត្តអនុសញ្ញាស្តុកខ្ញុម ស្តីពី POPs ។

អគ្គស្នងការនគរបាលជាតិ សូមជម្រាប **ឯកឧត្តម រដ្ឋមន្ត្រីក្រសួងបរិស្ថាន** មេត្តាជ្រាបថា : ក្រោមកិច្ចប្រតិបត្តិការគម្រោងក្នុងឆ្នាំ ២០១៣-២០១៥ នាយកដ្ឋានគ្រប់គ្រងអាវុធជាតិផ្ទុះ និងអគ្គិភ័យ នៃអគ្គស្នងការដ្ឋាននគរបាលជាតិ បានសហការយ៉ាងជិតស្និទ្ធ និងបានចូលរួមយ៉ាងសកម្មជាមួយក្រសួងបរិស្ថាន ក៏ដូចជាក្រសួង ស្ថាប័ន និងអង្គភាពពាក់ព័ន្ធផ្សេងទៀត ក្នុងការអនុវត្តន៍អនុសញ្ញាស្តុកខ្ញុម ស្តីពី POPs ដើម្បីកាត់បន្ថយហានិភ័យនានាបង្កឡើងដោយសារការប្រើប្រាស់សារធាតុ PFOS និងជម្រុញការលើកកម្ពស់ការយល់ដឹងរបស់ប្រជាពលរដ្ឋ ដែលប្រើប្រាស់ក្នុងវិស័យរបស់ខ្លួន សំដៅរួមចំណែកការពារសុខភាពមនុស្ស និងបរិស្ថាន ។

កាលពីថ្ងៃទី០៧ ខែកញ្ញា ឆ្នាំ២០១៥ អង្គសិក្ខាសាលាជាតិទាំងមូលបានឯកភាពប្រកាសអនុម័តឯកសារបច្ចុប្បន្នភាពផែនការជាតិ NIP Update ដែលបានកំណត់គម្រោងជាអាទិភាព ចំនួន ០៥ សំខាន់ៗ ដែលត្រូវអនុវត្ត និងគ្រប់គ្រងដោយក្រសួង/ស្ថាប័ន និងអង្គភាពពាក់ព័ន្ធ ក្នុងនោះការគ្រប់គ្រងហ្វូមពន្លត់អគ្គិភ័យ គឺជាការកិច្ចរបស់អគ្គស្នងការដ្ឋាននគរបាលជាតិ ក្នុងការចូលរួមចំណែកធានាប្រសិទ្ធភាពនៃការអនុវត្តន៍អនុសញ្ញាស្តុកខ្ញុម ស្តីពី POPs ហើយដែលកម្ពុជា គឺជាសមាជិកនៃអនុសញ្ញានេះ ។

ការកសាងបាននូវផែនការជាតិ NIP Update គឺបានផ្តល់ជាប្រទីបមួយសម្រាប់ជំណើរការអនុវត្តន៍ទៅមុខប្រកបដោយជោគជ័យរបស់ក្រសួងបរិស្ថាន ក្រសួង /ស្ថាប័ន និងអង្គភាពពាក់ព័ន្ធដែលបានចូលរួម ។

អគ្គស្នងការនគរបាលជាតិ សូមសំដែងនូវអំណរសាទរយ៉ាងកក់ក្តៅចំពោះអង្គសិក្ខាសាលាជាតិ ដែលបានខិតខំព្យាយាមរហូតទទួលបានលទ្ធផលជាផ្លែផ្កា និងសូមគាំទ្រលើឯកសារបច្ចុប្បន្នភាពផែនការជាតិអនុវត្តអនុសញ្ញាស្តុកខ្ញុម ស្តីពីសារធាតុបំពុលសរីរាង្គមិនងាយបំបែកធាតុ (POPs) ទាំងស្រុង ។

អាស្រ័យហេតុនេះ សូម **ឯកឧត្តម រដ្ឋមន្ត្រីក្រសួងបរិស្ថាន** មេត្តាជ្រាបតាមការគួរ

រាជធានីភ្នំពេញ, ថ្ងៃទី ២៧ ខែ វិច្ឆិកា ឆ្នាំ ២០១៥

អគ្គស្នងការនគរបាលជាតិ

នាយឧត្តមសេនីយ៍ នេត សាវឿន

មហាវិថីព្រះនរោត្តម សង្កាត់ទន្លេបាសាក់ ខណ្ឌចំការមន រាជធានីភ្នំពេញ ទូរស័ព្ទ/ទូរពុម្ព: ០២៣ ៧២៧ ៣២៩

ANNEX 3: GOVERNMENT AND KEY STAKEHOLDERS ENDORSEMENT NIP UPDATE DOCUMENT

No.	Governement Institutions and Stakeholders
1	Ministry of Environment
2	Ministry of Agriculture Forestry and Fisheries
3	Ministry of Public Works and Transport
4	Ministry of Mine and Energy
5	Ministry of Interior (General Commissariat of National Police)
6	Ministry of Industry and Handicraft
7	Ministry of Health
8	Ministry of Commerce (General Department of CAMCONTROL)
9	Ministry of Foreign Affairs and International Cooperation
10	Ministry of Economy and Finance (General Directorate of Customs and Excise)
11	Ministry of Tourism
12	Ministry of Labor Vocational and Training
13	Council Minister
14	Cambodia Development Council (CDC)
15	Electricite Du Cambodge (Electricity of Cambodia-EDC)
16	Cambodia Electrical Authority
17	Cambodia Agriculture Research and Development Institute (CARDI)
18	National Center for Malaria Control, Parasitology, and Entomology
19	Mlup Baitong Organization (NGO)
20	Royal Academy of Cambodia
21	Secretariat State Civil Aviation
22	Cambodia Agriculture Study and Development Center
23	Phnom Penh Municipality
24	Cambodia Institute of Technology
25	National Coordinating Committee for the Stockholm Convention
26	Cambodian Education and Waste Management organization(COMPED)
27	National Technical Training Institute

ANNEX 4: LIST OF HIGH LEVEL, NATIONAL CONSULTANTS AND PARTICIPATIONS ATTENDED MEETINGS AND NATIONAL WORKSHOPS TO REVIEW AND FEEDBACK FOR THE NIP UPDATE REPORT PREPARATION

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