



**MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND FORESTRY
STATE DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE**



**KENYA NATIONAL GAP ANALYSIS OF INFORMATION AND DATA UNDER THE
NATIONAL IMPLEMENTATION PLAN AND REPORTS UNDER THE STOCKHOLM
CONVENTION ON PERSISTENT ORGANIC POLLUTANTS**

**NAIROBI
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PREFACE

Kenya is Party to the Stockholm Convention on Persistent Organic Pollutants. Article 7 of the Convention requires that Party shall develop and implement a NIP(NIP) for the Convention and that it shall report to the conference of Parties (COP) on the measures it has taken to implement the provision of the to the Convention and on the effectiveness of such measures in the meeting the objectives of the Convention. This report presents the results of the review of Kenya’s NIP and reporting obligation under Articles 07 and 15 and how to improve and correlate it with the information presented in the NIP.

The NGA on Persistent Organic Pollutants related reporting obligation and correlation with the information presented in the NIP was performed in May 2022 to 30th February 2023.

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EXECUTIVE SUMMARY

Kenya is Party to the Stockholm Conventional on Persistent Organic Pollutants (POPs), and therefore obliged to develop and implement a national implementation plan (NIP) under article 7, and to report on the measures carried out to eliminate or reduce releases of POPs into the environment under article 15 of the convention. In the period 2022-2023 the Ministry of Environment Climate Change and Forestry implemented a national gaps analysis project executed by the UNEP Chemicals and Health Branch to assess the gaps in the information provided in the national implementation plan of 2007 (NIP) and the updated NIP (2014) transmitted to the Secretariat of Stockholm Convention.

The objective of the gaps analysis was to facilitate the development, transmission, access, and use of data contained in NIPs (NIP, Article 7) and National Reports (Article 15). The expected outcome is to strengthen the national capacity in executing in-country activities for data collection and national reporting under the Convention, increase the capacity of Kenya to implement the chemicals and waste multilateral environmental agreements (MEAs) and mainstreaming them into national and county policies, plans, financial and legal frameworks. The assessment covered the initial 12 POP1s and newly listed POPs. such as PBDE, HBCD, PCN, PCP, PFOS, SCCP, and an update of the UPOPs emissions inventories (See annex1).

In implementing the gaps analysis, the Ministry of Environment coordinated a team of national experts both in government and outside, in the development of this report. It held regular meetings and also engaged the key national institutions that are involved in POPs chemicals management at different stages of their lifecycle. The major steps in the development of the gaps analysis included: data identification, collection, screening and classification; data evaluation; and review of the gaps analysis and consultations with stakeholders. Virtual meetings and face-to-face workshops were conducted to promote information sharing, focused group discussions, and to validate the report. Training on UNEP gaps analysis, and application of the UNEP toolkit were facilitated by the UNEP team.

Significant quantitative or qualitative data gaps were identified in the national implementation plan include lack of quantitative data on releases of Unintentionally produced PCB and Lack of quantitative data on PCBs, PBDEs, HBB, HBCD, PCNs, PFOS, its salts and PFOSF in products.

Partial gaps in quantitative and/or qualitative data gaps exist in the current national legislative provisions, and/or some activities had been conducted during the First NIP that need to be filled through the NIP update. These include assessment of releases quantitative and of UPOPs, and import/export data for POPs pesticides and industrial POPs such as PCBs, PBDEs HBB, HBCD, PCNs, PFOS, PFOSF.

¹ As listed in the Convention website: www.pops.int

The gaps analysis elaborates potential shortcomings in the existing legislative framework and initiatives on POPs management that need to be addressed in order to correlate the information presented in the NIP and national reports, and improve the national reporting under Articles 07 and 15 of the Convention. Since the initial inventory conducted during the development of the initial NIP n 2003-2007, and updated in 2014, additional chemicals have been listed as POPs. The legislation on pesticides has kept pace with the listing, however legislation addressing industrial chemicals and UPOPs have not been updated to address the newly listed industrial POPs. The following are the recommended measures to minimize gaps and improve on national reporting obligation:

- i) Updating the national inventory and the NIP to include all POPs and collect the relevant data necessary to fill the gaps.
- ii) The Ministry of environment climate change and forestry should create awareness among the key institutions (KRA, PCPB, KEBS, NEMA, KAM, MOH) that are responsible for providing data required for reporting under article 7 and 15 of the Stockholm Convention by June 2023.
- iii) Establish a national institutional arrangement and coordination mechanism to facilitate and streamline collection, evaluation and review of the information required for implementation of the NIPs and national reporting.
- iv) Strengthening the national legislative framework and enforcement of the laws and regulations on POPs management across the chemicals life cycle;
- v) Enforcement of the ban on open burning of waste and promoting adoption of BAT and BEP to minimize industrial emissions;
- vi) Preparing standardized templates for data collection, analysis tabulation and archiving to ensure development/update of future inventories;
- vii) Compiling information on POPs stockpiles, particularly industrial waste; contaminated sites and soil remediation activities;
- viii) Development and approval of the monitoring and research program on the impact of chemicals on public health and the environment as well as its implementation to provide data on environmental levels.
- ix) Prohibiting all the pesticides containing POPs se, and promoting the use of alternatives;
- x) Updating the national legislation to cover all industrial POPs; including decabromodiphenyl ether (BDE-209) present in commercial decabromodiphenyl ether, Hexabromocyclododecane, Pentachlorophenol and its salts and esters.
- xi) Establishing the quantities of POPs in products in use and wastes, and screening of import/export products.
- xii) Updating the quantitative and qualitative information on electrical and electronic wastes needed to assess available data in database and in other open sources, such as international trade statistics <https://comtrade.un.org>.
- xiii) Updating of the inventory of UPOPs was conducted for PCDD/ PCDF and HCB for the reporting years: 2001, 2004, 2008, 2012, 2016, 2018.
- xiv) Conducting comprehensive inventory of PCBs in transformers and capacitors in order to promote proper handling, labeling, storage and disposal of oil containing PCB and equipment.
- xv) Conducting structured awareness programs and education activities among communities, women and children to minimize exposure to POPs and promoting of alternatives.
- xvi) Engaging the industry and stakeholders' sensitization on chemicals containing POPs and applicable exemptions

- xvii) Conducting capacity-building activities for the relevant authorities on legal and technical, issues
- xviii) Strengthening the analytical and technical possibilities of the waste laboratory within the national Environmental Management Authority (NEMA). The laboratory will be well equipped and will serve as a reference, including training of staff and technical exchange programs

LIST OF ABBREVIATIONS AND DEFINED TERMS.

BC	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
BAT	Best Available Techniques
CEC	County Environment Committee
Constitution	Constitution of Kenya, 2010
CoP	Conference of the parties of the Stockholm Convention on POPs
DMEAs	Department of Multilateral Environmental Agreements /MEF
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act, No. 8 of 1999
EP	National Environment Policy, 2013
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
GMP	Global Monitoring for POPs
HBB	Hexabromobiphenyl
HCW	Health care-waste
ICCM	International Conference on Chemicals Management, 2015
IOMC	Inter-Organization Programme for the Sound Management of Chemicals
KES	Kenya Shilling, the official currency of the Republic of Kenya
KSIP	Kenya SAICM Implementation Plan
MEAs	Multilateral Environmental Agreements
Minamata	Minamata Convention on Mercury
MoECC&F	Ministry of Environment, Climate Change and Forestry
MoH	Ministry of Health
MP	Monitoring Protocol for POPs in air, water and soil 2022
NA	National Assembly of the Republic of Kenya
NCP	National Profile to Assess the Chemicals Management
NEMA	National Environment Management Authority
NGA	National Gaps Analysis
NGOs	Non-Governmental Organizations
NIP	NIP for the Stockholm convention on POPs
PBDE	Polybrominated diphenyl ethers
PCBs	Polychlorinated Biphenyls
PCDD	Polychlorobenzodioxins
PCDF	Polychlorodibenzofurans
PCPA Control Act	Pest Control Products Act, Chapter 346, Laws of Kenya
PFOs	Perfluorooctanesulfonic acid
PHA	Public Health Act, Chapter 242, Laws of Kenya
PIC	Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

POPRC	Persistent Organic Pollutants Review Committee under the Stockholm Convention
POPs	Persistent Organic Pollutants
PRTR	Pollutant Release and Transfer Register
SAICM	Strategic Approach to International Chemicals Management
SC	Stockholm Convention on Persistent Organic Pollutants
SDGs	Sustainable Development Goals
SWMA	National Sustainable Waste Management Act, 2022
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UPOPs	Unintentionally Produced Persistent Organic Pollutants
Vision 2030	Sessional Paper No. 10 of 2012 on Kenya's Vision 2030
WHO	World Health Organization
WMR2006	Environmental Management and Co-ordination (Waste Management) Regulations, 2006
WRA	Water Resources Authority

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1. INTRODUCTION

Parties to the Stockholm Convention are required to develop a NIP (NIP) to demonstrate how the obligations of the Convention will be implemented.

This report on the NGA of Persistent Organic Pollutants (POPs), is provided within the framework of the UNEP/GEF project entitled the Project, whose main focus is to strengthen the capacity of the Ministry of Environment, Climate Change and Forestry of Kenya, with the support of UNEP Chemicals, in executing in-country activities for data collection for national reporting under the Stockholm Convention, and to increase capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and county policy, planning financial and legal frameworks.

The NIP [1][2] and the National Reports [3] submitted to the SC Secretariat under articles 15 and 7 respectively are key data sources used in the effectiveness evaluation of the implementation of the Stockholm Convention. In addition, specific national reports made since the last NIP update have been referred to and their summary included in the second update of the NIP.

The purpose of this Kenya NGA is to determine legal/institutional/ Information Technology infrastructure issues and provide a succinct overview of the most significant legislative and implementation gaps in legislation on POPs in Kenya for data collection for national reporting under the Stockholm conventions. As result of this project functional environmental information systems will be established to support decision-making process in the country.

The comments and feedbacks on questionnaires received from the stakeholders during various sites visits / face to face workshops, phone discussions are also incorporated to the report in order to adequately cope with managing Kenya's priority on POPs related issues in line with planned furthers activities on NIP update.

Table 1: Initial 12 POPs

POP	Acronym	Pesticides	Industrial	UPOPs	Action as per NIP
Aldrin	Aldrin	Pesticides	-	-	No further action
Chlordane		Pesticide			No further action
Dichlorodiphenyltrichloroethane	DDT	Pesticide	-	-	Seek exemption
Dieldrin		Pesticide	-	-	No further action
Endrin		Pesticide			Banned in 1986
Hexachlorobenzene	HCB	Pesticide	industrial	-	No further action
Heptachlor		Pesticide	-	-	No further action
Mirex		Pesticide	-	-	No further action
Polychlorinated biphenyls	PCB		industrial		Action Plan
Polychlorinated dibenzo-p-dioxins ²	PCDD	-	-	Unintentionally produced	HCW addresses. Address other sources
Polychlorinated dibenzofurans ³	PCDF	-	-	Unintentionally produced	HCW addresses. Address other sources
Toxaphene	-	Pesticide	-		Banned in 1986

It is noted that according to the GMP Kenya report 2021 the above POPs still appear mother's milk.

³ This data was used to develop a Full Scale GEF project: Mainstreaming sound chemicals management and UPOPs reduction from open burning of Health Care and Municipals waste

Table 2: POPs listed at COP-4

POPs listed at COP-4		Pesticides	Industrial	UPOPS	Action
Chlordecone	-	Pesticides	-	-	Banned in 2009 No further action
alpha-exachlorocyclohexane	α -HCH	Pesticide	-	-	Banned in 2009 No further action.
beta-Hexachlorocyclohexane	β -HCH	Pesticide	-	-	Banned in 2009. No further action
Lindane, gamma-Hexachlorocyclohexane	γ -HCH	Pesticide	-	-	Banned in 2011
Hexabromobiphenyl	HBB	industrial	industrial	-	No Action
Pentachlorobenzene	PeCBz	-	Industrial	-	No Action
Tetrabromodiphenyl ether and pentabromodiphenyl ether (commercial pentabromodiphenyl ether)	c-penta BDE	-	Industrial	-	Inventory pending
Hexabromodiphenyl ether and heptabromodiphenyl ether (commercial octabromodiphenyl ether)	c-octa BDE	-	Industrial	-	Inventory pending

Table 3: pops listed

POPs	Acronym	Parent compound
Perfluorooctane sulfonic acid	PFOS	Single anionic compound with one linear (L-PFOS) and many branched isomers
POPs listed at COP-5		
Technical Endosulfan and its related isomers	Pesticides	Banned in 2011
Dicofol	Pesticide	Banned
Penta chlorophenol and its salts and esters	Pesticide	Banned in 2004

1.1 Kenya Country profile

Kenya is a party to the Stockholm Convention on Persistent Organic Pollutants (POPs) having ratified the Convention in September 2004. The country subsequently developed its NIP (NIP) in 2007. It covered three years from 2007 to 2012. Like other parties to the Convention, Kenya engaged in the process of updating the NIP in accordance with the provisions of Article 7 of the Convention and in view of the amendments made to the convention since ratification. Through this process, Kenya is expected to develop or amend and implement, in a systematic and participatory manner, priority policy and regulatory reforms as well as capacity building needs and required investment programs for the new POPs since 2004 when it ratified. The process will also enable Kenya to establish inventories of products/articles containing new POPs, industrial processes using them and to provide useful information on the concentration levels and distribution of new POPs across the country environmental media.

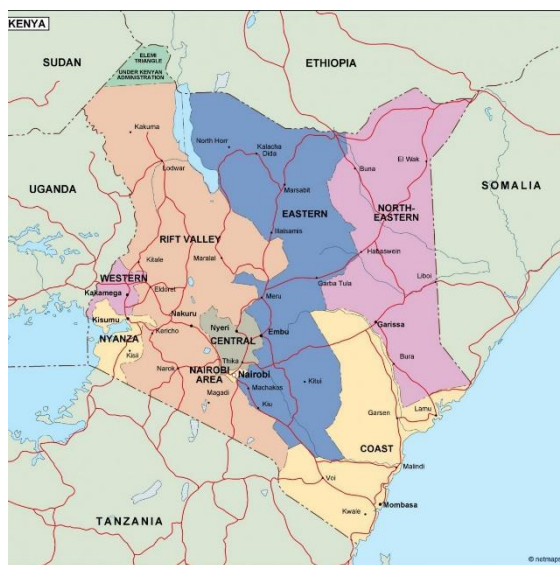


Figure 1 Map of Kenya Source Kenya Atlas

1.2 Kenya and the Stockholm Convention and Other Multilateral Environmental Agreements

NIP outlined the measures to be undertaken to manage the priority actions for management of the 12 POPs. In 2011 the COP added ten more chemical to the list. Consequently, in line with Article 7 of the Convention, Kenya updated the 2007 NIP. The update NIP also prioritizes unintentionally produced POPs.

Dirty Dozen	New POPs
Pesticides: <ul style="list-style-type: none"> • Aldrin • Chlordane • DDT • Dieldrin • Endrin • Heptachlor • Hexachlorobenzene • Mirex • Toxaphene 	Pesticides: <ul style="list-style-type: none"> • Alpha hexachlorocyclohexane, • Beta hexachlorocyclohexane, • Chlordecone, • Lindane, • Pentachlorophenol and its salts and esters, • Technical endosulfan and its related isomers
Industrial Chemicals: <ul style="list-style-type: none"> • Hexachlorobenzene • Polychlorinated biphenyls (PCBs) 	Industrial Chemicals: <ul style="list-style-type: none"> • Hexabromobiphenyl, • Hexabromocyclododecane, • Hexabromodiphenyl ether and heptabromodiphenyl ether (commercial octabromodiphenyl ether), • Perfluorooctane sulfonic acid (PFOS) its salts and perfluorooctane sulfonyl fluoride (PFOSF), • Tetrabromodiphenyl ether and pentabromodiphenyl ether (commercial pentabromodiphenyl ether), • Decabromodiphenyl ether (commercial mixture, c-DecaBDE), • Short-chain chlorinated paraffins (SCCPs)

In addition to the Stockholm Convention, Kenya has ratified a number of other chemicals related Multi-lateral Environmental Agreements (MEAs), as listed in Table 4 below.

Table 4: *International conventions and multilateral agreements signed, ratified and acceded to by Kenya*

	Multilateral Environmental Agreement	Party status	Ratification/ Accession	Responsible Institution
1	Stockholm Convention on POPs	Party	Ratified Update NIP 2014	MEF
2	Basel Convention on the Trans-boundary Movement of Hazardous Waste and their Disposal	Party	Ratified domesticated in EMCA	MEF/NEMA /
	Ban Amendment to the Basel Convention	Party	Ratified	MEF
3	Rotterdam Convention on Prior Informed Consent for Certain Chemicals and Pesticides in International Trade	Party	Ratified. Most pesticides in the restricted list of PCPB	MEF/PCPB /NEMA
4	Minamata Convention on Mercury	Signed	Signed	MEF/Ministry of Mining
5	Vienna Convention	Party	Ratified	MEF
6	Montreal Protocol and its Amendments	Signed	Ratified	MEF
7	UNFCCC Climate Change and its amendments	Party	Ratified	NCC

	Multilateral Environmental Agreement	Party status	Ratification/ Accession	Responsible Institution
8	UN Convention to Combat Desertification	Party	Ratified	MEF
9	Convention on Biological Diversity	Party	Ratified	MEF
10	Cartagena Protocol on Bio-safety	Party	Ratified	National Council on Science and technology
11	Convention on Chemical Weapons	Party	Ratified	Government Chemist ,I[Department

1.2.1. Production of POPS Pesticides

The pesticides industry consists mainly of firms formulating and repacking pesticide materials. They contribute 3% of the manufacturing sector. Some of the major raw materials are not locally available and this has led to low growth in the industry. The only raw material available locally is pyrethrin extracted from pyrethrum flowers. The Government is encouraging firms to add value on pyrethrin so that Kenya exports semi processed or finished products⁴.

Kenya does not manufacture any of the chemicals listed under the Stockholm Convention.

The sources of pesticides to Kenya according to the list of registered pesticides www.pcpb.go.ke are Europe, China, India, USA, Israel and Japan.

The analysis of import data from **2015** to **2018** from PCPB show that in general, the volume of imports has been growing steadily over the past 5 years for all the pesticide categories indicating a general increase of pesticide usage. For instance, the pesticides imported in 2018 were **17,829.997 tonnes** valued at **Ksh. 13.12 billion**. This is **20%** increase in volume compared to 14,736.64 tonnes imported in the year 2017 and valued at 12.72 billion. The value of importation increased by 3.2% from 2017 to 2018.

In terms of volume, the category of product that was imported most was herbicide with **5,899,020 tonnes** translating to **Ksh.2.67 billion**; this is **35.5%** increase from **2017**. It was followed by fungicide and insecticide with **5,163,972 tonnes (Ksh.4.16 billion)** and **4,536,117 tonnes (Ksh.4.76 billion)** respectively. Fungicide import volume increased by **40%** while Insecticide increased by **21%** in **2018**.

⁴ MENR, The Kenya NIP for POPs, 2015



Figure 2: *Pesticides imports store in one of the importing companies*

The general increase in usage of pesticides may be construed as greater proliferation of pests in the country due to climate change whose use may result in possible greater exposure to both human health and the environment. Resistance development of pests to some pesticides has also been observed leading to the need to have more pesticides with different modes of action that can be used in rotation by farmers to avoid resurgence of pests. Information on actual areas/crops where the products are used is not available as there is no such mechanism for monitoring or reporting. It is therefore difficult to report on the distribution of products among farmers and crops. However, this may be possible in some situations. For instance, there is a high concentration of flower farms in the Naivasha area and wheat is commonly found in Narok and Timau areas.



Figure 3: farmers using pesticides to treat agricultural products

The trends in imports are demonstrated by the charts and tables below;

Table 5: Pesticide Import Trend from 2009/2010 to 2020/2021 by Volume & Value⁵

Period	Volume in million (kg)	Import value in Billions (Ksh)
2009/2010	9.34	10.11
2010/2011	11.96	9.26
2011/2012	12.98	10.71
2012/2013	13.84	11.06
2013/2014	13.52	11.2
2014/2015	16.33	12.69
2015/2016	15.50	11.32
2016/2017	14.64	11.02
2017/2018	15.81	12.7
2018/2019	14.2	10.96
2019/2020	19.8	13.5
2020/2021	19.5	13.8

(Source PCPB)

- The law in registration regulations requires that all pesticides must be registered after going through the registration process to determine safety, quality, efficacy and economic value.

⁵ This does not include those agrochemicals that come as bilateral assistance or other non-governmental bilateral assistance

- The registration regulations however exempt products intended for use in emergency situations such as invasive pests from the registration process and allows award of temporary registration for a period not exceeding one year.
- The provision in law of a procedure to be followed for the issuance of temporary registration under the emergency situation is not provided for.
- All products for registration including temporary registration are required to undergo local efficacy trials to determine their efficacy under local conditions. However, an exception was made during the desert locust epidemic of 2019 in which reference was made to evidence of registration from other countries for the same purpose.

Table 6: Pesticide Import Trend from 2009/2010 to 2020/2021 by Volume & Value

Category	2015	2016	2017	2018
Herbicide	1,827,290,917	1,885,628,613	2,317,371,430.65	2,669,587,397.73
Insecticide	2,899,850,352	3,322,769,646	4,710,399,459.84	4,758,543,709.56
Fungicide	2,715,073,763	4,216,134,573	3,352,448,250.77	4,157,521,076.13
Acaricide	466,905,600	1,478,390,332	1,464,099,021.58	359,767,110.90
Adjuvant	0	176,619,790	121,348,967.64	243,158,208.34
Miticide	254,320,800	151,672,278	180,412,924.81	265,787,776.40
Nematicide	124,489,106	159,604,830	224,930,700.98	143,076,113.20
Rodenticide	0	28,945,285	33,702,486.56	44,681,452.82
Others	359,796,734	51,974,527	291,446,191.65	481,394,826.28
TOTAL	8,647,727,272	11,471,739,874	12,716,159,414.49	13,123,517,671.36

Source: PCPB

Gaps

- The data is not comprehensive for all the POPS
- Data is not segregated Listed pesticides
- Documentation is not available for stockpiles
- Too much use of trade names

1.3 Legislative analysis

1.3.1 Pesticides

All pesticides including bio pesticides for use on crops and in public health in Kenya are regulated under the Pest Control Products Act, CAP 346 enacted in 1982 and revised in 2009 through a miscellaneous amendment and regulations therein⁶. The regulations are;

- i. Registration regulations, 1984 (L.N. 43/2006);
- ii. Importation and exportation regulations, 1984 (L.N. 146/1984, L.N. 125/2006)
- iii. Licensing of premises regulations 1984 (L.N. 45/1984, L.N. 124/2006);
- iv. Disposal regulations, 2006 (L.N. 126/2006);
- v. Labelling, packaging and advertising regulations, 1984 (L.N. 89/1984, LN 127/2006);
- vi. Fees and other charges regulations, 2006 (L.N. 128/2006)



Figure 4: PCPB pesticides regulations religiously followed

Bio-pesticides are regulated in the same manner as conventional pesticides; however, data waivers are granted based on their nature and classification. The exception for bio pesticides would be live organisms for pest control that are evaluated by the Kenya Standing Technical Committee on Import and Exports of live organisms. Kenya implements the East African Community harmonized guidelines for registration of bio-pesticides. However, from interaction with farmers, the uptake of bio-pesticides as low risk alternatives remains low due to limited awareness on how to use them especially in Integrated Pest Management Systems to reduce the need for chemical

⁶ All available in the www.pcpb.go.ke, www.Kenyalaw.org.

pesticides. To address this gap, PCPB has developed a curriculum on IPM in collaboration with the Kenya Institute of Curriculum Development with the expectation that IPM can be cascaded in Primary, Secondary and Tertiary Education systems. The Ministry of Agriculture, Livestock, Fisheries and Cooperatives in October 2018 developed an Integrated Pest management Plan (IPMP) for National Agricultural and Rural Inclusive Growth Project (NARIGP) and in November 2020 it developed an Integrated Pest Management Plan (IPMP) for Emergency Locust Response Program. [JA1

1.3.2 Illegal transboundary trade

Consequently, Kenya has taken measures to review legislative provisions, in this case the draft law and regulations, as well as current practice in registration of pesticides espousing the EAC guidelines.

East African Community Regulations

The Pest Control Products Bill, and the seven (7) draft⁷ regulations, adequately capture the provisions of the EAC guidelines. The draft regulations capture imports and export fees and other charges, inspection, labeling, Confidential Business Information and registration. The registration regulations encompass the EAC guidelines' data requirements for conventional products, for microbials, biochemicals, and microbial chemicals as well as prescribed application forms.

PCPB prepared a road map to guide in the process of review of the law and regulations. The process has not moved at the desired speed mainly due to lack of resources to fund the various activities and steps.

1.3.3 National Institutional situation on Industrial Chemical

Currently in Kenya a national comprehensive strategy for the environmentally sound management and disposal of industrial POPs pesticide stockpiles is under development and this sector is still generally unregulated which results in the continuous minimal level of attention to the industrial pops issues and their mishandling practices.

1.4 PCBS

The amount of PCBs were identified in the Kenya NIP (2007) with support of UNEP (GEF ID 1474) as follows:

49 in-use Askarel transformers and 42 phased-out Askarel transformers were inventoried. However, it is only after the completion of the NIP Update (2014, GEF ID 4596) with direct implementation with the GEF that the Kenya Power Generation (KenGen) company started to analyze transformer oil (by means of Clor-n-oil fast kits) in the search of PCB pure or contaminated equipment in its networks.

⁷ Currently at the Attorney General Office for legal validation

This quite recent testing of transformers (mostly distribution transformers) provided evidence that 7 out of the 39 tested resulted positive at the chlor-n-oil test, which, considering that this test brings usually a significant number of false positives, supports the assumption of a 5% to 10% percentage of PCB contaminated transformers are present in the overall available online stock. Thus, there is need to take into account experience from other countries, it is expected that a relatively small number of pure PCB transformers will remain in service but that most of the equipment containing PCB are from cross contamination during servicing and are still being used. Earlier in 2004, consultations with the Kenya Power and Lightning Company (KPLC) demonstrated that the company is keen to continue the action of integrating the PCB identification within the scheduled maintenance of distribution and power transformers.

Currently there are around 40,000 transformers in use in the utility sector, and, based on the assumption that of 1% of the total fleet of transformers are pure PCB (like Askarel, Arochlor, Chlofen) transformers, and of 10% of the total fleet are PCB cross contaminated equipment, a reasonable estimate can be that around 400 transformers are pure PCB originally manufactured and installed, and around 4,000 are cross contaminated by PCBs due to mismanagement practices. This are the once that need disposal.

The amount of PCB contaminated transformers currently in use or phased out in the manufacturing or mining industry in Kenya is unknown, and needs to be assessed to understand the national situation. As part of initial efforts, KPLC has budgeted a considerable amount of investment of around USD 27.4 million for the replacement of 80 old transformers in the next 4 years. Apart from that no other activities are ongoing in Kenya with respect to PCB management.

1.5 Industrial POPs

This year (2013) Kenya has embarked on reviewing and updating its existing NIP. In the year 2009, new POPs were added to the previous list of POPs and among them are the Polybrominated diphenyl ethers (PBDEs) and Hexabromobiphenyl (HBB) which were listed in Annex A for eradication. Perfluorooctanoic sulfonate (PFOS) and related substances, listed in annex B for restricted use. PBDEs, HBB and PFOS are collectively known as industrial POPs. These chemicals have the potential to be transported long distances and deposited far away from their place of release including in pristine environments such as the Arctic. There are 22 POP chemicals listed in the Convention. The pesticides and industrial chemicals listed in the Convention have been banned in the many countries, with some limited exemptions.

The Kenyan NIP in 2008 did not include newly listed industrial POPs. This report is an assessment of industrial POPs in Kenya with the aim of updating the Kenyan NIP. It can be observed that the greatest challenge in Kenya concerning its mandatory obligation to Stockholm convention is lack of awareness by key stockholders on industrial POPs. Majority stakeholders cannot identify the industrial POPs by their chemical names. The consequence of lack of awareness by stakeholders has resulted in imports of these chemicals, unregulated cross border movements of products

containing industrial POPs. The current estimates of industrial POPs in products and what is being generated annually in Kenya is 677.2 Kg from Motor vehicles, 211.7 kg from CRTs, 520.9 kg from TVs, 780.1 kg from Computers for POP-PBDE. For PFOS and related substances, 9200 Kg of AFFF and fluoroprotein are released every year in the environment through firefighting processes and training fire personnel. The release of Industrial POPs to the Kenyan environment is through poor waste disposal methods and storage. Poor disposal and storage methods expose both POP-PBDEs and PFOS and related substances to the environment and ultimately a risk to human.

Table 7: POP-PBDE and HBB in Kenya

Sectors/category	Product	BEP & BAT
Transport	Buses, Trucks, Cars, Motorcycles	<ul style="list-style-type: none"> • Require policy on end-of-life vehicles. • No open storage from end-of-life vehicles • Recycling the PUR foam • Incineration of the PUR foam at 1500°C
Electronics	Computers/Printers/C copiers Mobile phones Radio Refrigerators Electric cables	<ul style="list-style-type: none"> • Buy parts that use alternatives • Avoid importation of second-hand electronics • Waste separation, recycling and reuse, <ul style="list-style-type: none"> <input type="checkbox"/> Send hazardous waste to countries with BAT
Furniture, mattresses & textiles	Mattresses and Foam	<ul style="list-style-type: none"> • No open burning, in case of burning, incinerate at 1800°C • Recycling • Labels on the containers of products
Recyclers		<ul style="list-style-type: none"> • Labels on the containers of products • Send hazardous waste back to country of origin

Incorporating the industrial POPs in the NIP is a good progress and in terms of future activities, the priority is to gain a better understanding of the potential scale and level of emissions from past uses and in-use items containing industrial POPs, particularly when they enter the waste stream.

1.6 Stockpiles, compliance activity and alternatives

Data on e-Waste stockpiles in Kenya were reported elsewhere as 11,400 tonnes are generated from refrigerators, 2,800 tonnes from TVs, 2,500 tonnes from personal computers, 500 tonnes from printers and 150 tonnes from mobile phones (UNEP & UNU, 2009). The same report (UNEP & UNU, 2009) showed that 1,513 tonnes of electronics entered the market. The consumer in addition to receiving 1489.4 tonnes also received 151.3 tonnes from the second-hand market. It was also revealed that consumers are likely to dispose 1,210.4 tonnes in the second-hard market, and 18.6 tonnes to collectors or as general waste which is sent to refurbishes. The consumer disposes a further 18.6 tonnes directly to recyclers. Refurbishes and recyclers then send 605.2 tonnes for disposal. Alternatives for flame retardants in electronic products exist, though imports from other countries that have not affected the PBDE ban is a major pathway to PBDE in Kenya. The report gives an insight of how industrial POPs management is a challenge and calls for interventions. The PBDE released from these estimates can be calculated. The following table 4-1-3 shows the amount of E-waste and the respective POP-PBDEs in stocks of EEE in Kenya

Table 8: E-waste amount and the respective POP-PBDEs in stocks of EEE in Kenya annually

Product type	Amount of E-waste in tonnes/year	POP-PBDEs in stocks of EEE in Kg/year
Fridge	1400	50.4
TVs	2800	2133.6
Computers	2500	236.25
Printers	500	47.25
Mobile phones	150	5.4
	7350	2472.9

1.7 Unintentionally produced POPs

For unintentionally produced dioxins, furans, hexachlorobenzene, and PCBs. Kenya produces **4,000TEQ g/year** mainly from open burning of waste. However, all Category C sources were found to be relevant.

- i. Developing regulations on dioxins and furans
- ii. Minimizing emissions from open burning process
- iii. Introduce Best Available Technologies and Best Environmental Practices
- iv. Assess unintentional production of PCBs and hexachlorobenzene which could not be made because the guidelines are not available;

- v. Give priority to the source categories in Annex C of the convention having high dioxin emissions as identified in the dioxin and furan inventory;
- vi. Train personnel involved in the handling and disposal of medical wastes;
- vii. Upgrade incinerators to meet emission levels consistent with the BAT/BEP guidelines and other regulations;
- viii. Support to public awareness programmes on proper waste handling, especially biomass and municipal wastes, and the need to discontinue open burning practices of waste;
- ix. Implement fossil fuel regulations No. 121 of 2006. of EMCA on fuel additives;
- x. Ensure the phase-out of lead in gasoline is on course;
- xi. Regulate governing environmental monitoring of contaminants, discharges and emissions from pulp and paper industries should be developed and enforced.

1.8 Objectives

The objective of the project is to facilitate the development, transmission, access and use of data contained in NIPs (NIP, Article 7) and National Reports (Article 15).

The NIP development is the obligations under the Article 7 of the Convention that requires each party to develop and endeavor to implement its obligations under the Convention, and to transmit its implementations plan to the CoP within two years of the entry into force of the Convention.

Other important obligation under Article 15 of the Convention that requires Party to prepare and deliver a national report contains information on the measures taken by a Party in implementing the SC and on its effectiveness. The CoP decided at its first meeting that national reports shall be submitted every four years. In order to enable the interpretation and comparison of trends, it is important that Kenya completes its national reports in a timely and accurate manner.

Within the project an integrated electronic toolkit has been developed by UNEP and the team trained and tested the toolkit. In order to be able to test the integrated electronic toolkit, some preparatory work needs have been performed, namely:

- update/revise the NGA to check the information included in the NIP(s) and national reports already submitted by Kenya, highlighting gaps on POPs qualitative and quantitative data;
- undertake revision/collection of POPs data (quantitative and qualitative).
- The NGA consists of performing the following activities;
 - i. Checking the information included in the national reports submitted by Kenya to the Stockholm Convention Secretariat, highlighting gaps on POPs qualitative and quantitative data;
 - ii. Checking the information included in the NIP(s) submitted by Republic of Kenya to the Stockholm Convention Secretariat, highlighting gaps on POPs qualitative and quantitative data;

- iii. Highlighting the differences between the information included in the national reports and the information presented in the NIP(s);
- iv. Providing recommendations for future streamlining of the data revision/collection process under the national reports and the NIP(s), with focus in addressing the identified data gaps (qualitative and quantitative data).

The NGA also consists on the review of the current regulations and laws governing of POPs reporting issues in line with the specific objectives identified below:

- To confirm the provisions in the current environmental regulations of Kenya covering POPs issues,
- To determine inconsistent provisions of national legislation on the POPs and SC that might be eliminated or improved,
- To identify the gaps of the national legislation on POPs data collection.

The NGA is focused on following criteria:

- relevance to country circumstance,
- effectiveness for NIP update process,
- efficiency due to pandemic situation,
- sustainability and the capacity of the expert team and
- national authorities.

The NGA is providing recommendations to be used in drafting the new legislation on collection of POPs data where appropriate. The review has been carried out by the national experts' team of the Project and member of the multilateral and multisectoral committee.

2. METHODOLOGY FOR THE NGA

2.1 Used approach on NGA

The development of the report is being completed in three steps (details provided below):

- Data and information identification, collection and classification - initial screening of the key documents on the subject;
- Compilation and evaluation of data and information;
- Review of the analysis and consultations.

2.2 Data and information collection and classification

The information contained in this section was used to support expert team in conducting NGA for reporting obligation as well for the NIP development.

The NGA on qualitative / quantitative data collection was performed following the general guidance and rules in order to promote consistency with already included information in the national reports submitted by Kenya to the SC Secretariat. Moreover, the need for correlation between reporting obligation and information included in the NIP(s) submitted by Kenya to the SC Secretariat is widely recognized as a priority activity. As results of this assessment the expert team has highlighted gaps on POPs qualitative and quantitative data and provided recommendations for future streamlining of the data revision/collection process under the national reports and the NIP(s), with focus in addressing the identified data gaps (qualitative and quantitative data).

The team was trained using the document in table 9 below.

Table 9: *Relevant Resource Documents Consulted*

Stockholm Convention Obligation	Reference Document screened
Article 15: National Reporting	Electronic Reporting System of the Stockholm Convention - Fourth reporting cycle questionnaire ; First Art. 15 report submitted by Kenya Second Art. 15 report submitted by Kenya
Article 7: NIP	First NIP Second NIPc(2014) Guidance for Developing a NIP (NIP) FAO Technical Guidelines: FAO Pesticide Disposal Series: Environmental Management Tool Kit for Obsolete Pesticides (EMTK) – Volumes 1-4

	Toolkit for the sound management of DDT for disease vector control (Not used)
	Guidelines for the identification of PCBs and materials containing PCBs (Not used)
	PCB inventory guidance (PCB Elimination Network) (Not used)
	Updated general technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants (POPs) (used)
	Draft guidance for the inventory of polybrominated diphenyl ethers (PBDEs) (used for E-waste Calculations)
	Guidance for the inventory, identification and substitution of Hexabromocyclododecane (HBCD) (is starting to be used but intended to be used)
	Draft guidance on preparing inventories of hexachlorobutadiene (HCBd) (Intended to be used)
	Draft guidance on preparing inventories of pentachlorophenol (PCP) and its salts (Not used)
	Draft guidance on preparing inventories of polychlorinated naphthalene's (PCN) (Not used)
UPOPs	<p>Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs (Toolkit)</p> <ul style="list-style-type: none"> ● Kenya Industrial Policy ● Kenya Inventory on UPOPs
PBDEs	Format for the submission of information for the evaluation and review of brominated diphenyl ethers pursuant to paragraph 2 of parts IV and V of Annex A to the SC
Stockholm Convention Obligation	Reference Document screened
DDT	Questionnaire for reporting by each Party on production and use of DDT for disease vector control and for reporting other information relevant to the evaluation of the continued need for DDT for disease vector control (used in 2004 but not in 2014)
PFOS	Form for the collection of information on PFOS, its salts, PFOSF and their related chemicals used in the evaluation of the continued need for the various acceptable purposes and specific exemptions (used but releases not calculated)
PFOA	Form for the collection of information on PFOS, its salts, PFOSF and their related chemicals to be used in the evaluation of the continued need for the various acceptable purposes and specific exemptions (used but releases not calculated)

2.3 Compilation and evaluation of data and information

Based on the available framework indicated in guidance document, the approach to conduct the comparative analysis of the NIP and the Art. 15 on reporting was done using Qualitative Comparative Analysis and the Quantitative Comparative Analysis. At both levels, the team was able to use relatively simple groups of data sets.

In order to perform the evaluation of data, the following documents were reviewed:

- i. National report submitted to SC – cycle 1, cycle 2 and draft cycle 3 reporting report;
- ii. Additional substance based excel files on gap analysis, drafted within the inventory for NIP update 2024 with PFOS, PBDEs reporting
- iii. Input from Kenya for Draft Generic Gap Analysis report developed in frames of GEF-6 Medium Size Project: Integrated SC Toolkit to improve the transmission of information under Articles 07 and 15

In order to consider the compliance with the obligations under the Convention in a more integrative manner, the project analyses the possibilities for harmonizing the followings:

- i. The format for Article 15 reporting requirements with the formats of the other reporting obligations under the Stockholm Convention;
- ii. The format of the NIP development and/or update with the Article 15 reporting format;
- iii. National mechanisms for NIP development and/or update with the NIP implementation and with the national mechanisms for reporting;
- iv. reporting submissions time schedules.
- v.

2.4 Review of the analysis and consultations

The main findings and recommendation have been presented during the national workshop and share them with interested stakeholders. The expert team prepared a PPT presentation and delivered it at a national workshop organized in Naivasha (see report). The expert team observed many the differences between the information included in the national reports and the information presented in the NIP and provided recommendations for future streamlining of the data revision/collection process under the national reports and the NIP(s), with focus in addressing the identified data gaps (qualitative and quantitative data).

The presentation of the findings of draft NGA report was conducted on October 15, 2022 for the representatives of environmental, technical supervision and agriculture authorities. A series of preliminary actions and measures to be further described were discussed and reflected under the comments / current status chapters of the tables. In addition, reports from ongoing projects and activities in 2020,2021 1nd 2022 for selected health care facilities and enterprises on revealing the situation with certain POPs potential use and recycling. The stopping of open burning of waste

The deliberations and conclusions of this process will establish the basis for elaboration of a draft implementation plan, including strategic elements and action plans. This report will be further deeper examined and adjusted by the MECC&F and later used for the NIP update project at the appropriate time. Other important issue is quality assurance/quality control; this issue is assessed separately with support provided UNEP Chemicals and Health Branch, Economy Division.

2.5 Challenges and limitations

The report seeks to present identified existing overlapping and gaps data and information requested reported under Article 15 and other reporting obligations under the Stockholm Convention and the data and information generated and included in the NIP development and/or update process, as submitted by Kenya to the SC Secretariat.

Challenges were encountered in compiling and analyzing this information, resulting in some noteworthy limitations to the report and its findings.

These challenges are related to the process of correlation of the data and information generated during the NIP development and update with the reporting obligations. The correlation was based on expert judgement and may have resulted in an oversight of information and data or on the contrary in an over appreciation of the coverage of information and data generated during NIP development and/or update over the reporting requirements.

2.6 Methodology for the data and information collection

2.6.1 products and waste, as well as of UPOPs emissions Used approach regarding the POPs data collection, estimation of POPs content in relevant

Due to difficulties that country face in submitting of last two reports it become obvious that reporting requires national coordination and the collection of information and data from multiple stakeholders, including different ministries. The lack of technical knowledge, as well poor cooperation between these stakeholders delays the gathering of the needed information for national reports and NIP updating.

The expert team decided to additionally include in this NGA two approaches on data collection as well to indicate the method how to assess the POPs content in relevant products and waste. In particular, this additional effort was done in order to address the outstanding reporting issues and help Kenya in identifying the newly listed POPs in products and articles.

Methodological approach for data and information collection consists of five components;

- i. desk reviews of legal framework and available data base;
- ii. questionnaire based surveys;
- iii. field visits to main stakeholder;

- iv. cross checking interviews with state and private stakeholders; and
- v. An expert assumption and logical analysis.

In order to ensure accuracy of the estimations calculated, the data and information collection was performed using two approaches. A “bottom-up” approach was used in specific sources, such as industrial sources, disposal and treatment of waste, and transformers, in which case there were data of activity levels or whose estimation was possible using the information available.

On the other hand, a “top-down” approach was used for area sources, including the registration to put on market/ imports application of agrochemicals and the use of electric and electronic equipment with BFRs, for which there are available data at a national level and a lesser level of disaggregation. The expert team considers previous several inventory experiences done in 2004/2014 where both approaches were used that serve as references of this POPs inventory. Particularly as team we were involved in GHG inventory for the waste sectors, Hg inventory for the Minamata Initial Assessment, as well in developing the inventory methodologies for the PRTR reporting and developing a POPs monitoring plan.

Following methodological approach have been applied to conduct this NGA Report regarding the POPs data collection:

- Identification of key sources of POPs data collection: include data needs assessment and data sources especially from the Kenya National Bureau of statistics, individual Ministries.

Estimation of POPs content in relevant products and waste, as well as of uPOPs emissions are the next step to be done within this project, based on collected data and available information at the nation level. In this the regard expert team will do in the upcoming period following activities:

- i. Selection and use of estimation methodologies and assumptions, include descriptions and selection of factors, using available BAT and BEP guidelines and relevant assumptions.
- ii. Carry out recalculations: includes issues related to the quantitative and qualitative reporting of information on recalculations using the UPOPs toolkit. It is important to note that under current project activities is envisage to recalculated uPOPs inventory conducted in 2007 and updated in 2014 and recalculated in 2022. however due to the changes in the emission factors it was not easy to discern.
- iii. Secure consistent time series: includes issues related to inconsistent time series and methods and approaches applied to ensure time series consistency and constant review of the toolkit

In case of emission estimation, the final calculations will be performed using the procedure according to which an emission factor (F: potential emission of a given substance per reference unit of a product or compound) and a temporal level of activity (A: values of consumption or production) are used for a known source, according to the equation:

$$E = F \times A^8$$

Emission factors have been identified from various sources, such as the Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs, national / international publications, GHG Inventories, EMEP Guidebook, PRTR reports provided by the private sector related to industrial activities, reports from environmental agency/inspection.

2.6.2 Institutional arrangements for data and information collection

In order to perform data collection, an official request have been sent to key chemicals and waste institutions including

- i. Ministry of Agriculture, Pest control Products Board, Agrochemicals Association of Kenya. For Stockholm Convention reporting (PCB/PTT, obsolete pesticides),
- ii. Crop Life International
- iii. The Kenya National Bureau of statistics collects data on waste as reported by obliged subjects. These data are not full scale and contain mostly information of some specific chemical imports.
- iv. Kenya Revenue Authority Customs offices collect data of exported / imported goods, chemicals and wastes.
- v. The Government Chemist.
- vi. National Environment Management Authority (NEMA)
- vii. University of Nairobi
- viii. Water Resources Authority (WRA)
- ix. Masinde Muliro University of Science and Technology, Pure and Applied Chemistry Department (MMUST)
- x. Nairobi University, Chemistry Department

Stakeholders who were either consulted or whose programs were reviewed

These include the following:

2.6.3 Government Ministries.

The following are institutions directly involved with NIP issues

- i. Ministry of Environment, Climate Change and Forestry
- ii. Ministry of Health (Malaria Control Programme)
- iii. Ministry of Industry and Enterprise Development (MT&I)
- iv. Ministry of Health
- v. Ministry of Agriculture and livestock (MOA).
- vi. Ministry of Labor. (MOL)
- vii. Ministry of Interior Devolution.
- viii. Ministry of Water development and Irrigation (MoWI)
- ix. National Treasury

⁸ According to the UNEP toolkit

Table 10: Institutional arrangements for data and information collection on pops

Agency/ministry	Production	Storage	Transport	Distribution Marketing	Use/ Handling
Environment	✓	✓	✓		
National Environment management Authority					
Health		✓	✓		✓
KEMRI					
Agriculture	✓	✓	✓	✓	✓
KARLO					
Labor		✓			✓
DOHSS					
Trade/Industry	✓	✓	✓	✓	✓
KIRDI					
Finance					
KRA					
Transport			✓		
NTSA					
Interior/Defense					
Government Chemicals Department					
Office of the Attorney General					
Customs & Exercise					
Kenya Revenue Authority					
Foreign Affairs					
Kenya Mission to UNEP					

2.6.4 Specialized Sectoral agencies

- i. National Environment Management Authority (NEMA)
- ii. Kenya Bureau of Standards (KBS)
- iii. Water Resources Management Authority (WRA)
- iv. Government Chemist Department (GCD)
- v. Pest Control Products Board (PCPB)
- vi. Kenya Ports Authority (KPA)
- vii. Kenya Revenue Authority (KRA)
- viii. Department of Occupational Health and Safety Services (DOHSS)
- ix. Kenya Medical Research Institute (KEMRI)
- x. Kenya Industrial Research Institute (KIRRI)
- xi. Private Sector Associations were:
- xii. Agrochemical Association of Kenya
- xiii. Kenya Association of Manufactures
- xiv. Federation of Kenya Employers

2.6.5 Non-governmental Organizations

- i. Center for Environmental Justice and Development (CEJAD)
- ii. University of Nairobi- Chemistry Department
- iii. Masinde Muliro University of Science and Technology
- iv. United States International University (USIU)
- v. Jomo Kenya University of Technology (JKUAT)
- vi. Maseno University
- vii. Moi University Eldoret

2.6.6 Ministerial responsibilities.

The following are Ministerial responsibilities with regard to chemicals.

- i. Ministry of Health (Malaria Control Programme): The Ministry provides policy guidelines on human health in Kenya DDT and HCW disposal
- ii. Ministry of Trade and Industry (MT&I). The Ministry regulates and enforces trade regulations both local and international.
- iii. Ministry of Agriculture and livestock (MOA). The Ministry is mandated to oversee sustainable agricultural practices and use of agrochemicals.
- iv. Ministry of Labor. The Ministry handles matters related to workers health and exposure to Chemicals and related issues.
- v. Ministry of interior and devolution. The Ministry regulates the functioning of all city councils, municipal councils and town councils in the country and especially waste treatment and disinfections.

2.6.7 Department of Multilateral Environmental Agreements (DMEAs)

Ministry of Environment, Department of Multilateral Environmental Agreements coordinates the implementation of the treaties and international agreements related to waste and chemicals to which Kenya is a party. It also contributes to the collection and dissemination of the information about waste and chemicals management, including the cross-border context, and ensure the public access to information.

2.6.8 Kenya National Bureau of Statistics (KNBS)

Law on official statistics establishes the principles for the collection, processing, centralization, dissemination and storage of statistical information, including on substances and chemicals. In addition, the statistical information on the formation, use and neutralization of toxic waste is collected by the KNBS through a statistical form separate from the economic agents that carry out such activities.

2.6.9 Kenya Revenue Authority–(KRA)

The Customs and Service department admits import/export of chemicals and waste in the territory of Kenya on the basis of permissive acts, and cooperates with environment authorities in the process of implementing the international environmental treaties on chemical and waste.

2.6.10 National Transport and Safety Authority (NTSA)

The registration, transcription of the transfer of ownership and deregistration of vehicles and trailers is carried out by the territorial subdivisions of examination and registration of vehicles of the Public Institution "Public Services Agency" at the request of vehicle owners or their agents (after certifying that the vehicle is not listed on registration as announced in pursuit according to the information resources held by the competent authorities of Kenya).

- The laboratory performs tests on analytical samples such as food and drugs, water and waste water, and forensic tests which include pesticide analysis.
- National authority for the chemical weapons convention
- Secretariat for the Chemicals Biological Radiological; and nuclear center of excellence. It has a role on POB but does implement any.

2.6.11 National Environmental Management Authority: www.nema.go.ke

NEMA is the regulatory authority responsible for implementation of the waste legislation.

It has the following duties, in relation to MEAs:

- participate in the implementation of the international treaties and agreements regarding waste management and their cross-border transportation
- issue notification documents regarding the cross-border transportation of waste, according regulations approved by the Government;
- ensure the setup of targets for the separate collection and recycling of product waste under the extended producer responsibility;
- Hosts the portal on plastics
- Regulates plastics

2.6.12 Obligations of Industry

Data collected using “top down” methodology from the state companies and/or private sector:

According to Article 15 of Stockholm Convention each Party shall report to the CoP on the measures it has taken to implement the provisions of this Convention and on the effectiveness of such measures in meeting the objectives of the Convention.

Among the obligations of the relevant ministries and governmental authorities listed above, the obligations of the private sector users of POPs must be clearly defined in the national legislation. It became obvious that the issues of the management and disposal requirements on POPs chemicals should be understood by the industrialists that handle the POPs chemicals.

In order to overcome this situation, several legal frameworks have been developed and approved since 2009 that obliged industries to undertake measure in meeting the objectives of the Convention such as minimizing open burning of waste.

Kenya has developed obligations related to the pesticides and some UPOPs issues, particularly for identification, labeling and removing from use equipment containing PCBs it started but did not complete reduction of unintentional POPs (uPOPs) releases,

- As regards PCB, in 2009 there is draft project to develop the Regulation on Polychlorinated Biphenyls. But no action
- The reduction of unintentional POPs (uPOPs) releases has been highlighted in the first NIP inventory of PCDD/PCDF conducted in 2001-2007, but due to inconsistencies in data collection / reporting, an updated inventory has not been done for the period 2007-2019.

2.7 Infrastructure for data collection

2.7.1 Draft Pollutant Release and Transfer Register”

Kenya has developed the National PRTR framework that will guide the development of the electronic database for emission of hazardous chemicals including POPs into air, water and soil. The Draft chemicals and waste regulation 2019 provides the framework for data collection through Pollutant Release Transfer Register (PRTR) and include information on the source Industry, type of pollutant and quantities released into Air, Water and Soil. However, the PRTR database has not been developed to enable electronic reporting of emissions and releases.

PRTR shall serve as a tool for collecting data for reporting on releases of the following of POPs:

- i. Perfluorooctane sulfonic acid, their salts and perfluorooctane sulfonyl fluoride
- ii. Perfluorooctane carboxylic acid and their related salts.
- iii. Perfluorohexane sulfonic acid
- iv. Alpha hexachlorocyclohexane
- v. Beta hexachlorocyclohexane
- vi. Beta-Chlordane
- vii. Polychlorinated biphenyls (PCBs)
- viii. Chlordecone
- ix. Dibenzoparadioxins polychlorinated and dibenzofurans (PCDD /PCDF)
- x. Endrin
- xi. Hexabromodiphenyl ether and ether heptabromodiphenyl (HBDE)
- xii. Hexabromodiphenyl ether, heptabromodiphenyl, octabromodiphenyl ether
- xiii. Tetrabromodifenil ether and pentabromodiphenyl ether
- xiv. Hexabromobiphenyl (HBB)
- xv. Hexachlorobenzen (HBC)
- xvi. Lindane
- xvii. Murex
- xviii. Pentachloro benzene
- xix. Hexabromocyclododecane and 1,2,5,6,9,10-hexabromocyclododecane (HBCD)
- xx. Polychlorinated naphthalene’s (PCN)

- a. Tetrabromodiphenyl ether and pentabromodiphenyl ether
- b. Decabromodiphenyl ether,
- c. Dicofol,
- d. Short-chained chlorinated paraffins
- e. Pentadecafluorooctanoic acid

It should be mentioned that production and use of Aldrin, Dieldrin, Heptachlor, Toxaphene and DDT are prohibited since 1984 and therefore are not included in the official Register of substances permitted for import / export and use in agriculture, including individual farms, forestry and household of the PCPB. Moreover, the new draft regulation on chemicals prohibits the import and production of the listed above substances. These substances are exempted from the PRTR reporting.

The following sectors were identified as potential point and diffuse sources of POPs releases:

Point sources:

- Energy sector – thermal power stations and other combustion installations especially household
- Health Sector -Medical waste incineration and open burning.
- Water sector -Waste and waste water treatment (open burning of landfills)
- Health care waste incineration

Diffuse sources:

- unauthorized landfills (open burning of waste)
- emissions from transport means
- agricultural activities (use of pesticides and fertilizers)

The calculation methodologies are available on part of the listed POPs, so that the economic operators can calculate and report them. For the others, additional work and research need to be done.

2.7.2 Waste Management Automatic Information System

Kenya does not have a waste management automatic information system. There is need to inventories and develop an automatic information system for waste management

2.7.3 Automatic Information System "Registry of chemicals placed on the Kenyan market"

The Automatic Information System " Registry of chemicals placed on the Kenyan market" is anticipated in the Toxic Chemicals Regulations 2018 and represents the general information of chemicals imported and has passed through the Kenya Revenue Authority. It need only HS code for input data. It has not completed its legislation process

One of the draft regulation layers is "Export and import of chemicals" which serve as platform for submitting an export notification and have the following functions:

- Collection of Export Notifications of chemicals in accordance with the Regulation on the import and export of hazardous chemicals;
- Approval by the NEMA of the requests for the issuance of the prior import consent in accordance with the Regulation on the import and export of hazardous chemicals;
- Generation of documents for Decisions to issue the prior import consent;
- Registration of export notifications for industrial POPs.

The export notification shall be a permissive act.

2.7.4 Compilation and evaluation of data and information

In the table below is summarized entire process on the data and information collection performed using two approaches. A “bottom-up” approach was used to collect data from specific sources, particularly from the state companies or private sector such as industrial sources, disposal and treatment of waste, and transformers, in which case there were data of activity levels or whose estimation was possible using the information available.

Official request from the NEMA to the public institutions, using “top-down” methodology was used for area sources, including the registration to put on market/ imports application of agrochemicals and the use of electric and electronic equipment with BFRs, for which there are available data at a national level and lesser level of disaggregation. This is done in the Environmental Impact Assessment Form and the Environment Audits

Table 11: Official request from the NEMA to the public institutions, using “top-down” methodology

<i>Public institution.</i>	<i>Activity Data.</i>	<i>Remarks</i>
Kenya Revenue Authority National Treasury.	Import of all chemicals listed in Annex A for 2015-2019	Makes on request
County Firefighting Departments	Use of chemicals in construction materials and in firefighting foams for 2015-2019: <ul style="list-style-type: none"> - PFOS in firefighting foams - HCBd in polystyrene - PCN and PCP in wood - SCCP in paints 	Official request pending

2.7.5 Challenges and limitations on data collection

While performing the gap analysis the major data sets on current situation were collected through desk review, analysis of the national reports under MEAs and the extraction of data from the economic operators' annual reports on chemicals and waste management, as well as from other freely available data sources (KNBS and KRA database, comtrade.org).

Interviews and some site visits were organized; however, it is expected to check for more accurate data in the period post-Gap report, in November 2020.

In the end bridging the gap and search for solutions shall be the important part of NIP update process, that will allow prioritization of POPs, determination of measures, calculation costs and benefits based on conditional probability. This update is expected to start in middle 2023.

3. GAPS RELATED TO THE DATA AND INFORMATION REQUESTED TO BE INCLUDED WITHIN THE ARTICLE 15 REPORT

3.1 General information

Kenya has ratified the Stockholm Convention on Persistent Organic Pollutants. It is implemented through coordination by ME&F as the National Focal Point.

Table 12: Government Ministries with POPs Chemicals Management Mandates

No	Government Ministries	Specialized Departments	Role	Legal Mandate /Data
2		KEPHIS	Plant Health Phytosanitary Certification. Bio-Fertilizer data, National monitoring program of pesticide residues in fresh produce for export market	Agriculture Act CAP 318, Plant Health Phyto-sanitary Certification,
		KALRO	Research in crops, Livestock, Genetic resources and biotechnology	, historical and current government research use and disposal data of pesticide POPs
		Veterinary Medicines Directorate (VMD)	Regulation of animal health care products	Veterinary Surgeons and Veterinary Para-Professionals CAP 366. Import, export, use and disposal data of veterinary use POP's
3	Ministry of Health	Department of Environmental Health and sanitation National malaria Control Program. KEMRI.	Protect public health through surveillance and control of environmental health risk factors Research on medical impacts Surveillance and control of environmental health risk factors.	Public Health Act Malaria Control Act/ Public Health Act, DDT in Public Health.
3	Ministry of Interior and Devolution	Government Chemist	Pesticide for yield Analysis	Food Drugs and Chemical Substances Act, Public Health Act. Presence of POPS in food and water, illegal use of POPS
	Ministry of Energy	Energy	Approve energy SAGA, Clean energy. sets strategic directions to facilitate the growth of the	policies that create an enabling environment for efficient operation and growth of Kenya's energy sector

			sector while providing long term vision for all sector players	
4	MECC&F	NEMA KEFRI	Overall Environment Policy Toxic Chemicals Focal Point, MEAs focal point	Government Policies on POPs NEMA enforces NEMA is focal for industrial POPS/EMCA.
	Ministry of Industry & Trade	Kenya Industrial Research Institute Kenya Bureau of Standards	Import, trade and production licensing Standards. Illegal transboundary movement	Customs and Exercise act. Standards Act UPOPS emission source
5	Ministry of Labor	Department of Occupational Health and Safety Services Devolution	Factory and chemicals use and Disposal. Counties and Municipalities	Health and Safety of workers

Description of Some Key law enforcement Agencies.

Table 13: Inventory of national institutions with a mandate on health and/or environment that address chemicals related issues

Institution Name	Type of Institution	Area covered	***Activities	
Ministry Of Health	Ministry	Risk effects	Governance	
Pharmacy and Poisons Board	Board	Risk Factor	Regulatory	
NEMA Board	Government	Risk factors	Regulatory	
Kenyatta Hospital	Referral Hospital	Risk effects	implementation	
Moi Hospital	Referral Hospital	Risk effects	Implementation	
PCPB	Government Regulatory	Risk factors/compliance	Regulatory	
Agrochemical of Kenya	Industry Association	Intervention	Implementation	
Kenya Association of Manufacture	Industry Association	Intervention	Implementation	
International Centre for Insect Physiology and Ecology (ICIPE)	Intergovernmental Research Centre Africa Regional Centre	Risk factors	Research	
Nairobi University	Coordinator for Africa GMP	Risk effects	Research	

Institute of Nuclear Research	Research on Environmental themes	Risk factors	Research	
KALRO	Government Research	Risk factors	research	
SGS	Certification	Intervention	Surveillance	
VMD	Government regulatory	Risk Factors	Regulatory	

In accordance to Art. 15, the Stockholm Convention national reports shall be submitted every four years and contain statistical data on its total quantities of production, import and export of each of the chemicals listed in Annex A and Annex B or a reasonable estimate of such data; and to the extent practicable, a list of the States from which it has imported each such substance and the States to which it has exported each such substance, as well as data on waste disposal for specific POPs.

Current status of reporting obligations of Kenya to SC are presented in the Table 2 below.

Table 14: Status Of reporting Obligations of Kenya to SC

SC Obligation	Status in Kenya
Stockholm Convention Art. 7 obligation of NIP development/update and transmission	2007 NIP elaborated 2014 NIP elaborated
Stockholm Convention Art. 15 reporting obligation	Cycle 1st reporting – not submitted Cycle 2 reporting - submitted Cycle 3 reporting – was not submitted Cycle 4 reporting – was not submitted Cycle 5 reporting –submitted in 2022.

Reporting requires national coordination and the collection of information and data from multiple stakeholders, including different ministries. The poor cooperation and weak collaboration between these stakeholders delay the gathering of the needed information for national reports and NIP updating.

Additionally, a key element of the reporting is the data collection on new POPs inventories and this task is rather challenging and demanding. It requires time, technical knowledge, organization of the data collected and financial support to execute the required activities (e.g., desk study, surveys, field trips to economic entities, data analysis). In particular, there are challenges in identifying the newly listed POPs in products and articles.

3.2 Qualitative information gaps

The Stockholm Convention national reports shall be submitted every four years and contain annual data on production, import, export, use and waste disposal /waste incineration for specific POPs.



Figure 5: *Quantitative Data to Be Reported for Specific Pops*

The reporting under the Stockholm Convention is rather challenging for Kenya. The data collection systems are recently established: which will allow to collect data on of the 20 POPs

and – data on POPs containing waste. There is lack of data regarding newly listed POPs and insufficient monitoring data on industrial chemicals including the unintentional production.

It should be also noted that, the acceptance of amendments to the SC Convention is rather difficult process, due to the fact that the EMCA is not explicitly on the Stockholm Convention includes the provision under Art. 1 - ratify the Stockholm Convention on Persistent Organic Pollutants, adopted on 22 May 2001 in Stockholm (Sweden) and signed by Kenya on 23 May 2001

Table 15: *identified qualitative information gaps within the art. 15 reports submitted by Kenya*

Qualitative information reporting requirements		Status	Remarks	What should be done
Part A: General information		No gap		
Part B: Information on the measures taken by the Party to implement the provisions of the Stockholm Convention and on the effectiveness of such measures in meeting the objectives of the Convention				
Section I Implementation plans (Article 7)	<ul style="list-style-type: none"> - the status of development, update and transmission of NIP; - financial assistance received, as well as the GEF Agency providing the assistance; - NIP review and update triggers; 	Partial gap First NIP submitted in 2004 Updated in 2014	NIP 2014 needs to be updated Information partially shared with stakeholders	NIP needs to be updated from 2014 to 2022. Enhance the sharing of information
Section II. Article 3: Measures to reduce or eliminate releases from intentional production and use	legal and administrative measures necessary to eliminate releases from intentional production and use of chemicals listed in Annex A, or restrict the production and use of the chemicals listed in Annex B to the Convention	All initial pesticides addressed All additional ones addressed largely	Draft Regulation 2018 Waste Regulations. PCP Act Cap 346	Update 2018 draft regulations Approve POPs regulation
	measures to regulate new pesticides or new industrial chemicals (i.e. chemicals that have not yet been introduced in the market or registered in the country);	taken	Registration Regulations	

	Consideration the criteria in paragraph 1 of Annex D when conducting assessments of pesticides or industrial chemicals currently in use;	Partial		
Section III. Article 4: Register of specific exemptions; Annex A and Annex B,	Notification the Convention Secretariat to register for specific exemptions listed in Annex A or Annex B or for acceptable purposes listed in Annex B?	The secretariat has not been notified of any exemptions.		More comprehensive needs analysis for new pops.
Section IV. Article 5: Measures to reduce or eliminate releases from unintentional production.	Evaluation of the efficacy of the laws and policies adopted to manage releases of unintentionally produced persistent organic pollutants, in accordance with paragraph (a) (ii) of Article 5 of the Convention?	Partially done during the first update of the NIP in 2014.	No regulations addressing specific POPs 4 counties made a roadmap in 2020 to minimize open burning of waste including POPs pesticides	There is need to fast track the gazettelement of draft regulations to improve POPs management.
	promotion or introduction requirements for use of best available techniques (BAT) and best environmental practices (BEP) for new sources and existing sources, in accordance with paragraphs	Extensively done for health care waste under the POPs	Draft POPs regulation, draft IED law/regulation	Promote BAT/BEP guidelines for open burning of waste.

	(d) and (e) of Article 5 of the Convention? New Sources/ Existing Sources.	Programme		
Section V. Article 6: Measures to reduce or eliminate releases from stockpiles and wastes	strategies for identifying stockpiles consisting of, or containing, chemicals listed in either Annex A or Annex B to the Convention, in accordance with paragraph 1 (a) (I) of Article 6 of the Convention	Identification was done through partial inventory which was part of NIP	Comprehensive inventory has not been done.	There is need to do a comprehensive inventory and NIP update.
	Identification and quantification of stockpiles consisting of, or containing, chemicals listed in Annex A or Annex B to the Convention, in accordance with paragraph 1 (b) of Article 6 of the Convention?	Partially done during the NIP 2014 .	Identification was done but quantification was not.	There is need to a comprehensive inventory and NIP update. Information on stockpiles to be checked in annual env reporting
	Measures to manage stockpiles in a safe, efficient and environmentally sound manner, in accordance with paragraph 1 (c) of Article 6 of the Convention	Partially done in 2016. Pesticide stockpiles shipped to the UK for safe destruction.	Incomplete inventory of stockpiles. No legislation on reporting on stockpiles. Inadequate capacity for destruction of stockpiles.	Conduct comprehensive stockpile inventory. Fast track gazettelement of the draft chemicals and waste regulations to promote reporting on stockpiles

			part of NIP , 2004, and 2014 other regulations measures, export of stockpiles	
	strategies for identifying products and articles in use and wastes consisting of, containing, or contaminated with chemicals listed in Annex A, B or C, in accordance with paragraph 1 (a) (ii) of Article 6 of the Convention?	There is a significant gap in dealing with identification of POPs in products and articles.	Lack of labeling in products and articles containing POPs.	Update strategies in NIP update 2023.
	measures to manage wastes, including products and articles upon becoming wastes, in accordance with paragraph 1 (d) of Article 6 of the Convention?	Partial measures implemented	part of NIP, 2004, and other legislative measures (Law on waste, Law on chemicals, PCB regulation, draft POPs regulation, etc.)	Promote POPs regulation, update Law on waste

	Disposal of wastes consisting of or containing chemicals listed in Annex A, B, or C to the Convention in an environmentally sound manner, in accordance with paragraph 1 (d) (ii) of Article 6 of the Convention?	No gaps	Export notifications	
	strategies for identifying sites contaminated by chemicals listed in Annex A, B or C, in accordance with paragraph 1 (e) of Article 6 of the Convention?	Partial	part of NIP, 2004,	Update 2014 NIP and strategies for new PoPs
	Sites contaminated by chemicals listed in Annex A, B or C, in accordance with paragraph 1 (e) of Article 6 of the Convention?	No gaps	part of NIP, 2004 and 2014	Update NIP

Qualitative information reporting requirements		Status	Remarks	What should be done
	taken steps to remediate the sites contaminated by chemicals listed in Annex A, B or C, in accordance with paragraph 1 (e) of Article 6 of the Convention	Partial		
Section VI. Information required in paragraph 2 of Article 15 of the Convention.			Kenya does not produce or use DDT. But it has not been reported as per para 4 of Part II of annex B	Report as per
Information on DDT	Submission of report on the production and use of DDT in a format provided by the Secretariat in accordance with paragraph 4 of Part II of Annex B	Gaps		
Section VII. Article 9:	Establishing an information exchange	No gaps	part of NIP, 2004	Update

Information exchange	mechanism, in accordance with Article 9 of the Convention			NIP/National Programme
Section VIII. Article 10: Public information, awareness and education.	Measures to implement Article 10 of the Convention. For pesticides the PCPB Technical Committee of the Board advises the board on the listing under SC or PIC. Then the Board decides and decision is published in the official government website and Agro-Chemical Industry is notified	No gaps	Part of NIP, 2004 , PRTR Register leaflets, booklets, publications and part of activities especially communication strategy on chemicals and waste	Update NIP on the PCPB procedures on pesticides Programme/upgrade the PRTR reporting List
Section IX. Article 11: Research, development and monitoring	Research, development, and monitoring and cooperation pertaining to persistent organic pollutants, and where relevant, to their alternatives and to candidate persistent organic pollutants, in accordance with Article 11 of the Convention?	Research on alternatives and candidates POPs is not adequate.	Monitoring under GMP ongoing, MEF developing Kenya Monitoring Protocol on Sources and releases of POPs into the environment. Presence, levels and trends in human health and the environment. Host to ICIPE a regional technical transfer center under the Stockholm Convention that shares research on non-chemical alternatives	Promote research on alternatives and candidate POPs. Promote research on restoration of contaminated sites. There is need for research on POPs in articles and product and in humans.
Part C: Information on progress in eliminating polychlorinated biphenyls (PCB) in accordance with subparagraph (g) of Part II of Annex A to the Convention.				

Section I. Article 6: Measures to reduce or eliminate releases from stockpiles and wastes	Strategies for identifying stockpiles consisting of or containing greater than 0.005% (50 ppm) PCB, in accordance with paragraph 1 (a) (i) of Article 6 of the Convention?	gaps	Part of 2004 NIP, and followed in 2014 update. But no further action	Develop Programme Request for technical support
	Strategies for identifying products and articles in use and wastes consisting of, containing or contaminated with greater than 0.005% (50 ppm) PCB, in accordance with paragraph 1 (a) (ii) of Article 6 of the Convention?	gaps		Develop Programme Request for technical support from GEF and the other.
	Strategies for identifying products and articles containing more than 0.005% (50 ppm) PCB contaminated through open applications of PCB (e.g., cable-sheaths, cured caulk and painted objects), in accordance with paragraph 1 (a) (ii) of Article 6 and paragraph (f) of Part II of Annex A to the Convention measures to ensure PCB or products and articles containing greater than 0.005% (50 ppm) PCB identified as wastes are managed in an environmentally sound manner, in accordance with paragraph 1 (d) of Article 6 of the Convention?	gaps	Awaiting Reports from KPLC	Develop Programme Request for technical support from KPLC, KenGen -Private
	strategies for identifying sites contaminated by greater	gaps		Need to identify

	than 0.005% (50 ppm) PCB, in accordance with paragraph 1 (e) of Article 6 of the Convention?			
	identified sites contaminated by greater than 0.005% (50 ppm) PCB, in accordance with paragraph 1 (e) of Article 6 of the Convention?	gaps		Need to identify
Section II. Part II of Annex A: Polychlorinated biphenyls	Measures to identify and label, where appropriate, equipment in use containing greater than 0.005% (50 ppm) PCB, in accordance with paragraph (a) of Part II of Annex A?	gaps	Done in 2007 but has not been followed	Formulate project to phase out PCBs
	measures to identify and/or label, where appropriate, wastes liable to contain greater than 0.005% (50 ppm) PCB, in accordance with paragraph (a) of Part II of Annex A to the Convention?	gaps		Formulate project to phase out PCBs
	Identify and manage them in accordance with para 1 of Article 6 the articles containing more than 0.005% (50 ppm) PCB contaminated through open applications of PCB (e.g., cable-sheaths, cured caulk and painted objects) in accordance with paragraph (f) of Part II of Annex A to the Convention	Gap		Formulate project to phase out PCBs
	specific plan for the management, phase-out and disposal of PCB difficulties in the implementation of the specific plan for the	gap	GD 81/2009 on PCB, inventory, but the deadline for PCB phase out as per 2020 is not achievable	

	management, phase-out and disposal of PCB			
	measures to reduce exposures from the use of PCB, in accordance with paragraph (b) of Part II of Annex A to the Convention?	gaps	GD 81/2009 on PCB, inventory of PCB	
	PCB in equipment (e.g., transformers, capacitors or other receptacles containing liquid stocks), articles, oils and waste?		<p>1.Restrictions and prohibitions shall not apply to:</p> <ul style="list-style-type: none"> ● PCB concentrations of PFOS less than or equal to 10 mg / kg (0.001 percent by mass) present in substances or preparations; ● concentrations in semi-finished products or articles or components thereof, if the PFOS concentration is less than 0.1 weight percent, calculated in relation to the mass of structurally or microstructurally 	Furthermore, and in order to update the NIP, there is need to collect data on products (import and export data) containing PFOS and relayed salts in order to carry out quantitative analysis, and also to report on environmental levels. NIP for PFOS and PFOA needs to be updated. New NIP.
Part D: Information specifically on the progress made in eliminating perfluorooctane sulfonic acid, its salts and	Registering for any of the specific exemptions related to PFOS listed in Annex B to the Convention (information on status and type of specific exemption);	There are gaps		

perfluorooctane sulfonyl fluoride in accordance with paragraph 3 in Part III of Annex B to the Convention.	registering for any of the acceptable purposes related to PFOS listed in Annex B to the Convention (information on status and type of acceptable purpose);		distinct components containing PFOS or textiles or other coating materials, where the PFOS is less than 1 µg/m ² of coating material. 2. Articles already in use containing PFOS as a constituent of these articles may continue to be used. When dealing with such articles, the operator shall notify without undue delay the central environmental authority of the public administration of the presence of PFOS in the managed articles	for PFHxS needs to be made. To develop new inventory
	Reviewing the continued need for the specific exemption(s) and/or acceptable purpose(s) (information on status and details of review);	Gap	There is need to include PFHxS and PFOA related substances that were also listed. To support ongoing work on PFOs. Develop a national action plan on PFO	Inventory is needed To be included in the NIP update <i>Inventory of PFOS is in process</i>
	Development and implementation of an action plan with the goal of reducing and ultimately eliminating the production and/or use of PFOS, as Parties are encouraged to do in accordance with paragraph 4 (b) of			

	<p>Part III of Annex B (information on status and year);</p>			
	<p>actions to phase out the use of PFOS as safer alternative substances or methods have become available, as Parties are encouraged to do in accordance with paragraph 4 (a) of Part III of Annex B (information on status, types of alternative substances or methods or difficulties encountered);</p>			
	<p>taking action to promote research on and development of safe alternative chemicals and non-chemical products and processes, methods and strategies to the use of PFOS as parties are encouraged to do so in accordance with paragraph 4 (c) of Part III of Annex B (information on status, types of actions or difficulties encountered);</p>			
	<p>taking action to build the capacity to transfer safely to reliance on alternatives to PFOS, its salts and PFOSF in accordance with paragraph 5 (d) of Part III of Annex B (information on status or difficulties encountered);</p>			

3.3 Quantitative data gaps

The quantitative data gaps were assessed against each of the reporting sections. The reporting obligations cover mostly chemicals that were already addressed at national level, such as pesticides, PCB, uPOPs and DDT.

According to provisions of the NIP, PCBs have never been produced in Kenya, all of them being imported. Their utilization in some sectors was discontinued or prohibited in the 1980s. However, PCBs continue to be used in power installations and other types of equipment. Unfortunately, the requisite monitoring and labelling as per the convention is not regularly done.

An inventory of POPs obsolete stocks including DDT and DDT-contaminated wastes was carried out in 2002-2007 when developing NIP within the WB Project (GEF-PPG Grant. TF051208) “Enabling activities related to the implementation of the Stockholm Convention on Persistent Organic Pollutants”.

During the NIP implementation and national inventory and mapping of POPs polluted areas, including DDT, has been carried out in 2008-2010 within the Crop life and WB Project (GEF Grant TF055875) “POPs Stockpiles Management and Destruction”. The project was implemented by the UK in partnership with PCPB and Agrochemicals Association of Kenya. The work done then within the project included risk analysis and a feasibility study for remedial measures, including possibilities to remove the POPs and export the obsolete pesticides to UK for environmentally sound disposal.

Since the first PCDD/PCDF inventory was completed in 2004, an update of the POPs inventories is required to comply with the new obligations related to the listing of new substances in the Stockholm Convention, as well as to apply updated emission factors made available in the new versions of UNEP Toolkit. In frames of UNEP/SP project “mainstreaming sound chemicals management and UPOPs Reduction in Kenya. Thee UPOPs assessment was done for supporting minimization of open burning of waste from health care waste.

Therefore, the second multi-media inventory, performed within this project the Project, included releases to air, land and water for PCDD/PCDF, HCB and PCBs. These emission data present a general picture of emissions of individual POP substances in quantitative terms for the reporting years: 2001, 2004, 2008, 2012, 2016, 2018.

As regard to PFOS the quantitative data assessment on environmental levels is undergoing currently, collected data and Masinde Mulilo university continues to collect data and information.

Table 16: *Identified quantitative data gaps within the art. 15 reports submitted by Kenya*

Quantitative data gaps reporting requirements		Status	Remarks	What should be done
Part B: Information on the measures taken by the Party to implement the provisions of the Stockholm Convention and on the effectiveness of such measures in meeting the objectives of the Convention.				
Section IV. Article 5: Measures to reduce or eliminate releases from unintentional production (PCDD/PCDF)	source inventories and release estimates of PCDD/PCDF;	No gap		Inventory for 2001-2018 is in process of development
	inventory of polychlorinated biphenyls (PCB) (kg/year)?	2004 data only	Inventory of PCB	update the inventory – <i>in process</i>
	inventory of pentachloro benzene (kg/year)	gap	Is not used as pesticide, nor in stocks - confirmed by NFSA	
	inventory of hexachlorobenzene (kg/year)			
	polychlorinated naphthalene's (PCN)	gap		<i>Not in process</i>
Section X. Article 12: Technical assistance	Providing technical assistance to another Party, in accordance with Article 12 of the Convention Receiving technical assistance in accordance with Article 12 of the Convention	No Gap	No support provided but Kenya hosts ICIPE a Stockholm Convention Regional Centre.	Some PCB containing oil& equipment was treated/ or included in company's operational plans for further treatment in

			Kenya coordinated for Africa the GMP	upcoming period GEF project proposal - Introduction of BAT and BEP methodologies to reduce or eliminate unintentionally produced POPs released from municipal HCW 1
Section XI. Article 13: Financial resources and mechanisms	provide, within its capabilities, financial support and incentives in respect of those national activities that are intended to achieve the objectives of the Convention in accordance with your national plans, priorities and programmes, pursuant to paragraph 1 of Article 13 of the Convention?	No Gap	National Environment Facility projects proposed. implemented and completed	Necessary to list all the projects being implemented and whether there are any which could be regional e.g., on DDT
	Providing financial resources to enable developing country Parties and Parties with economies in transition to fulfill their obligations under the Convention, in accordance with paragraphs 2 and 3 of Article 13 of the Convention?	No gap	No support provided	No action Required being a developing country

	Provided financial resources in accordance with its capabilities and in accordance with its national plans, priorities and programmes, to assist developing countries and countries with economies in transition in their implementation of the Convention through other bilateral, regional and multilateral sources or channels, in accordance with paragraph 3 of Article 13 of the Convention?	No gap	No support provided but Kenya has received	Has developed project concept for GEF, special project and National/regional levels
	PART C: Information on progress in eliminating polychlorinated biphenyls (PCB) in accordance with subparagraph (g) of Part II of Annex A to the convention			
Section II. Part II of Annex A: Polychlorinated biphenyls	identification of articles and materials containing more than 0.005% (50 ppm) PCB contaminated through open applications of PCB (data on type of article and year/period);	Gap	Develop project or a strategic plan	Project formulation
	proportion of waste containing greater than 0.005% (50 ppm) PCB identified in your country is managed in an environmentally sound manner (data on proportion of articles identified, year in which the environmentally sound management was completed and proportion of waste environmentally sound managed);	Gap	Develop project or a strategic plan	Concept awaiting approval

	equipment containing greater than 10% (100,000 ppm) PCB and volumes greater than 5 liters (status of equipment, year of inventory, number of equipment, total mass of equipment [kg], mass of solid parts of equipment (equipment without oil) [kg], mass of liquids (oil) [kg], PCB content in oil (%) and total mass (kg));	Gap	Develop project or a strategic plan	Concept attached
	equipment containing greater than 0.05% (500 ppm) PCB and volumes greater than 5 liters (status of equipment, year of inventory, number of equipment, total mass of equipment [kg], mass of solid parts of equipment (equipment without oil) [kg], mass of liquids (oil) [kg], PCB content in oil (%) and total mass (kg));	gap	Develop project or a strategic plan	Attached
	equipment containing greater than 0.005% (50 ppm) PCB and volumes greater than 0.05 liters (status of equipment, year of inventory, number of equipment, total mass of equipment [kg], mass of solid parts of equipment (equipment without oil) [kg], mass of liquids (oil) [kg], PCB content in oil (%) and total mass (kg));	Gap	Develop project or a strategic plan	Attached Subject to PCB inventory update, deadline for phasing out specified in GD 81.2009 is 31 dec 2020
	equipment containing an undefined concentration of PCB (status of equipment, year of inventory, number of equipment, total mass of equipment [kg], mass of solid parts of equipment (equipment without oil) [kg], mass of liquids (oil) [kg], PCB content in oil (%) and total mass (kg));	Gap		

	stored liquids (oil) containing PCB (status of equipment, year of inventory, number of equipment, total mass of equipment [kg], mass of solid parts of equipment (equipment without oil) [kg], mass of liquids (oil) [kg], PCB content in oil (%) and total mass (kg));	Gap		See above
	other wastes containing PCB (status of equipment, year of inventory, number of equipment, total mass of equipment [kg], mass of solid parts of equipment (equipment without oil) [kg], mass of liquids (oil) [kg], PCB content in oil (%) and total mass (kg));	Gap		See above
Section III. Information on local destruction and import and export of PCB for destruction				
	locally destroyed, in an environmentally sound manner, equipment, liquids, or other wastes containing greater than 0.005% (50 ppm) PCB (e.g., transformers, capacitors or other receptacles containing liquid stocks) identified in your country?	Gap	no capacity to destroy PCB waste	Project formulation
	equipment, liquids, or other wastes containing greater than 0.005% (50 ppm) PCB for environmentally sound destruction?	No gap	No import	Project formulation
	exported equipment, liquids, or other wastes containing greater than 0.005% (50 ppm) PCB (e.g., transformers, capacitors or other receptacles containing liquid stocks) for environmentally sound destruction?	No gap	Export notifications	

Part D: Information specifically on the progress made in eliminating perfluorooctane sulfonic acid, salts and perfluorooctane sulfonyl fluoride in accordance with paragraph 3 in Part III of Annex B to the Convention	statistical data on production of PFOS for the acceptable purposes listed in Annex B of the Convention (status, year, type of acceptable purpose and estimated total production (kg));	No gap	No production /only input	See report on industrial pops
	statistical data on your country's production of PFOS for the specific exemptions listed in Annex B of the Convention (status, year, type of specific exemption and estimated total production (kg));			
	statistical data on use of PFOS for the acceptable purposes listed in Annex B of the Convention (status, year, type of acceptable purpose and estimated total production (kg));	Partial	See Nip 2014 inventory	<i>Inventory of potential articles with PFOS is in process</i>

4. GAPS RELATED TO THE DATA AND INFORMATION REQUESTED TO BE INCLUDED WITHIN THE NIP

4.1 General Information

As regards to the status of the NIP(NIP) the 2004 NIP approved by the GoK in 2004) provided a policy and legal framework, status quo of the initially listed POPs within Kenya and described concrete interventions to reach the national objectives and priorities regarding the management of POPs, and to meet the obligations taken by Kenya under the Stockholm Convention.

The NIP is to define the list of the actions that have been reflected within both policy and regulatory country documents, developed further. As such, the SAICM NIP the listed activities related to needs and priorities for SC implementation.

As a Party to the Convention and in response to the commitment regarding the recently added new POPs, Kenya is intending to review and update the current version of the NIP. The NIP2007 addressed the twelve (12) POPs initially listed on the Stockholm Convention, 2015 reviewed and update the 9 but the additional POPs have not been reviewed. NIP 2014 addressed.

As it was noted in the section above, due to circumstance that arise from the EMCA and relevant statement regarding amendment to Annexes A, B or C, Kenya did not manage to accept the amendments, because of lack of the detailed information of the country's situation with reference to the new listings within the Annexes A, B, C (inventory, costs, etc.). As a result, up to date Kenya updated the first NIP in 2014, consequently there is a big gap that will need to be covered in the third NIP update to be carried in 2023. This 3rd NIP should start by May 2023.

The GEF Project “**Review and Update of the NIP in Kenya**” of 2022 is about to be signed between the ME&F, UNEP and National Treasury in project implementation. The NIP update process will investigate the extent to which the measures listed in the NIP 2007 and the update of 2014 to the current listed Pops have been achieved, and will establish an inventory of products and articles containing new POPs identifying where new POPs are employed or unintentionally produced.

The NIP2023 update process will enable Republic of Kenya to establish inventories of products and articles containing the newly listed POPs and identify the industrial processes where these POPs are still employed or unintentionally produced. The NIP 2023 update will build on existing national coordination mechanisms and capacities established during the original NIP development and will take into consideration assessments done within project UNEP/GEF project entitled the Project.

Table 5 below summarizes general information about deadlines for transmission of NIP updates in Kenya, number of NIPs prepared and sent by Kenya up to date.

Table 17: *NIP transmission status in Kenya, as of November 2020*

NIPs	Deadline for transmission	Date NIPs were received	Delay
	Initial 12 POPs		
Initial NIP	06 July 2006	15 August 2007	None
	Addressing COP 4 amendments		
NIP 1 st update	14 August 2014	sent	none
	Addressing COP 5 amendments		
NIP 2 nd update	18 November 2015	Not sent	Above 6 years
	Addressing COP 6 amendments		
NIP 3 rd update	Not indicated on the Secretariat website	Not sent	Above 6 years
	Addressing COP 7 amendments		
NIP 4 th update	Not indicated on the Secretariat website	Not sent	Above 6 years
	Addressing COP 8 amendments		
NIP 5 th update	18 December 2020	Not sent	Above 6 years

4.2 Qualitative information gaps

As it was mentioned in the table above, the initial NIP was transmitted in 2007, being prepared during the period 2002-2007. At that time, under the Stockholm Convention there were only the initial 12 POPs, which were subject of NIP.

Since adding to the Annex, A and B of the Convention with the new POPs, Kenya has updated its NIP once i.e., 2014. the 2020 update it is missing, and therefore this information is obviously missing from the initial NIP.

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Table 18: Identified qualitative information gaps within the NIPs submitted by Kenya

NIP qualitative information requested to be included in the NIP		Status within initial NIP submitted by Moldova	Implications for the NIP update process
Chapter/ sub-chapter	Information to be generated		Current status/challenges
1. Introduction	<ul style="list-style-type: none"> ✓ the status of development, update and transmission of NIP; ✓ financial assistance received, as well The GEF Agency providing the assistance; ✓ NIP review and update triggers; 	✓ Initial NIP – transmitted in 2005	<ul style="list-style-type: none"> ✓ Bilateral projects implementation reports ✓ Ratification clause on SC by GoK - challenge on new ✓ NIP update
2. Country baseline			
2.1 Country profile	<ul style="list-style-type: none"> ✓ Summary information on geography and population, ✓ Membership in regional and sub-regional organizations, ✓ The country’s political and economic profile, profiles of potentially important economic sectors in the context of the POPs issue, and overall environmental conditions and priorities in the country; 	✓ No gap	✓ Will be updated to include county roles

2.2 Institutional, policy, and regulatory framework	description of institutional, policy and regulatory frameworks;	✓ No Gap	✓ Need to be updated to include new polices, pieces of legislation and related guidelines
2.3.1 Assessment of POPs pesticides (Annex A, Part I)	disposal and destruction options for POPs pesticides stockpiles and wastes; sites potentially contaminated with POPs pesticides;	✓ Included	✓ Regularly update
2.3.2 Assessment of PCBs (Annex A, Part II)	<ul style="list-style-type: none"> ✓ legal, institutional, regulatory, and enforcement systems for PCBs management, including for contaminated sites; ✓ possibilities for integration of the management of PCB-containing articles in the overall waste management; condition and operation of PCB containing equipment; ✓ suitable controls on the movement, maintenance, and handling of any equipment containing PCBs; availability of appropriate waste management systems; ✓ appropriate and effective monitoring and reporting of PCB equipment use, movement, sale, and disposal; 	✓ included	<ul style="list-style-type: none"> ✓ Assessment of status of implementation of PCB Regulation ✓ Not done ✓ Urgent ✓ Urgently required

	<ul style="list-style-type: none"> ✓ data gaps and deficiencies in the knowledge on for PCBs management; ✓ disposal and destruction options for PCBs stockpiles and wastes; sites potentially contaminated with PCBs; 		<ul style="list-style-type: none"> ✓ Urgently required
2.3.3 Assessment of POP PBDEs (Annex A, Part IV and Part V), HBB (Annex A, Part I) and HBCD (Annex A, Part I and Part VII)	<ul style="list-style-type: none"> ✓ To be Added 	<ul style="list-style-type: none"> ✓ included – in NIP update 2014 and not subject of ✓ initial NIP 	<ul style="list-style-type: none"> ✓ Pending Toxic Chemicals 2018 regulation approval ✓ Lack of data on HBCD, PCN, HBB status in country
2.3.4 Assessment of HCBD (Annex A, Part I)	<ul style="list-style-type: none"> ✓ To be done 	<ul style="list-style-type: none"> ✓ Included – not subject of initial NIP 	<ul style="list-style-type: none"> ✓ PIC regulation – transpose of Annex 3
2.3.5 Assessment of PCNs (Annex A, part I)	<ul style="list-style-type: none"> ✓ To be done 	<ul style="list-style-type: none"> Included – not subject of initial NIP. 	<ul style="list-style-type: none"> ✓ Law on Waste – No action
2.3.6 Assessment with respect to DDT (Annex B, Part II)	<ul style="list-style-type: none"> ✓ To be done 	<ul style="list-style-type: none"> ✓ Included – subject of ✓ Initial NIP. Focus is on non-chemicals alternatives 	<ul style="list-style-type: none"> ✓ DDT is not being used. There exists a policy document on DDT in the MOH. No chance of its use
2.3.7 Assessment of PFOS, its salts and PFOSF (Annex B Part III)	<ul style="list-style-type: none"> ✓ Revision 	<ul style="list-style-type: none"> ✓ Included – not subject of initial NIP but NIP2 	<ul style="list-style-type: none"> ✓ Need to focus on alternatives ✓ Monitoring being done by Masinde Muliro University ✓ More detailed inventory is required. NIP needs to be updated
2.3.8. Assessment of PFOA, and related	<ul style="list-style-type: none"> ✓ information on the development of source 	<ul style="list-style-type: none"> ✓ included – not subject of ✓ initial NIP 	<ul style="list-style-type: none"> ✓ Monitoring being done by Masinde Muliro University

chemicals (Annex B, Part III)	inventories and release estimates status and difficulties encountered		
	✓ existing laws and policies relating to the management of releases of unintentionally		More detailed inventory is required. NIP needs to be updated.
	✓ produced persistent organic pollutants and their effectiveness and deficiencies;		
	✓ situation regarding BAT/BEP implementation within industries and facilities listed in Annex C;		
	✓ sites potentially contaminated with U-POPs.		
2.3.9 Assessment of PFHxS, (Annex A, Part III)	<ul style="list-style-type: none"> ✓ strategies for identifying products and articles in use consisting of, or containing, chemicals listed in either Annex A or Annex B to the Convention ✓ strategies for identifying stockpiles consisting of, or containing, chemicals listed in either Annex A or Annex B to the Convention; ✓ strategies for identifying waste consisting of, or containing, chemicals listed in 	<ul style="list-style-type: none"> ✓ Recently listed ✓ Need to be updated 	<ul style="list-style-type: none"> ✓ Monitoring being done by Masinde Muliro University ✓ More detailed inventory is required. NIP needs to be updated with this chemical added

	<p>either Annex A or Annex B to the Convention;</p> <ul style="list-style-type: none"> ✓ measures to identify and label, where appropriate, POP-containing products and articles in use; ✓ measures to identify and label, where appropriate, waste containing POPs; ✓ measures to identify and label, where appropriate, POPs in open applications; ✓ measures to manage products, articles, stockpiles and wastes in a safe, efficient and environmentally sound manner; ✓ system(s) for management of stockpiles and wastes; ✓ measures and modalities of storage, labeling, handling, transportation of products and articles, stockpiles and waste; ✓ progress in eliminating the POPs listed in Annexes A and/or B; ✓ strategies for identifying sites contaminated by chemicals listed in Annex A, B or C; ✓ system for management of contaminated sites; 		
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	<ul style="list-style-type: none"> ✓ steps taken to remediate the sites contaminated by chemicals listed in Annex A, B or C; 		
<p>2.3.10 Assessment of releases of unintentional produced chemicals (Annex C)</p>	<ul style="list-style-type: none"> ✓ necessity to register for the allowed specific exemptions for POPs pesticides; ✓ necessity to register for the specific exemption on recycling of articles that contain or may contain POP-PBDEs and use of articles manufactured from recycled materials that contain or may contain POP- PBDEs; ✓ necessity to register for the specific exemption on production and use of HBCD in expanded polystyrene and extruded polystyrene in buildings; ✓ necessity to register for the allowed PFOS and related chemicals specific exemptions and acceptable purposes; ✓ necessity to register for the specific exemption on production and use of PCNs in the production of polyfluorinated naphthalene's, including octafluoro naphthalene; 	<ul style="list-style-type: none"> ✓ included – preliminary inventory ✓ of PCB, POPs pesticides, release of uPOPs, ✓ To be included in the updated NIP 	<ul style="list-style-type: none"> ✓ Use Climate Change NIR data as a basis for estimation of releases.

	<ul style="list-style-type: none"> ✓ existing laws and policies relating to the management of releases of unintentionally produced persistent organic pollutants and their effectiveness and deficiencies; 	<ul style="list-style-type: none"> ✓ Not included – mentioned that no specific legislation exists 	<ul style="list-style-type: none"> ✓ Included in the new updated HCW policies and legislation ✓ Open burning restricted under the Air Quality Regulations 2014
	<ul style="list-style-type: none"> ✓ situation regarding BAT/BEP implementation within industries and facilities listed in Annex C; 	<ul style="list-style-type: none"> ✓ included – mentioned that no specific legislation exists 	<ul style="list-style-type: none"> ✓ No provisions ✓ Some work on National Cleaner Production Center within Moccia and at KIRDI but not necessarily on POPS
	<ul style="list-style-type: none"> ✓ sites potentially contaminated with UPOPs. 	<ul style="list-style-type: none"> ✓ Both NIPs identified many sites contaminated with UPOPs 	<ul style="list-style-type: none"> ✓ Conduct assessment

<p>2.3.11 Information on the state of knowledge on stockpiles, contaminated sites and wastes, identification, likely numbers, relevant regulations, guidance, remediation measures, and data on releases from sites</p>	<ul style="list-style-type: none"> ✓ Strategies for identifying products and articles in use consisting of, or containing, chemicals listed in either Annex A or Annex B to the Convention; ✓ Strategies for identifying stockpiles consisting of, or containing, chemicals listed in either Annex A or Annex B to the Convention; ✓ Strategies for identifying waste consisting of, or containing, chemicals listed in either Annex A or Annex B to the Convention; ✓ measures to identify and label, where 	<ul style="list-style-type: none"> ✓ Included for NIP 2004/2014 ✓ Awaiting Rehabilitation of Sheep and Goats facility at Kitengela and elimination of persistent organic pollutants and the National Plan for the implementation of the Stockholm Convention on POPs expired. In Nakuru Gioto and Mombasa Kibarani dumpsites. 	<ul style="list-style-type: none"> ✓ Annual reports by AAK on implementation of National Strategy on Reducing risks from POPs stockpiles, ✓ Update of the contaminated sites database www.Pops.Kenyapos.md ✓ Interviews of regulators to assess the knowledge status POPs pesticide repackaging and disposal project for FARM ✓ Awaiting guidance from Kenya Power and Lighting on Verification of PCB contaminated equipment labelling according to PCB regulation national. ✓ GEF project for disposal in process
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	<ul style="list-style-type: none"> ✓ appropriate, POP-containing products and articles in use; ✓ measures to identify and label, where appropriate, waste containing POPs; ✓ measures to identify and label, where appropriate, POPs in open applications; ✓ measures to manage products, articles, stockpiles and wastes in a safe, efficient and environmentally sound manner; ✓ system(s) for management of stockpiles and wastes; ✓ Measures and modalities of storage, labeling, handling, transportation of products and articles, stockpiles and waste; ✓ progress in eliminating the POPs 			<ul style="list-style-type: none"> ✓ Updating Strategy on POPs based on new SC guidance documents ✓ Approximately 100 contaminated sites identified within information system on contaminated soils: pops.Kenyapops.md, among which the laboratory testing performed 10 POPs were monitored (no Dioxin and Furans) and only five POPs (groups of) compounds namely Σ DDT, Σ HCH, Chlordane, Heptachlor and Toxaphene have been found and included in database. ✓ National Classification System for Contaminated Sites needed. ✓ Updating Strategy on POPs based on new SC guidance documents needed ✓ Promoting case studies on POPs site
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	<p>listed in Annexes A and/or B;</p> <ul style="list-style-type: none"> ✓ Strategies for identifying sites contaminated by chemicals listed in Annex A, B or C; ✓ system for management of contaminated sites; ✓ steps taken to remediate the sites contaminated by chemicals listed in Annex A, B or C; 			<p>remediation and safe storage of POPs stocks/waste as is currently.</p>
<p>2.3.12 Summary of future production, use, and releases of POPs -requirements for exemptions</p>	<ul style="list-style-type: none"> ✓ ✓ necessity to register for the allowed specific exemptions for POPs pesticides; ✓ necessity to register for the ✓ specific exemption on recycling of articles that contain or may contain POP-PBDEs and use of articles manufactured from recycled materials that 	<ul style="list-style-type: none"> ✓ No need for exemption for POP pesticide for agricultural use. ✓ Included – not subject of initial NIP Detailed analysis not done ✓ included – not subject of initial NIP 		<ul style="list-style-type: none"> ✓ No need for exemptions for listed POPs pesticides at this time. ✓ No local production is envisaged, yet the use of some articles containing POPs, for instance PFOS, PCN must be studies ✓ Investigation of share / % of market on articles

	<ul style="list-style-type: none"> ✓ contain or may contain POP PBDEs; ✓ necessity to register for the ✓ specific exemption on production and use gap 			<p>containing POPs that can be subject of recycling locally</p>
<p>2.3.13 Current level of information, awareness, and education among target groups; existing systems to communicate such information to the various groups;</p>	<ul style="list-style-type: none"> ✓ level of information, awareness, and education among target groups on POPs negative effects on human health and environment; ✓ existing systems to communicate the negative effects of POPs on human health and environment to the various groups; ✓ awareness raising among communities and households on safety issues relating to ✓ DDT use in disease vector control; 	<ul style="list-style-type: none"> ✓ No gaps ✓ Communication strategy ✓ Awareness materials produced 	<ul style="list-style-type: none"> ✓ UPOPS project and HESA 	<ul style="list-style-type: none"> ✓ Need to promote cooperation with academia and NGO sector. ✓ Financing of the public awareness program. ✓ Focus on gender issues and health impacts. ✓ There are some gaps in reporting format, strategy ✓ To include all the target groups in awareness creation especially women and children

2.3.14 Mechanism to report under Article 15 on measures taken to implement the provisions of the Convention and for information exchange with other Parties to the Convention	✓ Description of the mechanism for information exchange with other Parties to the Convention;	✓ partial because it is anchored at focal point levels only	✓ This is not working well	✓ Need to be made in the regulations
	✓ description of the mechanism for information exchange with other Parties to the Convention;	✓ gap		✓ Limited exchange among regional and sub regional levels countries
2.3.15 Relevant activities of Non-governmental stakeholders	✓ activities of non-governmental stakeholders on POPs;	<ul style="list-style-type: none"> ✓ Included ✓ Work of green belt movement and CEJAD 		<ul style="list-style-type: none"> ✓ There are very few NGOs that are active. CEJAD, Greenbelt, NASWAM are doing commendable work on POPs chemicals

<p>2.3.16 Overview of technical infrastructure for POPs assessment, measurement, analysis, alternatives and prevention measures, research and development - linkage to international programmes and projects.</p>	<ul style="list-style-type: none"> ✓ Technical infrastructure for POPs assessment; ✓ description of POPs measurement, analysis, alternatives and prevention measures; ✓ POPs research and development activities; 	<ul style="list-style-type: none"> ✓ Partial but intense ✓ included in the NIP 2014. 		<ul style="list-style-type: none"> ✓ There is a necessity to increase country's laboratory capacities: accreditation of waste laboratory within Env ✓ Agency cooperation to enhance the capacity of existing laboratories for determination of chemicals included in list of SC detail in monitoring protocol (to improve the monitoring ✓ NETWORK, equipment, standards, chemicals, training the personal implicated).
<p>2.3.17 Overview of technical infrastructure for POPs management and destruction</p>	<ul style="list-style-type: none"> ✓ Technical infrastructure for POPS management and destruction; disposal and destruction options available at the national level; 	<ul style="list-style-type: none"> ✓ Included ✓ Guidelines on work treatment specification on incinerators. ✓ Specification for nondestructive testing. 		<ul style="list-style-type: none"> ✓ No local treatment and disposal capacities compliant with the SC. ✓ Limited capacity for POPS destructions ✓ Incinerator upgrade

2.3.18 Identification of impacted populations or environments, estimated scale and magnitude of threats to public health and environmental quality, and social implications for workers and local communities	Overview on impacted populations or environments, estimated scale and magnitude of threats to public health and environmental quality, and social implications for workers and local communities;	Report		<ul style="list-style-type: none"> ✓ Some social economic data ✓ GMP reports ✓ Comprehensive assessment of social economic impacts in selected impacted areas need to be done
2.3.19 Details of any relevant system for the assessment and listing of new chemicals	✓ description of the system for the assessment and listing of new chemicals;	✓ Gap		<ul style="list-style-type: none"> ✓ No system for assessment and listing of industrial chemicals.
2.3.20 Details of any relevant system for the assessment and regulation of chemicals already in the market	✓ description of the system for the assessment and regulation of chemicals already in the market;	<ul style="list-style-type: none"> ✓ Partial through PCPB Inspections and monitoring ✓ Of registered pesticides (PCP Act) 		<ul style="list-style-type: none"> ✓ Being developed for pesticides ✓ Not available for non-chemical alternatives. ✓ Not available for industrial POPs
2.3.20 Implementation status	✓ status of the previous NIP(s)	✓ Applicable	Sectors implemented especially the priorities in the NIP 2007 and partially NIP 2014.	Report in implementation of the National Strategy and national waste management strategy. Development of chemicals policy,

				project for UPOPS reduction in municipal waste and project to address electronic wastes.
3. Strategy and action plan elements of the NIP				
3.1 Policy statement	<ul style="list-style-type: none"> ✓ Government's commitment in addressing the POPs issue, including the formal adoption or endorsement of the NIP; ✓ defining the NIP integration within the country's overall environmental policies and sustainable development strategy; 	<ul style="list-style-type: none"> ✓ No Gap Government is committed to implement the NIP through administrative, legal and financially. 	<ul style="list-style-type: none"> ✓ For pesticides ✓ For UPOPs 	<ul style="list-style-type: none"> ✓ sustainable waste Management Policy in Place ✓ Extended Producers Responsibility ✓ Plastic Regulations ✓ E waste Draft Regulations
3.2 Implementation strategy	<ul style="list-style-type: none"> ✓ framework mechanism to coordinate discrete NIP activities including review, 	<ul style="list-style-type: none"> ✓ Framework mechanism not established 		<ul style="list-style-type: none"> ✓ Need for developing a national Strategy on the reduction and elimination of persistent organic

	reporting, evaluation, revision, and updating of the NIP.			pollutants and the National Plan for the implementation of the Stockholm Convention on POPs expired. New strategy shall be correlated with NIP update ✓ Necessary to development of new NIP
3.3 Action plans, including respective activities and strategies.				
3.3.1 Activity: Institutional and regulatory strengthening measures	✓ Action plan on institutional and regulatory strengthening;	✓ Done for NIP 1 and NIP update ✓ Study specified target		✓ Formation of an Interministerial coordination mechanism for chemicals. ✓ Chemicals Roadmap to be implemented in 2022.
3.3.2 Activity: Measures to reduce or eliminate releases from intentional production and use	✓ Action plan on reducing or eliminating releases from intentional production.	✓ Included in PCPB ✓ for initial POPs, ✓ Additional POPs pesticides also include		✓ FARM Project to include alternatives

<p>3.3.3 Activity: Production, import and export, use, stockpiles, and wastes of Annex A POPs pesticides (Annex A, Part I chemicals)</p>	<p>✓ action plan on POPs pesticides</p>	<p>✓ Included in GD1155/2004 for initial POPs ✓ Available</p>		<p>✓ Action in the PCPB</p>
<p>3.3.4 Activity: Production, import and export, use, identification, labelling, removal, storage, and disposal of PCBs and equipment containing PCBs (Annex A, Part II chemicals)</p>	<p>✓ Action plan on PCBs;</p>	<p>✓ gap</p>	<p>✓</p>	<p>✓ Project formulation required</p>
<p>3.3.5 Activity: Production, import and export, use, stockpiles, and wastes of hexaBDE and heptaBDE (Annex A, Part IV chemicals) and tetraBDE and pentaBDE (Annex A, Part V chemicals) (and HBB, were applicable (Annex A, Part I chemicals)).</p>	<p>✓ Action plan on POP-PBDEs and HBCD;</p>	<p>✓ Not included – not subject of initial NIP</p>	<p>✓</p>	<p>✓ NIP update</p>

<p>3.3.6 Activity: Production, import and export, use, stockpiles, and wastes of DDT (Annex B, Part II chemicals) if used in the country</p>	<p>✓ ✓ action plan on DDT;</p>	<p>✓ Included in GD1155/2004</p>	<p>✓ No production of DDT. ✓ No import of DDT. ✓ No use of DDT</p>	<p>✓ Alternatives for DDT registered for use. Physical controls, malaria vaccine, chemicals and biopesticides registered. ✓ Alternatives promoted largely.</p>
<p>3.3.7 Activity: Production, import and export, use, stockpiles, and wastes of PFOS, its salts and PFOSE.</p>	<p>✓ Action plan on PFOS, its salts and PFOSE;</p>	<p>✓ Included – ✓ Subject of initial NIP. ✓ Included in the update 2014</p>		<p>✓ NIP update expected to detail more.</p>
<p>3.3.8 Activity: Register for specific exemptions and the continuing need for exemptions (Article 4)</p>	<p>✓ Action plan on registering for specific exemptions and the continuing need for exemptions (Article 4);</p>	<p>✓ No Gap</p>	<p>✓</p>	<p>✓ No exemptions requested however one is expected.</p>
<p>3.3.9 Action plan: Measures to reduce releases from unintentional production (Article 5)</p>	<p>✓ ✓ action plan on reducing releases from unintentional production (Article 5);</p>	<p>✓ Included in the NIP 2004/2014</p>	<p>✓</p>	<p>✓ legal provision- Air quality Act ✓ Regulation Strategy to introduce regulation on open burning SC compliant incinerators for hospital waste ✓ Plan for all counties to have vehicle to collect healthcare wastes ✓ Vehicle specifications</p>

<p>3.3.10 Activity: Identification and management of stockpiles, waste and articles in use, including release reduction and appropriate measures for handling and disposal (Article 6)</p>	<p>✓ Action plan on identification and management of stockpiles, waste and articles in use, including release reduction and appropriate measures for handling and disposal;</p>	<p>✓ Action plan included in NIP 2004/2014</p>	<p>✓</p>	<p>✓ For pesticides in the draft regulation, draft plastic waste and in Sustainable waste management Act 2022 For waste and articles in use in Draft e-waste electronic ✓ Draft a regulation for UPOPs.</p>
<p>3.3.11 Activity: Identification of contaminated sites (Annex A, B, and C Chemicals) and, where feasible, remediation in an environmentally sound manner</p>	<p>✓ action plan on identification of contaminated sites (Annex A, B, and C Chemicals) and, where feasible, remediation in an environmentally sound manner;</p>	<p>✓ Identification done in NIP 2004/2014 ✓ Further done in 2019 in 2020,2022 and 2023</p>	<p>✓ Concept on Kitenge ✓ Site for solid waste management</p>	<p>✓ Include in appropriate regulations ✓ In waste Regulations 2006 ✓ Remediation not done but in process</p>
<p>3.3.12 Activity: Facilitating or undertaking information exchange and stakeholder involvement</p>	<p>✓ ✓ action plan on facilitating or undertaking information exchange and stakeholder involvement;</p>	<p>✓ No gap ✓ Stakeholders involved extensively and not comprehensive.</p>	<p>✓</p>	<p>✓ Include in appropriate regulation. ✓ Communication for chemical ✓ Communication strategy for HCW</p>

3.3.13 Activity: Public and stakeholder awareness, information and education (Article 10)	<ul style="list-style-type: none"> ✓ ✓ action plan on public and stakeholder ✓ awareness, information and education ✓ (Article 10); 	<ul style="list-style-type: none"> ✓ No Gap express regulation but in the communication strategy 	✓	<ul style="list-style-type: none"> ✓ Implement strategies or administrative decree
3.3.14 Activity: Effectiveness evaluation (Article 16)	<ul style="list-style-type: none"> ✓ ✓ action plan on effectiveness evaluation (Article 16); 	<ul style="list-style-type: none"> ✓ No express regulation but many activities 	✓	<ul style="list-style-type: none"> ✓ Monitoring by WRA, GMP project and work by agrochemical work by pest control.
3.3.15 Activity: Reporting	<ul style="list-style-type: none"> ✓ ✓ action plan on reporting (Article 15); 	<ul style="list-style-type: none"> ✓ GAP ✓ No express regulation 	✓	<ul style="list-style-type: none"> ✓ No systematic reporting
3.3.16 Activity: Research, development and monitoring (Article 11)	<ul style="list-style-type: none"> ✓ ✓ action plan on research, development and monitoring (Article 11); 	<ul style="list-style-type: none"> ✓ No express regulation 	✓	<ul style="list-style-type: none"> ✓ Monitoring Protocol PRTR statement.
3.3.17 Activity: Technical and financial assistance (Articles 12 and 13)	<ul style="list-style-type: none"> ✓ ✓ action plan for technical and financial assistance (Articles 12 and 13); 	<ul style="list-style-type: none"> ✓ In NIP 2014 ✓ Gap 	✓	<ul style="list-style-type: none"> ✓ Resource mobilization ad hoc
3.4 Development and capacity-building proposals and priorities	<ul style="list-style-type: none"> ✓ ✓ priority areas where current capacity and capability need to be 	<ul style="list-style-type: none"> ✓ Included in the NIP 2004/2014. ✓ capacity building activity. 	✓	<ul style="list-style-type: none"> ✓ UPOPs workshop report ✓ CHEMOB reports.

	strengthened to achieve the objectives of the NIP;			
3.5 Timetable for the implementation strategy and measures of success	✓ principal targets contained in the detailed strategy, outlining specific targets, milestones, and performance indicators	✓ Was in NIP 2014. Some undertaken and Others remain		✓ Not all activities were implemented but the following targets were achieved...
3.6 Resource requirements	✓ ✓ identified incremental costs for measures; identified potential sources of funding for both incremental costs and baseline costs;;	✓ Included in NIP 2004/2014.		✓ Estimates renewed frequently under update, SAICM, SIP and UPOPs project

Quantitative data gaps

It should be remarked that, as the initial NIP was developed before 2004, only the 12 initial POPs were included in NIP, consequently no quantitative data on new POPs can be found in it. But the update 2014 included more listings. As regard to legal framework development, most POPs related legislation was missed by that time when NIP was developed, waste and chemical legislation covers only general aspects of hazardous chemical and toxic waste. More information on findings can be find in the chapter 5.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the data and information gaps identified within the national reports and NIPs

This chapter presents the main conclusions and recommendations from the NGA.

The expert team considers that this assessment will play a critical role in assisting Kenya to strengthen the capacity of the Chemicals and waste stakeholders in Kenya in understanding the linkages between the NIPs data and information and the national reporting under the Stockholm Convention. This will contribute to increase country capacity to implement the Stockholm Convention and meet its reporting obligations for the next reporting round in 2023 and to update its NIP - putting in place foundational government capacities, completing initial inventories for new POPs to date and raising awareness of hazardous chemicals issues among policy-makers and private sectors.

As the NIP and the National Reports submitted to the SC Secretariat under articles 15 and 7 respectively are key data sources used in the effectiveness evaluation of the implementation of the Stockholm Convention, this assessment will help Kenya to increase its rating, better define technical and financial assistance and mainstream sound chemicals management into development activities.

5.2 General findings

The general findings presented below reflect the evidence presented in the main text and build on the conclusions and recommendations listed at the end of this chapter. The data and information gaps which were identified have been grouped as follows:

- policy and regulatory framework;
- institutional framework and capacity building activities;
- laboratory and monitoring capacities;
- data collection and use of information system.
- Reporting and
- Keep up the NIP updating with COP decisions

5.3 Policy and regulatory framework

The policy and regulatory actions are targeted at developing legislation specifically related to the Stockholm Convention and are aimed at establishing a broader chemical safety approach in the country. They also include drafting specific regulatory acts and supporting operational guidelines and practical handbooks. A detailed presentation of legal measures related to all the POPs listed under the Convention is presented in Annex 1.

During the last 3 years Kenya has been consistent in building its regulatory framework on chemicals and waste management regime. Starting with the prioritization exercise on major sound management of chemicals and waste needs as a part of National Sound Management of Chemicals

Policy formulation, key instruments and processes have been established to address major chemicals and waste management concerns. However, at policy level, the country lacks the programming on sound management of chemicals for the period beyond 2020. The national SMC program (2010-2020) has already achieved its major goals, activities being mainly completed, that require the new approach and components, consistent with the SAICM beyond 2020 and SDG actions.

The country has managed to elaborate and adopt two framework laws: Sustainable Waste Management Waste Law on , which are fully harmonized it with the European Union Directives and MEAs approaches and provisions. The Waste Regulations 2006 provides for a five-step waste hierarchy, waste management plans, and Sustainable waste management Act 2022(SWMA) on the implementation of extended producer Responsibility (EPRO) systems for specific waste streams, as well as specific provision for POPs waste management (Art. 53) and Annex 6, etc.

The Annex 6 contains almost all the chemicals listed in the Annex A of the Stockholm Convention and needs to be supplemented with Decabromodiphenyl ether (BDE-209) present in commercial decabromodiphenyl ether, Hexabromocyclododecane, Pentachlorophenol and its salts and esters.

The Kenya Toxic Chemicals Regulation 2018 the Prior Informed Consent (PIC)of the Rotterdam Convention (PIC) requirements and sets up a comprehensive framework with a view to promoting sustainable development by covering chemicals at all stages of their life-cycle, including in products. Furthermore, specific by-laws were approved or are in process of approval to facilitate the implementation of the umbrella laws.

The whole chemicals management legal framework at the same time is very demanding, especially in the context of poor institutional capacity and scarce financial resources of regulated entities (importers, distributors, producers/ manufacturers) that impacts the whole supply-chain. The complexity of the legislation can be successfully implemented only if all the relevant authorities and stakeholders are well prepared and work in a multi-sectoral, efficient and transparent manner to enforce, monitor and control the regulatory framework execution and compliance at both national and international levels, consistent with chemicals and waste MEAs to which the country is a Party and responding to global objectives identified as a part of formulation of SAICM beyond 2020.

5.4 Institutional framework and capacity building

- i. The MEF of Kenya is the state authority responsible for development and promotion of policies and strategies addressing environment and forestry as well as climate change, environment protection, climate change and natural resources.
- ii. The main regulatory bodies are the NEMA and PCPB, which are responsible for implementation of the environmental protection policy, including waste management

issues. The KEPHIS performs the supervision and control of the production, import, marketing, use and storage of plant protection products in accordance with the legislation in the field of plant protection.

- iii. The Customs Service controls of KRA admits import/export of chemicals and no waste into Kenya on the basis of permissive acts, and cooperates with environment authorities in the process of implementing the international environmental treaties. Custom controls of chemicals and waste play an important role in the implementation of legislation governing the placement of chemicals on the market, as well as import of waste, especially with regard to the prevention of illegal traffic of chemical and prevention of import of waste for which the country has no capacities to deal with.
- iv. The complexity of the legislation can be successfully implemented only if all the relevant authorities and stakeholders are well prepared and work in a multi-sectoral, efficient and transparent manner to enforce, monitor and control the regulatory framework execution and compliance at both national and international levels, consistent with chemicals and waste MEAs to which the country is a Party.
- v. Besides the state authorities, there were established at inter-ministerial level a SAICM national interministerial working committee, which mandates to elaborate the unified policy in the field of chemicals and waste management in order to report and ensure the implementation of the chemicals and waste MEAs to which the country is a Party, including the SC. In addition, at the MEF, the DMEAS is providing technical assistance to MEF in chemicals and waste related treaties.
- vi. The MEF faces challenges related to often change of the ministries staff and the SC focal points, which implies lack of submission of the country reporting (3rd and 4th round) the irregularity of the meeting's organization.

5.5 Laboratory and monitoring capacities

The implementation of efficient monitoring of pollution levels of environmental objects and food and their influence on the health of the population requires the development of a network of laboratories in the country to perform tests in different environments.

The national observation and control network of laboratory aims at observation and control in order to detect in time the chemical and contamination (pollution) of the soil, air, water, food raw materials, feed and other environmental objectives, as well as for the timely implementation of measures. protection of the population, animals, plants and water against contamination with, poisonous, highly toxic substances and other agents. The network includes the following institutions:

- i. The central laboratories of NEMA, as well as partner institutions in the IMCCM);
- ii. Government Chemist, WARMA, University of Nairobi, as well as county laboratories for collecting samples;

- iii. laboratories of the Ministry of Health, Labor and Social Protection, municipal and MOH public health centers;
- iv. testing laboratories within the enterprises managed by the KRA;

The assessment of existing POPs monitoring programs revealed the following problems:

- i. Coordination and exchange of information on POPs among the monitoring agencies is sporadic. Currently there are no operational channels of information exchange between the institutions;
- ii. The general laboratory capacity is insufficient, especially for POPs chemicals determination in articles and waste, for instance PCBs and unintended POPs;
- iii. Quality assurance/quality control issues are of concern, since the equipment in many laboratories is not modern, training of staff is episodic and inter-laboratory comparison exercises are not undertaken;
- iv. Data handling and analysis procedures are deficient, preventing the possibility to use gathered monitoring information for decision-making;
- v. Lack of internationally recognized accreditation for the environmental authorities' reference laboratories;
- vi. Currently, the industries and the energy sector do not have self-monitoring obligations concerning specific pollutants like PCBs or PCDD/PCDF.

Data collection

The following are main official sources of waste and chemicals data in Kenya:

- i. MEF; NEMA; Public Complaints committee; WARMA, UNEP [GMP](#) Programme, Kenya National Bureau of statistics Customs Service; Government Chemist; Kenya Bureau of Standards.
- ii. From Research Scientists

The three information systems (waste management assessment and information (WMAIS), pollutant release and transfer register (PRTR) and Kenya National Bureau of Statistics (KNBS) umbrella's, represent the main tool for collection of data on waste, chemicals placed in market and release of emissions from several economic sectors.

5.6 Summary of data and information gaps identified within national reports

The following parts and sections of the national report have not been identified as having significant quantitative or qualitative data gaps, as they are covered by administrative and legislative provisions and implementation activities already were conducted during the 1st and 2nd NIP and just need an update.

- i. **Part A:** General information

- ii. **Part B:** Information on the measures taken by the Party to implement the provisions of the Stockholm Convention and on the effectiveness of such measures in meeting the objectives of the Convention
- iii. **Section II.** Article 3: Pesticides -Measures to reduce or eliminate releases from intentional production and use – for chemicals covered by the legislation;
- iv. **Section IV.** Article 5: Measures to reduce or eliminate releases from unintentional production (PCDD/PCDF) – inventory of PCDD/PCDF, hexachlorobenzene;
- v. **Section V.** Article 6: Measures to reduce or eliminate releases from stockpiles and wastes;
- vi. **Section VI.** Information required in paragraph 2 of Article 15 of the Convention;
- vii. **Section VII.** Article 9: Information exchange;
- viii. **Section VIII.** Article 10: Public information, awareness and education;
- ix. **Section IX.** Article 11: Research, development and monitoring;
- x. **Section X.** Article 12: Technical assistance;
- xi. **Section XI.** Article 13: Financial resources and mechanisms;
- xii. **Part C:** Information on progress in eliminating polychlorinated biphenyls (PCB) in accordance with subparagraph (g) of Part II of Annex A to the Convention:
- xiii. **Section I.** Article 6: Measures to reduce or eliminate releases from stockpiles and wastes; Areas not adequately addressed but somewhat addressed include:
- xiv. **Section II.** Part II of Annex A: Polychlorinated biphenyls;
- xv. **Section III.** Information on local destruction and import and export of PCB for destruction.
- xvi. **Part D:** Information specifically on the progress made in eliminating perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride in accordance with paragraph 3 in Part III of Annex B to the Convention – production and acceptable purpose.
- xvii. **Section IV.** Article 5: Measures to reduce or eliminate releases from unintentional production – promotion of BAT and BEP;

The following parts and sections of the national report have been identified as having quantitative or qualitative data gaps, as they are not covered by legislative provisions and not any other measures have been conducted in their relation:

- i. **Part B:** Information on the measures taken by Kenya to implement the provisions of the Stockholm Convention and on the effectiveness of such measures in meeting the objectives of the Convention
- ii. **Section II.** Article 3: Measures to reduce or eliminate releases from intentional production and use for the industrial chemicals as the legislation for this purpose (Toxic regulations 2018) has not completed;
- iii. **Section III.** Article 4: Register of specific exemptions; Annex A and Annex B even where there is need for that exemption;
- iv. **Section IV.** Article 5: Measures to reduce or eliminate releases from unintentional production pentachlorobenzene, polychlorinated biphenyls, and polychlorinated naphthalenes;
- v. **Part D:** Information specifically on the progress made in eliminating perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride in accordance with paragraph 3 in Part III of Annex B to the Convention.

5.7 Summary of data and information gaps identified within NIP

The following chapter of NIP have not been identified as having significant quantitative or qualitative data gaps, as they are covered by legislative provisions or some activities were already conducted during the 1st NIP and just need an update.

2.3.8 Assessment of releases of Unintentional produced chemicals (Annex C) - PCDD/PCDF, HCB;

2.3.1 Assessment of POPs pesticides (Annex A, Part I) – no production, import/export available;

2.3.2 Assessment of PCBs (Annex A, Part II) - no production, import/export available, inventory conducted;

2.3.3 Assessment of POP-PBDEs (Annex A, Part IV and Part V), HBB (Annex A, Part I) and HBCD

(Annex A, Part I and Part VII) - no production, import/export available;

2.3.4 Assessment of HCB (Annex A, Part I) - no production, import/export available;

2.3.5 Assessment of PCNs (Annex A, part I) - no production, import/export available;

2.3.7 Assessment of PFOS, its salts and PFOSF (Annex B-Part III) - no production, import/export available.

The following chapter of NIP have been identified as having quantitative or qualitative data gaps:

-

2.3.8 Assessment of releases of Unintentional produced chemicals (Annex C) – PCBs, PCB;

2.3.2 Assessment of PCBs (Annex A, Part II) - quantity in products – update the previous inventory;

2.3.3 Assessment of POP-PBDEs (Annex A, Part IV and Part V), HBB (Annex A, Part I) and HBCD (Annex A, Part I and Part VII) quantity in products;

2.3.4 Assessment of HCB (Annex A, Part I) - quantity in products;

2.3.5 Assessment of PCNs (Annex A, part I) - quantity in products;

2.3.7 Assessment of PFOS, its salts and PFOSF (Annex B, Part III) - quantity in products;

5.8 Conclusions

The NGA represents potential shortcomings in the existing (POPs) legislation and initiatives and it has been elaborated to assess the need for further measures for Kenya to ensure its reporting obligations under Articles 07 and 15 under the Convention, as well to improve and correlate it with the information presented in the NIP of the Convention.

Since the first NGA on POPs issues were done in 2003-2007 during preparing the NIP, requirements set out in the international agreements have changed due to the additional listed POPs. For POPs pesticides the legislation has kept pace with the listing but not industrial

chemicals, dioxins and furans but not for the other UPOPS. The following have been concluded as priority issues in order to assist Kenya in complying with its updated international obligations:

- i. All the POPs pesticides are prohibited to be used in Kenya. Additional data shall be collected to seek for alternatives to POPs pesticides used.
- ii. The following chemicals are not yet covered by legislation: Decabromodiphenyl ether (BDE-209) present in commercial decabromodiphenyl ether, Hexabromocyclododecane, Pentachlorophenol and its salts and esters.
- iii. Almost all industrial POPs, except of PCBs, need to be assessed from perspective of use in products and waste of such products. Additional import/export information must be requested, filtered and analyzed.
- iv. Waste electrical and electronic waste data is needed to assess using available data in statistics database and in other open sources, such as international trade statistics <https://comtrade.un.org>.
- v. Inventory of uPOPs was conducted for PCDD/ PCDF and HCB for the reporting years: 2001, 2004, 2008, 2012, 2016, 2018.
- vi. The inventory of PCBs in transformers and capacitors need to be updated. Proper handling, labeling storage and disposal of PCB containing oil and equipment must be ensured.
- vii. Additional knowledge and capacity building for testing, monitoring and promoting of alternatives is needed for the country.

5.9 Recommendations

This section contains a set of recommendations for further improvement of the reporting to avoid gaps in future

- Follow up on the decision s of the CoP and do an inventory
- address the areas with highest gaps assessed.
- Some of the recommendations, particularly on data collection and partially POPs inventories may be addressed during project implementation,
-
- Complete Pops inventory, as well as develop action plan on POPs reduction measures during the GEF Project “Review and Update of the NIP in Kenya”.
-
- Address long-term recommendations as contained in the GMP reports on improving laboratory capacity, that require additional technical and financial assistances in order to addressed.
- Update the NIP in order to address all the POPS to up to COP11;
- Continue implementing and enforcing chemicals and waste legislation,
- Finalize the Kenya Toxic Chemicals regulation 2018;
- Further promote for enforcement of minimization of open burning of waste n industrial emissions, which contains provisions related to BAT and BEP;
- Prepare the grounds registration of exemptions or acceptable purpose, as needed;
- Enforce the established mechanism for regular national reporting to Stockholm Convention;

- Draft action plans, which include objectives, activities, indicators and resources / needs mostly for the following POPs, but not limited to:
 - i.
 - ii. Production, import and export, use, identification, labelling, removal, storage, and disposal of PCBs and equipment containing PCBs (Annex A, Part II chemicals)
 - iii. Production, import and export, use, stockpiles, and wastes of hexaBDE and heptaBDE (Annex A, Part IV chemicals) and tetraBDE and pentaBDE (Annex A, Part V chemicals) (and HBB, where applicable (Annex A, Part I chemicals))
 - iv. Production, import and export, use, stockpiles, and wastes of PFOS, its salts and PFOSF
 - v. (Annex B, Part III chemicals) o Measures to reduce releases from unintentional production (Article 5)
 - vi. Identification and management of stockpiles, waste and articles in use, including release reduction and appropriate measures for handling and disposal (Article 6)
 - vii. Identification of contaminated sites (Annex A, B, and C Chemicals) and, where feasible, remediation in an environmentally sound manner

5.10 Data collection and POPs inventories

- viii. Prepare templates for data collection, analysis and calculation and archiving to ensure development/update of future inventories;
- ix. Conduct assessment of allowed for use of perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride;
- x. Compile report on the updated inventory for uPOPs and include in the inventory PCB, PCN, PeCB emissions, to the extent possible;
- xi. Compile updated inventory of PCBs on received questionnaires from the economic operators to track the fulfilment of obligations of to phase out the PCB containing transformers and capacitors by 2020; review the possibility to amend the PCB regulation no. 81/2009;
- xii. Conduct inventory of HBCD, POP-PBDEs, SCCPs and PCNs in particular in articles in use and collect relevant data;
- xiii. Compile the information on POPs stockpiles, particularly industrial waste; contaminated sites and soil remediation initiatives, based on received responses from the questioned entities;
- xiv. Identify the necessity on exemptions requirements on future production, use, and releases of POPs, based on received information;
- xv. Conduct capacity building activities for the responsible authorities on legal and technical, including POPs monitoring matters in air, water and soil.

5.11 Improve the laboratory capacities by:

- i. increasing the analytical and technical potential of laboratories by implementing the POPS monitoring Protocol;
- ii. strengthening the analytical and technical possibilities of the waste laboratory within the national Environmental Management authority (NEMA), which will serve as a reference

laboratory, including by equipping the laboratory with high-performance equipment and training staff;

- iii. For the central water Laboratories and the Kisumu provide the laboratories with the necessary number of professional staff in the field, as well as training specialists, including abroad, in the field of chemicals management, including principles of POPS
- iv. development and approval of the monitoring and research program on the impact of chemicals on public health and the environment, as well as its implementation.

5.12 Future streamlining the NIP development and reporting processes in the country

Discussing more specifically the results of the NGA that represents potential shortcomings in existed national POPs legislation and initiatives, as well considering results of the first overview of available data for the POPs inventory, the following priorities issues for future streamlining the NIP development and reporting process in the country were identified:

- i. Compile collected the data and information (national reports, trade statistics, national authorities, business, scientific institutions, NGOs);
- ii. Testing and further implementing the integrated articles 7 and 15 electronic toolkit to build synergy through optimizing the data collection, analysis and use;
- iii. Continue the enforcement of the mechanism for data collection by assigning clear roles and responsibilities to those relevant entities collecting what information;
- iv. Using information publicly available at national level rather than requesting the information again;
- v. Improve cooperation in the sharing and use of data gathered in other areas for the benefit of the environment;
- vi. Strengthen cooperation between relevant authorities to streamline reporting and information management;
- vii. Provide capacity building activities for the environmental authorities on POPs data reporting, environmental inspection of economic entities that use/ produce POPs containing products, how to classify waste and hazards according to the POPs content, etc.

Next phase will be focused on testing the integrated articles 7 and 15 electronic toolkit and exploring the potential linkages with the data management systems available at the national level where some of the priorities listed above will be addressed. However, this work will continue to be carried out in the course of NIP updating project put into implementation upcoming period.

Annex nr.1 Legal measures undertaken as regards the Annexes A, part I and B, part I to the Stockholm Convention

NO	POPs	Chemical	Activity	Specific exemption	Regulation	Remarks about the use at national level
1*	Old, P	Ildrin* CAS No: 309-00-2	Production	None	Prohibited with no exemptions	Not used
			Use	Local ectoparasiticide Insecticide		
2*	New , P	Alphahexachl orocyclohexa ne* CAS No:319-84-6	Production	None	lack	Not used
				Use		
3*	New , P	Betahexachl orocyclohexa ne* CAS No:319-85-7	Production	None	lack	Not used
				Use		
4*	Old, P	Chlordane* CAS No: 57-74-9	Production	As allowed for the Parties listed in the Register	prohibited with no exemptions	Not included in the official register of permitted substances for
				Use		

				Insecticide		use in agriculture, including and individual farms, forestry and household. No import or sale permitted.
				Termiticide		
				Termiticide in buildings and dams		
				Termiticide in roads		
				Additive in plywood adhesives		
5*	New , P	Chlordecone * CAS No: 143-50-0	Production	None	prohibited with no exemptions	Not used
			Use	None		
New	New	Decabromodiphenyl ether (BDE-209) present in commercial decabromodiphenyl ether (CAS No: 1163-19-5)	Production	As allowed for the Parties listed in the Register	lack, Annex to be updated with this substance, according to POPs regulation	Currently Data is being collected
			Use	In accordance with Part IX of this Annex:		

6*	, I					
7*	Old, P	Dieldrin* CAS No: 60-57-1	Production	None	prohibited with no exemptions	DDT and preparations on its base have been prohibited since 1986.
			Use.	In agricultural operations.		
8*	Old, P	Endrin* CAS No: 72-20-8	Production	None	prohibited with no exemptions	Not used
			Use	None		
9*	Old, P	Heptachlor* CAS No: 76-44-8	Production	None	prohibited with no exemptions	Heptachlor and its mixtures with TMTD and Hexachlorobenzene have been prohibited since 1986. Not included in the official register of permitted substances for
			Use	Termiticide		
				Termiticide in structures of houses Termiticide (subterranean)		
		Wood treatment				

				In use in underground cable boxes		use in agriculture, including and individual farms, forestry and household.
10*	New , I	Hexabromobiphenyl * CAS No:36355-01-8.	Production	None	prohibited with no exemptions	Data being collected
			Use	None		
11*	New I	Hexabromocyclododecane	Production	As allowed for the Parties listed in the Register in accordance with the provisions of Part VII of this Annex	, Annex to be updated with this substance, according to POPs regulation	Data being collected
			Use	Expanded polystyrene and extruded polystyrene in buildings in accordance with the provisions of Part VII of this		

				Annex		
12*	New , I	Hexabromod iphenyl ether* and heptabromo diphenyl ether*	Production	None	prohibited with exemptions	Data being collected
			Use	rticles in accordance with the provisions of Part IV of this Annex		
13*	Old, I, P	Hexachlorob enzene CAS No: 118-74-1	Production	As allowed for the Parties listed in the Register	prohibited with no exemptions	Hexachloroben zene is not included in the official register of permitted substances for use in agriculture, including and individual farms, forestry and household. No import or sale permitted.
			Use	Intermediate Solvent in pesticide Closed system site limited intermediate		

14*	New , I, U	Hexachlorob utadiene CAS No: 87-68-3	Production	None	prohibited with no exemptions	Data being collected
			Use	None		
15*	New , P	Lindane* CAS No: 58- 89-9	Production	None	prohibited with no exemptions	Lindane (gamma-HCH) has been prohibited since 1991. Not included in the official register of permitted substances for use in agriculture,
			Use	Human health pharmaceutical for control of head lice and scabies as second line treatment		
16*	Old, P	Mirex* CAS No: 2385-85- 5	Production	As allowed for the Parties listed in the Register	prohibited with no exemptions	Never Used
			Use	Termiticide		
17*	New , P, I, U	Pentachlorob enzene* CAS No: 608-93-5	Productiononn	None	prohibited with no exemptions	Never Used
			Use	None		

18*	New , P	Pentachlorophenol and its salts and esters	Production	As allowed for the Parties listed in the Register in accordance with the provisions of Part VIII of this Annex	Annex to be updated with this substance, according to POPs regulation	Pentachlorophenol and its salts and esters have not been included in the official register of permitted substances for use in agriculture, including and individual farms, forestry and household. No import or sale permitted.
			Use	Pentachlorophenol for utility poles and cross-arms in accordance with the provisions of Part VIII of this Annex		
19*	Old, I	Polychlorinated Biphenyls (PCB)*.	Production	None	prohibited with exemptions	The Government Decision on Approval of Regulation on Polychlorinated Biphenyls, No. 81 of 02 February 2009. This act has been published in the Official Monitor of the Republic of
				Articles in use in accordance with the provisions of Part II of this Annex.		

						Moldova, No..
20*	New , I, U	Polychlorinate naphthalenes, including dichlorinated naphthalenes,	Production	Intermediates in production of polyfluorinated naphthalenes, including octafluoron aphthalene	prohibited with no exemptions	Data being collected
			Use	Production of polyfluorinated naphthalenes, including octafluoronaphthalen e		

6. REFERENCES

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- 2 [Waste Management Regulation.](#)
- 3 [Inventory industrial pops in electrical and electronic equipment.](#)
- 4 [The Kenya national implementation plan for the Stockholm convention on persistent organic pollutants\(NIP one\)](#)
- 5 [Kenya National Implementation plan for the Stockholm convention on persistent organic pollutants. \(NIP two\).](#)
- 6 [Environmental Management and coordination \(toxic and hazardous chemicals and materials management\) regulations 2019.](#)
- 7 [Draft Environmental Management and Coordination Bill, 2021.](#)
- 8 [Stockholm Convention on persistent organic pollutants national report pursuant to article 15 Cycle 2.](#)
- 9 [Ministry of Environment, Kenya national Implementation Plan for the Stockholm Convention on persistent organic pollutants Inventory.](#)
- 10 [Report on stakeholder meeting to prepare for the project implementation venue: legacy hotel, Nakuru.](#)
- 11 [2nd Report on integrated Stockholm Convention reporting toolkit project stakeholder meeting to prepare for the project implementation .](#)

7. List of stakeholders consulted and trained on the electronic reporting toolkit

	<i>NAME</i>	<i>INSITUTION</i>
1	Cyrus Mageria	Ministry of Environment, Climate Change and Forestry
2	Anthony Wainaina	Ministry of Health
3	June Aluoch	Pest Control Products Board
4	Benedict Makali	Pest Control Products Board
5	Fredrick Nyongesa	Water Resources Authority
6	Dr. John Mumbo	National Environment Management Authority
7	Leonard Tampushi	National Environment Management Authority
8	Albert Nyagechi	Kenya Bureau of Standards
9	Fred Isaboke	Kenya Revenue Authority
10	Jane Kisutia	Government Chemist
11	Maxwel Memusi	Directorate of Occupational Health and Safety
12	Dr. Vincent Madadi	University of Nairobi
13	Prof. Francis Orata	Masinde Muliro University of Science and Technology
14	Dr. Leonard Gitu	Jomo Kenyatta University of Science and Technology
15	Griffins Ochieng	Centre for Environmental Justice and Development (CEJAD)
16	Benson Ngigi	Agrochemicals Association of Kenya (AAK)
17	Georgina Wacuka	Kenya Association of Manufacturers
18	Edward Njuguna	Ministry of Environment Climate Change and Forestry