



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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PART I: PROJECT INFORMATION

| | | | |
|-----------------------------|---|------------------------------|-------------------|
| Project Title: | ENVIRONMENTALLY SOUND MANAGEMENT (ESM) OF LINDANE IN BRAZIL | | |
| Country(ies): | Brazil | GEF Project ID: ¹ | 9412 |
| GEF Agency(ies): | UNEP | GEF Agency Project ID: | 01412 |
| Other Executing Partner(s): | Stockholm Convention Regional Centre for Latin America and the Caribbean. (Cetesb), FAO, | Resubmission Date: | February 13, 2017 |
| GEF Focal Area(s): | Chemicals and Wastes | Project Duration (Months) | 60 months |
| Integrated Approach Pilot | IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/> Corporate Program: SGP <input type="checkbox"/> | | |
| Name of parent program: | [if applicable] | Agency Fee (\$) | 990,000 |

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

| Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs) | Trust Fund | (in \$) | |
|--|------------|-----------------------|-------------------|
| | | GEF Project Financing | Co-financing |
| CW-2-Program 3 | GEFTF | 11,000,000 | 61,500,000 |
| Total Project Cost | | 11,000,000 | 61,500,000 |

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

| Project Objective: The project objective is to contribute to the protection of the environment and human health in Brazil through the environmentally sound management of Lindane. | | | | | | |
|--|-----------------------------|---|--|------------|-----------------------|--------------|
| Project Components | Financing Type ³ | Project Outcomes | Project Outputs | Trust Fund | (in \$) | |
| | | | | | GEF Project Financing | Co-financing |
| Component 1 – Environmentally Sound Management (ESM) of Lindane stockpiles and abandoned Lindane production/formulation sites | TA | Improved management of Lindane and associated waste in Brazil, resulting in reduced risk to public health and the environment | 1.1: Assessment of the current situation of stockpiles of Lindane and its isomers; | GEF TF | 500,000 | 2,500,000 |
| | | | 1.2: Development of State and Federal level register and GIS database for Lindane burial sites; and ESM strategy in Bahia, São Paulo and Rio de Janeiro; | | 500,000 | 2,000,000 |
| | | | 1.3: Demonstration of ESM for investigation and risk reduction in 2 Lindane burial sites including the disposal of 5,000 metric tons of Lindane and its isomers. | | 8,000,000 | 37,000,000 |

¹ Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCE](#).

³ Financing type can be either investment or technical assistance.

| | | | | | | |
|--|--|--|--|--------|------------|------------|
| | | | 1.4 Development of national capacity, knowledge management and outreach in the States of Bahia, Rio de Janeiro and Sao Paulo | | 1,000,000 | 12,500,000 |
| | | | 1.5. Monitoring and Evaluation | | 500,000 | 2,500,000 |
| Subtotal | | | | | 10,500,000 | 56,500,000 |
| Project Management Cost (PMC) ⁴ | | | | GEF TF | 500,000 | 5,000,000 |
| Total Project Cost | | | | | 11,000,000 | 61,500,000 |

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

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

| Sources of Co-financing | Name of Co-financier | Type of Co-financing | Amount (\$) |
|---------------------------|--|----------------------|-------------|
| Recipient Government | Ministry of Environment | In-Kind | 2,500,000 |
| Government | Ministry of Health | In-Kind | 1,500,000 |
| Government | Funasa | In-Kind | 12,000,000 |
| Private Sector | inpEV | Cash | 7,000,000 |
| CSO | Cetesb | In-Kind | 10,000,000 |
| | | Cash | 8,000,000 |
| Private Sector | Matarazzo Industry and other interested partners | In-kind | 10,000,000 |
| | | Cash | 5,000,000 |
| Donor Agency | UNEP | In-kind | 500,000 |
| Technology supplier | To be identified | Cash | 5,000,000 |
| Total Co-financing | | | 61,500,000 |

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

| GEF Agency | Trust Fund | Country/ Regional/ Global | Focal Area | Programming of Funds | (in \$) | | |
|----------------------------|------------|---------------------------|----------------------|----------------------|---------------------------|------------------------------|---------------|
| | | | | | GEF Project Financing (a) | Agency Fee (b) ^{b)} | Total (c)=a+b |
| UNEP | GEFTF | Brazil | Chemicals and Wastes | POPs | 11,000,000 | 990,000 | 11,990,000 |
| Total GEF Resources | | | | | 11,000,000 | 990,000 | 11,990,000 |

a) Refer to the [Fee Policy for GEF Partner Agencies](#).

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

E. PROJECT PREPARATION GRANT (PPG)⁵

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

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

| Project Preparation Grant amount requested: \$300,000 | | | | | PPG Agency Fee: 27,000 | | |
|---|------------|-----------------------------|----------------------|----------------------|------------------------|-----------------------------|--------------------|
| GEF Agency | Trust Fund | Country/ Regional/Global | Focal Area | Programming of Funds | (in \$) | | |
| | | | | | PPG (a) | Agency Fee ⁶ (b) | Total c = a + b |
| UNEP | GEF TF | Brazil | Chemicals and Wastes | POPS | 300,000 | 27,000 | 327,000 |
| Total PPG Amount | | | | | 300,000 | 27,000 | 327,000 |

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁷

Provide the expected project targets as appropriate.

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

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

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

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

PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area⁸ strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling up.

The new project “**ESM of Lindane in Brazil**” described in this submission aims to support the implementation of the priorities identified by Brazil’s National Implementation Plan (NIP)⁹ of the Stockholm Convention to reduce POPs releases into the environment. The project is based on the principles of Environmentally Sound Management (ESM) as set out in the technical guidance of the Basel and Stockholm Conventions. The project will focus on the ESM of Lindane and Lindane isomers at a series of former Lindane production sites. It will result in the destruction of a minimum of 5,000 metric tons of POPs from Brazil and will put in place the necessary capacity to ensure ESM of Lindane, and other POPs in the future.

1.1. Global environmental problems, root causes and barriers that need to be addressed

Environmental contamination by persistent organic pollutants (POPs) is a global problem, which led to the establishment of the Stockholm Convention on POPs. The Stockholm Convention is a global treaty to protect human health and the environment from chemicals that persist in the environment for long periods allowing them to become widely distributed geographically. The chemicals bio-accumulate in the fatty tissue of animals including humans resulting in a range of harmful impacts on health. The Stockholm Convention entered into force in May 2004 and requires signatory countries implement actions to phase-out or reduce the production, use, export and import of POPs, to prevent the unintentional release of these substances to the environment and to provide sound disposal of their POPs wastes and stockpiles. This project aims to address a key area of concern, Lindane, in a strategic and synergistic manner thus reducing releases of these substances into the environment with the inevitable negative impacts on human health at local, national and global levels.

Brazil is the largest developing country in Latin America with a population of 210 million people which is largely concentrated (more than 80%¹⁰) in urban areas. The country has developed a large integrated economy in which chemicals production, trade and use are an important component. These factors represent significant challenges related to the protection of human health and the environment both within Brazil and globally due to the uncontrolled releases of pollutants resulting from industrial processes including agricultural production. These concerns are important to all countries but, according to the Global Chemicals Outlook (UNEP, 2012), are particularly salient in economies in transition that face pressing needs to achieve development, national security and poverty eradication objectives, such as Brazil. The main problems to be addressed, as identified in the NIP, can be summarized as:

- i. Brazil is moving towards stronger environmental policies as its economy is becoming more mature. Currently Brazil is strengthening its national legislation related to the sound management of chemicals in line with the aims of the Strategic Approach to International Chemicals Management (SAICM).
- ii. For historical, socioeconomic and geographical reasons farming is an important sector in Brazil’s national economy and is an important contributor to foreign trade. For instance, Brazil is the leading producer and exporter of coffee, sugar, ethanol sugarcane and orange juice globally. In addition, Brazil is the leading exporter of the soy complex (bran, oil and grain). The development of a

⁸ For biodiversity projects, in addition to explaining the project’s consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

⁹ <http://chm.pops.int/Implementation/NIPs/NIPTransmission/tabid/253/Default.aspx>

¹⁰ <http://censo2010.ibge.gov.br/apps/atlas/>

diversified agriculture sector in Brazil has resulted in wide scale use of chemical pesticides including, in the past, POPs pesticides. The annual sales of pesticides in Brazil between 2000 and 2012 has increased by 194.09%, moving from 162,461.96 to 477,792.44 tons of active ingredient (IBAMA, 2012)¹¹. In 2013, 495,764.55 tons of pesticide active ingredient of pesticides were sold in Brazil (IBAMA, 2015)¹², demonstrating that this pattern of increased use is still occurring. Preliminary studies undertaken in association with the NIP have identified significant amounts of obsolete pesticides and POPs pesticides in many States with a potential for continued use in agriculture with associated risk for accumulation of harmful residues in food products.

- iii. Brazil has also been a producer of new POPs including Endosulfan and Lindane and is understood to have significant issues related to the use of flame retardants such as PDBE in the electronic and building sectors.
- iv. Currently, there is a lack of an integrated approach to the management and treatment of POPs wastes in Brazil. As with many developing countries, there is potential for disagreement within civil society related to the evaluation of technologies that have been proposed for the destruction of POPs stockpiles and for the remediation of POPs contaminated sites. The PPG phase of this project will provide an opportunity for a complete and inclusive review of technology issues in Brazil to allow for the development of a clear strategy for management and treatment of POPs wastes in the future which is both sustainable and meets the technological standards set in the Stockholm and Basel Conventions.

As such the country is understood to have large stockpiles of agricultural and industrial POPs wastes in many sectors. The accumulation of the stockpiles of POPs waste comes largely from the lack of a the implementation of comprehensive national ESM strategy in previous decades.

This project will assist Brazil to focus on the development and demonstration of national strategies for the environmentally sound management of Lindane and associated isomers and wastes. The project will also address the current lack of awareness of some key stakeholders in tackling the problem and society's general lack of knowledge about the importance of the environmentally sound management of chemicals for improving quality of life and reducing the chemical burden, worsened by inequalities and poverty.

1.2 Baseline scenario or any associated baseline projects

BASELINE SCENARIO

Introduction:

Brazil ratified the Stockholm Convention in 2004. The NIP was submitted in 2015. The NIP identifies the areas of focus for this project and outlines the national situation of POPs. The NIP development process promoted national debate, allowed for the development of institutional capacities in the Federal and State levels, facilitated the strengthening of the national regulatory and policy environment and allowed for studies aimed at identification of the necessary measures to control these substances in the country. It is, however, recognised that the NIP has gaps and consequently does not provide a comprehensive baseline. The development of the project will take these gaps into account during the project preparation phase. The baseline will also be complemented by the NIP update project, to be completed in parallel with the PPG.

Brazil is now the sixth largest producer of chemicals globally and aims to position itself among the five largest in the world by 2020. Brazil has a well-organised chemical industry (contributing 2.7% of GDP); an important industrial sector accounting for 22.2% of GDP¹³; strong agriculture and livestock sectors (5.9% of GDP); and, an important and strategic energy sector. All of these sectors use chemicals and produce hazardous wastes, including POPs wastes. The project can be considered as providing a catalytic effect using the ESM of Lindane as an entry

¹¹ <http://www.ibama.gov.br/areas-tematicas-qa/relatorios-de-comercializacao-de-agrotoxicos/tudo>

¹² *Ibid.*

¹³ <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/br.html>

point for long term, sustainable chemicals and waste management in the future in Brazil. The following section provide a summary of the baseline in Brazil:

Lindane use in agriculture:

In the early 60s, the use and production of pesticides was strongly encouraged and subsidized in Brazil. An outdated legal framework led to the easy registration of pesticides, many of which had already been banned by in developed countries. The wide scale use of these pesticides in the past, both in agriculture and in public health campaigns for disease vector control (especially malaria), led in turn to increased demand with the associated problems of transportation, storage and largely uncontrolled use in large quantities.

Currently, all POPs pesticides are banned in Brazil, with the exception of Sulfluramid (produced from PFOS). Brazil has not made use of the specific exemptions approved by the Conference of the Parties for aldrin, chlordane, DDT, dieldrin, endosulfan, heptachlor, lindane, mirex and hexachlorobenzene. Likewise it did not register an acceptable purpose for DDT to control vectors of diseases, and so none of the POPs pesticides should be used today in Brazil in either agriculture or public health sectors. This, unfortunately, doesn't mean that the banned products do not exist in Brazil and stockpiles of POPs pesticides have been identified as part of the NIP development process.

In Brazil, Lindane was used in agriculture, wood preservation and as a veterinary and pharmaceutical product against ectoparasites, such as scabies and lice. According to SNVS Directive No. 10/1985, the agricultural use of Lindane was authorized on plants and/or seeds of the following crops: cotton, bulbs, cocoa, coffee, sugar cane, coconut, fruits in general (except strawberries), vegetables and cassava, as well as for soil treatment during the planting of cereal grains and citrus trees. Furthermore, veterinary use was authorized for topical application in livestock, except during lactation. As a wood preservative, application was permitted exclusively for treatment of railway ties, posts, braces and stakes for rural fences, supports and beams (Anvisa, 2003).

The agricultural use of Lindane was banned in 1985 by Ministry of Agriculture (MAPA) and its use as a household pesticide was prohibited in 1998 by the Ministry of Health. Use in veterinary applications and as medication were banned in 2000. From 2000 to 2006, Lindane was only authorised for use in wood preservation. In 2006, Anvisa published a resolution banning all uses of the active ingredient Lindane in Brazil and denied all requests for its importation.

Lindane production and waste sites:

According to MMA, the total production of Lindane in Brazil from 1955 – 1982 was 18,400 tons, and 8,064 tons were imported. For every ton of Lindane produced, 8-12 tonnes of the other isomers of the same molecule, including the more toxic to humans (alpha and beta) HCH isomers, are produced. Based on this ratio of isomers it is therefore estimated that the amount of alpha and beta HCH isomers produced in Brazil was between 147,200 - 220,800, metric tonnes. It is not clear how these residues were managed during the Lindane production period, but stockpiles and buried stockpiles have been identified in two former Lindane production sites, and at a formulation site in Brazil as part of the PIF development process.

The production of Lindane generated large waste deposits and contaminated sites in many countries, the project will further investigate and implement a demonstration project in two former Lindane factories in Brazil. The sites selected are “Cidade dos Meninos” and Matarazzo Industries. They were selected based on the following criteria:

1. Amount of waste / level of contamination at the site (the hazard);
2. Proximity of the site to human habitation (the receptor);
3. The lack of current management systems to minimize the uncontrolled migration of the contaminants off the site (the pathway).

Cidade dos Meninos, Duque de Caxias, Rio de Janeiro State, is the site of an abandoned HCH factory. The factory, abandoned in 1964, produced hexachlorohexane (HCH) and formulated and stored other pesticides, such as DDT, during from 1950-1964. There is no available accurate information on the amount of Lindane produced

at Cidade dos Meninos. Interventions to reduce environmental and human exposure to these chemical and related wastes have been limited to: fencing the site; removal of 40 tons and attempted remediation with lime which was unsuccessful. The remaining waste and stockpiles are still at the locality and require detailed investigation.

Matarazzo Industries was operational at São Caetano do Sul, one of the oldest industrial sites of the Sao Paulo ABC area and the cradle of the first Industrial Company of Brazil, the Indústrias Reunidas Matarazzo. From the late 1930 until 1986, various chlorinated pesticides (including HCH) and formulations and several other chemical products were produced by Matarazzo industries.

Other sites where HCH has been formulated and stored for vector control in public health were identified in the São Francisco River Basin, in the state of Bahia, by the National Health Foundation – FUNASA. This entity is linked to the Ministry of Health and is currently hiring an institution with proven technical, operational and administrative capacity for the Management of Contaminated Sites in the state of Bahia.

During 1979 and from 1984 to 1986, a higher concentration of active ingredient (40% gamma-HCH) was produced. For the production of HCH 40%, the HCH 16% was mixed with methanol in two propeller mixer at room temperature and atmospheric pressure. In this process, 165 tons/month of waste consisting of other HCH isomers were generated, which for the period indicated (4 years) represents 7,900 tons of wastes (Cunha).

This waste was the main source of the local soil pollution, since, over the years, it has been deposited and buried at different points of the company area, even outside this area. Liquid effluents were released in the Tamandaré river.

In 1986, after the HCH production unit was disabled as required by the environmental agency, the company received a penalty notice because they had left a stockpile of about 1,800 tons of wastes at the place. After this, part of the stockpile was removed to two different locations, and the shed that stored the HCH was demolished, leaving contaminated materials and residues on the ground. For this reason, CETESB asked for a definitive solution to the contamination problem and imposed successive penalties and taxes fines, but the actions were not successful in the remediation area.

In January 1996 CETESB found that the soil and demolished buildings were contaminated by HCH and additional 5 locations where wastes of HCH production were discharged were identified. The report on health risk assessment developed by CETESB, in November 1998, concluded that the site was contaminated with high concentrations of HCH in the soil. The HCH contaminated site covers an area of about 280.000 m³ (241.000 m³ of area I and 42.000 m³ of area II) with the propagation of the contaminants to depth of 8m. The highest concentrations reported are 11,000 ppm total HCH.

It should be noted that the results of the National Inventory of POPs Contaminated Sites identified a total of 117 contaminated areas, 9 of which have been rehabilitated and 2 are already in reuse. According to the survey, industrial activities as Lindane production contributed to the contamination of 52% of the sites. Chemicals storage (41%) and waste management activities / disposal (37%) were the main sources of contamination. These statistics highlight that the poor management of products and wastes was the most significant cause of POP-contamination in Brazil.

The inventory shows that Brazilian States are at different levels of progress in identifying areas contaminated with POPs. Out of 26 States only 9 have recorded POPs-contaminated sites. 8 have said they have no knowledge of the existence of these sites and the remaining 9 did not provide sufficient information to identify such sites. Therefore, the development of specific guidance and training for identification, management and impact assessment of POPs contaminated sites as well as the potential for replication at similar sites nationally is needed. This project will address this gap in knowledge and also look to implement risk reduction strategies and site remediation at the highest risk sites identified.

ASSOCIATED BASELINE PROJECTS

Under the leadership of the Ministry of Environment (Stockholm Convention designated focal point), Brazil has made significant advances in recent years towards meeting the obligations under the Stockholm Convention on POPs. Technical assistance and capacity building are needed to increase national capacity and overcome the gaps in understanding to produce a national baseline through the completion of studies, surveys and reviews. Therefore, to meet the requirements of the Stockholm Convention many cooperation projects were completed as listed below:

1. The GEF funded National Implementation Plan (NIP) of the Stockholm Convention (GEF project ID 2096)¹⁴ was developed and submitted to the Secretariat of the Basel, Rotterdam and Stockholm (BRS) Conventions in April 2015. The baseline scenario for the implementation of priority actions was developed during the implementation of the NIP. The NIP presented the findings of an initial investigation of the status of Stockholm Convention's implementation in Brazil, the uses of these chemicals in the country, the management of their wastes and stockpiles, identification of POP-contaminated sites, as well as the development of national capacity for POPs management. The NIP identified the legislative and administrative measures already underway to protect human health and the environment from the effects of POPs; pointed out gaps that must be overcome; and, developed an Action Plan that allows the country to meet its obligations under the Convention. The NIP therefore provides the basis for setting the actions of this full sized project.

It should be noted that the NIP covered 23 POPs, and provided preliminary data on the new industrial POPs added to the Convention Annexes in 2009 and 2013. This data will be expanded through a the NIP update project (GEF ID 9530)¹⁵ in beginning of 2017 which will clarify many of the gaps in baseline data indicated above as the stockpiles in manufacturing sites of Lindane. The NIP Action Plans identified the need to carry out more detailed survey on the presence of POPs in Brazil as the NIP identified the fact that the existing information can be considered as fragmented, often non-existent or unavailable.

2. To meet one of the requirements of the Global Monitoring Plan for POPs (GEF Project ID 3778)¹⁶, Brazil signed a Cooperation Agreement in 2010 with the Oswaldo Cruz Foundation (Fiocruz), which aimed to support the "Persistent Organic Pollutants study in breast milk in Brazil". The study was developed in cooperation with UNEP and generated important information for the implementation of the Stockholm Convention in Brazil, providing reliable and comparable data on POPs concentration in breast milk in different country regions. As a result of this project, CETESB has also included air monitoring in its ongoing monitoring programme and future planning. These outputs allow monitoring of the variation of POPs concentrations over time. Finally, technical staff from national laboratories had their capacity built or enhanced for POPs analysis which will be beneficial to the site investigations to be conducted under this project.
3. Under the Global Monitoring Plan for POPs, Brazil is a participating country (along with Antigua and Barbuda, Argentina, Barbados, Chile, Colombia, Cuba, Ecuador, Jamaica, Mexico, Peru and Uruguay) in the project "Continuing regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Latin American and Caribbean Region" (GEF Project ID 4881)¹⁷. The project is in cooperation with UNEP (GEF Agency) and the Stockholm Regional Centre in Uruguay - as another Executing Partner. The project objective is to strengthen capacity for implementation of the revised POPs Global Monitoring Plan in the Latin American and Caribbean region and create the conditions for sustainability of the networks. It is expected that the project will be concluded in 2018. The Ministry of Environment of Brazil is the Executing Agency for this project and will ensure coordination.

¹⁴ https://www.thegef.org/gef/project_detail?projID=2096

¹⁵ <https://www.thegef.org/project/review-and-update-national-implementation-plan-stockholm-convention-persistent-organic-7>

¹⁶ <https://www.thegef.org/project/supporting-implementation-global-monitoring-plan-pops-latin-america-and-caribbean-states>

¹⁷ <https://www.thegef.org/project/continuing-regional-support-pops-global-monitoring-plan-under-stockholm-convention-latin>

Project Preparation Phase

The project baseline will be strengthened with a preparation phase. This phase will comprehensively investigate the stockpiles and buried stockpiles at Cidade dos Meninos and Matarazzo Industries, and will do a preliminary investigation of sites where HCH has been formulated and stored in the state of Bahia.

Activities to be completed during the project preparation phase will include, but not be limited to:

- confirmation of the detailed baseline scenario through targeted surveys and studies at former Lindane production, formulation and storage sites;
- a feasibility study, taking into account the detailed baseline and reviewing available technologies and their suitability in the Brazilian context;
- the design and establishment of a public private sector partnership, between the Government of Brazil, an international technology provider and private sector partners in Brazil. This will be an essential contributor to the overall sustainability of the project in years to come;
- the design of an outreach and communications strategy to wider project stakeholders on the aims and objectives of the project and the benefits to Brazil;
- confirmation of sources and exact amount of co-financing; and
- completion of a detailed stakeholder analysis plus capacity assessments to allow confirmation of the institutional arrangements for project execution in Brazil at State and Municipality level;

It should be noted that Brazil will, in parallel to this project, complete the NIP update process to revise the new industrial POPs added to the Convention at COP4, COP6 and develop the initial inventory of new industrial POPs listed during COP7 (2015), with the development of related action plans. The NIP update will also search for potential stockpiles of Lindane (plus associated waste isomers) in production sites in Brazil. The PPG and NIP update will therefore cover some of the data gaps in the NIP; provide a full and detailed analysis of the baseline for Lindane management in Brazil; and, allow for the development of long lasting and coherent strategies for POPs management into the future.

Table 1: Outputs of the the PPG and NIP update projects that will strengthen the baseline of the FSP

| Gaps in the NIP | NIP update | PPG |
|---|--|---|
| Gaps in the inventories of Lindane in previous manufacturing sites. | <ul style="list-style-type: none"> - Preliminary investigation of Lindane manufacturing sites; - Awareness raising activities about stockpiles of POPs pesticides and contaminated sites in the other Brazilian States | <ul style="list-style-type: none"> - Detailed investigation of two Lindane manufacturing sites; - Awareness raising and consultation with main stakeholders to develop a detailed stakeholder analysis and confirm co-financing; - Feasibility study to review available technologies for the ESM of Lindane and its isomers; - Design and establishment of the PPP for the rehabilitation of the contaminated sites; - Elaboration of an outline sustainability plan to ensure the scaling up of the project operations to address similar sites across Brazil post project; and - Outreach to wider project stakeholders. |

1.3 Proposed alternative scenario, GEF focal area strategies, expected outcomes and components of the project

Proposed scenario:

This project will address the ESM of Lindane and implementation of the NIP Action Plan by:

- Implementation of demonstration activity on Lindane to establish best practice and practical experience. This element of the project will aim to eliminate a minimum of 5,000 tons of Lindane wastes from the sectors outlined above. This baseline will be confirmed in the PPG phase and as part of the NIP update activities;
- Development of the national capacity for the sustainable implementation of Lindane management strategies in the Federal and State government level, civil society and industry;
- Elaboration of a sustainability plan for the scale of project activities across similar sites in Brazil based on a combination of adoption of the polluter pays principle in Brazilian regulations and the offset of costs of rehabilitation by future sale of land for use as new industrial zones for development;

As outlined in the previous section, the project scope is in line with the priority actions established in the NIP. The project has been designed to be implemented as one component. It aims to improve management of Lindane and Lindane isomer stockpiles and Lindane production sites (which include Lindane burial sites) in Brazil. The result will be the disposal of 5,000 metric tons of Lindane and its isomers plus the development of a sustainable system to address the remaining stockpile of similar wastes through establishment of a local treatment option and the development of land planning and industrial zoning protocols which allow the rehabilitated sites to be used in the future..

The technical nature of the project will necessitate the involvement of experienced waste management companies from outside Brazil partnering with local waste management operators to transfer skills and technology into the Brazilian context. The project will also work with teams at both Federal and State levels to establish the necessary waste regulation and future land use planning systems to ensure rehabilitated sites can be used as viable commercial zones in the future, so offsetting the costs of waste treatment at sites and establishing a sustainable model based on cost recovery for additional sites post project. It is therefore planned to develop a series of project task teams under the overall supervision of the assigned officer from the Ministry of Environment to coordinate project execution at Federal Level and to act as the focal point for coordination with State level stakeholders identified during the PPG. The thematic teams will be made up of representatives from a range of stakeholders depending on a technical and administrative capacity assessment to be completed during the PPG.

Component 1 – ESM of Lindane stockpiles and abandoned Lindane production / formulation sites

The component will use the baseline data established through the NIP, PPG and NIP update to develop a specific strategy for ESM of Lindane and Lindane burial sites. The project will then focus on the implementation of the strategy resulting in the ESM and disposal of a minimum of 5,000 metric tons of Lindane in Brazil.

Project Structure:

Expected Outcome 1:

Improved management of Lindane and associated waste in Brazil, resulting in reduced risk to public health and the environment.

Expected Outputs:

Output 1.1: Assessment of the current situation of stockpiles of Lindane and its isomers;

1.1.1 Develop a detailed site investigation report to delineate the amount of buried Lindane (in accordance with CONAMA No. 460/2013, which establishes guidelines for the environmental management of contaminated sites);

1.1.2 Develop a risk assessment report;

1.1.3 Review technology options for remediation locally in Brazil and select the most appropriate financing for remediation;

1.1.4 Develop a risk management strategy;

1.1.5. Completion of regulatory gap analysis on waste treatment and licensing of facilities to include future land planning aspects and revision of existing regulatory systems to promote the “polluter pays” and “proximity” principles enshrined in the Basel Convention.

Output 1.2: Development of State and Federal level register and GIS database for Lindane burial sites and ESM strategy in Bahia, São Paulo and Rio de Janeiro States;

1.2.1 Develop State and Federal level register and GIS database for lindane affected sites;

1.2.2 Integrate data from inventory of other POPs pesticide wastes and registration of locations (from NIP update);

1.2.3 Initial site investigations and risk assessments at all POPs pesticides sites and entry onto the Federal register.

Output 1.3: Demonstration of ESM for investigation and risk reduction in two Lindane production sites including the disposal of 5,000 metric tons of Lindane and its isomers.

1.3.1 Implement short term remedial measures to reduce immediate risks to human health and the environment;

1.3.2 Remove and treat buried Lindane waste in situ through introduction of a technology solution to Brazil in partnership with a local waste management company;

1.3.3 Conduct pilot scale wider site remediation and stabilisation to minimise impacts to include a post-remediation monitoring programme.

Output 1.4 Development of national capacity, knowledge management and outreach in the States of Bahia, Rio de Janeiro and Sao Paulo.

1.4.1 Development and implementation of a training strategy to support the project implementation (including Federal and state government levels, civil society, and industry);

1.4.2 Develop and implement a chemicals communication strategy (KAP survey);

1.4.3 Develop, run and assess a trial version of a National POPs and other hazardous Chemicals Management Information System;

1.4.4. Elaboration of a national strategy for remediation of remaining lindane affected (plus other POPs) sites based on a sustainability plan based on polluter pays and cost recovery from future land use for industrial purposes.

Output 1.5 Monitoring and evaluation

1.5.1. Inception workshop, annual steering committee meetings and project closure meeting;

1.5.2. Quarterly financial forecasts and expenditure reporting

1.5.3. Annual PIR;

1.5.4. Mid term review and terminal evaluation under UN environment independent evaluation office.

1.4) Incremental/additional cost reasoning and expected contributions from the baseline and the GEF TF, and co-financing

The project will build on a series of on-going initiatives and programs currently active in Brazil and will provide incremental budget in line with the requirements of the GEF. The on-going initiatives provide significant co-finance to the GEF contribution and are mobilized from a combination of public and private sector partners as indicated below. The partner institutions will provide an indicative co-financing of approximately 6:1.

Significant activities and contributions, which have supported ESM of Lindane in the previous 5 years, these contributions are outlined below.

- i. The National Health Foundation (FUNASA) is responsible for the *Remediar* Project that consists of a qualified survey of the information on the location of the stocks of products used in public health campaigns to control endemic diseases. Altogether 146 storage locations throughout Brazil were investigated by *Remediar* Project. The next step of this project will be the development of Preliminary Assessment, Confirmatory and Detailed Investigation, Human Risk Assessment and elaborate the Intervention Plan in selected contaminated sites. The indicative co-financing over the PPG and project implementation phase is therefore estimated at USD\$ 12M.
- ii. The National Institute for Processing Empty Containers (Instituto Nacional de Processamento de Embalagens Vazias - inpEV) has a proven track record on the collection and ESM of POPs pesticides and associated wastes and on the recycling of plastics from pesticide containers. The indicative co-financing over the PPG and project implementation phase is therefore estimated at USD\$ 7M; and
- iii. The São Paulo State Environmental Protection Agency (Companhia Ambiental do Estado de São Paulo - Cetesb), as the Stockholm Convention Regional Centre for Latin America and the Caribbean will co-finance the project by contributing with technical resources and activities for capacity building and development of studies. The Centre conducts trainings for State environmental agencies in Brazil and for managers and technicians from LAC countries on laboratory analysis. A total of 238 professionals have been trained in the past 5 years. The co-finance over the past 6 years has been USD25.7M. Based on the approved budget for the Centre the indicative co-financing over the PPG and project implementation phase will be USD 17M.

The indicative co-finance from these project partners demonstrates the on-going level of commitment and contribution in Brazil. The activities are in addition to the commitment of the Federal and State level government departments, which currently support POPs management in Brazil. The co-finance from the Federal and State government sectors will be principally in-kind in terms of staff time and office facilities for project management and coordination activities essential to the project implementation.

Significantly, the project will develop a public-private sector partnership resulting in the installation and operationalization of a facility in Brazil to destroy POPs wastes. Without GEF support, on-going initiatives will address issues in a piecemeal manner resulting in lost opportunities for cost sharing and coordination of efforts.

This is fully inline with Article 6 of the Stockholm Convention which requires parties to take appropriate measures so that wastes consisting of, containing or contaminated with POPs are disposed of in such a way that the POP content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of POPs, or can be otherwise disposed of in an environmentally sound manner. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal Secretariat has developed the 'updated general technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants' (hereinafter referred to as 'Basel Technical Guidelines'), including a section on destruction and irreversible transformation methods. The Basel Technical Guidelines include fact sheets for the following methods for the destruction and irreversible transformation of POPs. These methods will be further investigated as part of the feasibility study to be completed during the PPG. A brief overview of technologies to be considered is included below:

Table 2: Overview of destruction methods according to Basel Technica Guidelines

| Destruction method | Destroys pesticides | Mobile option | Destruction efficiency | Advantages | Disadvantages |
|--|----------------------------|---|-------------------------------|--|--|
| Alkali metal reduction | Yes | Yes | 99.9999% | Low temperature, inexpensive | Requires permanent power supply |
| Base-catalysed decomposition | Yes | Yes | 99.9999% | Modified BCD process can destroy POPs in aqueous medium, wet sludge or oils. | |
| Cement kiln co-incineration | Yes | No | 99.9999% - at main burner | Facilities and infrastructure are already in place | Numerous: including need adequate infrastructure, technical feasibility and competence to deal with waste management and co-processing |
| Plasma arc | Yes | Yes, container based models available | 99.9999% | Can be used for a wide range of wastes including liquids, solids and gases. Smaller installation size for a given waste throughput | Plasma process requires high level of electricity as energy source, which unfavorably influences the process economics. |
| Supercritical water oxidation and subcritical water oxidation | Yes | General Atomics has mobile plants. | 99.9999% | Relatively small reactor volume, positive public perception | Corrosion; salt precipitation/accumulation; potential erosion from solids |
| Thermal and metallurgical production of metals | Yes | Mobile plants are transported to remediation location | 99.9999% | Cost competitive for large volumes of soils | Used mainly for soils, may not be suitable for Brazilian situation |

Other technologies are also listed by the Basel Convention Guidelines, but without technology fact sheets. These will also be reviewed during the PPG and include: Potassium *tert.*-butoxide method; waste-to-gas conversion; Photochemical dechlorination and catalytic dechlorination reaction; hazardous waste incineration; Gas-phase chemical reduction; and Catalytic hydrodechlorination. The PPG will also review the feasibility and relevance of these technologies.

1.5) Global environmental benefits

The key global environmental benefits of the project will be the ESM of at least 5,000 tons of Lindane wastes and the development of capacity for Brazil to meet POPs management requirements set at the international and national level. The sustainability and scale up plan will allow for significant but as yet unquantified additional POPs disposal post project.

1.6) Innovativeness, sustainability and potential for scaling up.

The project will primarily build on the experience of the national stakeholders and UNEP on management of POPs. The project has numerous elements which are new in the wider GEF context and which will provide results and proof of concept, which can be scaled up at national level and also replicated in other countries / projects. The primary areas of innovation in this project can be considered as:

1. Demonstration of ESM of Lindane through the installation of POPs destruction facility: the project aims to develop a PPP between an international technology company, the Brazilian Government, and a local company to install and operate a POPs destruction facility. This facility will be used during the project to destroy 5,000 tons of Lindane wastes from Brazilian stockpiles, and former production sites. This facility will remain in place post-project and will continue to operate as a PPP, ensuring that Brazil has access to a POPs destruction facility, facilitating the destruction of stockpiles of other POPs identified in the NIP and the NIP update;
2. BRS reporting linked to national Knowledge Management system: UNEP is in the process of assisting countries through the development of a national reporting system (NRS) for multi-lateral environmental agreements. The system requires input of data at national level and can be tailored to meet the specific requirements for each of the relevant MEAs. The project will look to develop the data collection and reporting formats which will allow national data to be entered into the system to meet national reporting requirements for the BRS conventions;
3. National guidance and training materials: whilst there are extensive guidance and training materials developed at Global level related to the ESM of Lindane, there remains a lack of materials adapted to regional and / or national needs. The project will therefore take existing guidance and work with national stakeholders to adapt to the national context. The project will also fill any gaps in existing guidance, which will feed into the wider global knowledge and support to countries on ESM of Lindane, notably in Latin American and Portuguese speaking African countries;
4. Off-set of future scale up through land use planning: the project will work with site owners, State / Federal administrations and land use planning departments to off-set the cost of site clean-up and POPs destruction by factoring the future land use of the industrial sites. It is proposed the sites be classed as suitable for industrial use with the associated planning restrictions in place to prevent impacts on local populations and the wider environment.

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

Implementation of this project will require the inclusion of a variety of stakeholders from the Federal / State governments, civil society, private sector, international organisations / regional institutions and academia.

Under the overall coordination of the office of the Stockholm Convention focal point based in the Ministry of Environment the project will strengthen the existing close relationship with relevant Ministries, regional environmental authorities, chemical industry associations, private sector associations, NGOs and other relevant

stakeholders. The project will also work in close cooperation with the National UNEP office and as needed technical inputs may be provided from the UNEP Chemicals and Waste Branch. The participation of civil society will be essential, both as active participants in a broad range of activities (from project design, implementation and monitoring to actions on the process of leveraging partnerships and resources) and as a beneficiary. A summary of the main stakeholders for the project is provided below:

(i) The *United Nations Environment Programme (UNEP)*, as GEF Implementing Agency, is the principle actor mandated in the UN system for international activities related to the sound management of chemicals. UNEP's mission in the Chemicals and Waste sector is to promote chemical safety by providing policy advice, technical guidance and capacity building to developing countries in line with the principles of the Strategic Approach to International Chemicals Management (SAICM). As a GEF IA UNEP will provide project oversight and supervision. In addition, UNEP may be tasked with the provision of targeted technical assistance to the execution of specific project outputs from the UNEP Chemicals and Waste Branch based in Geneva, the International Environmental Technology Centre (IETC) based in Osaka, Japan, and the UNEP Green Economy team based in Geneva (PAGE);

(ii) The *Ministry of Environment*, through the office of the Stockholm Convention focal point will act as the project Executing Agency (EA). The office has proven competence in previous implementation of international cooperation projects related to POPs and related wastes management and is ideally suited to coordinate this project across all POPs sectors. As EA the office will be responsible for day-to-day project management and management of the delivery of the various project Outputs. The Ministry team will identify technical specialists to support execution of each of the Outputs. Representatives from the State Government and municipalities will be invited to take part in the task team as determined during the execution of the PPG stage of the project. A tentative organogram of the EA function is provided below;

(iii) The *Regional Centre for the Stockholm Convention for Latin America and the Caribbean (Companhia Ambiental do Estado de São Paulo – Cetesb)* has been identified as Project Executing Partner. Cetesb has environmental expertise in Brazil and since 2008 is part of a network of 16 centers and sub-centers in charge of providing technical assistance and promoting technology transfer to developing countries for the implementation of their obligations under the Stockholm Convention. Cetesb will support all the project activities under the supervision of the EA;

(iv) Brazilian State Governments (States): the NIP project was implemented by the Federal Ministry of Environment of Brazil with the contribution of the States. In order to collect data from the States, an official communication was sent to Environmental Agencies in each State asking for information about POPs used in the State, measures undertaken for its disposal and the existence of stockpiles. The weakness of this approach was the low and irregular rate of participation of States in the NIP project. Based on this experience the FSP will be operated to guarantee a regular partnership with the States of Bahia, Rio de Janeiro and Sao Paulo, where the contaminated production sites are located, as well as increase the involvement of other national stakeholders. During the PPG phase the Environmental Agencies of the States of Bahia, Rio de Janeiro and Sao Paulo will nominate focal points to be accountable for the participation of that State in the project. A chemicals management unit will also be constituted in each State to contribute with the implementation of the BRS and Minamata Conventions. This will be reflected in a formal agreement that each State will have with the federal Ministry of Environment. The purpose of this approach is to increase and institutionalize the participation of the subnational administrative levels in the implementation of the project and contribute to the national ESM of chemicals and wastes beyond the project.

(v) The National Health Foundation (FUNASA) will be a key stakeholder for this project. The previous experience of the Foundation in identifying and managing burial sites will be used during the implementation of this FSP. At the moment Funasa is hiring an institution for the Management of Contaminated Sites that were used for storage and / or manipulation of Lindane and DDT. All this expertise will contribute for the project implementation.

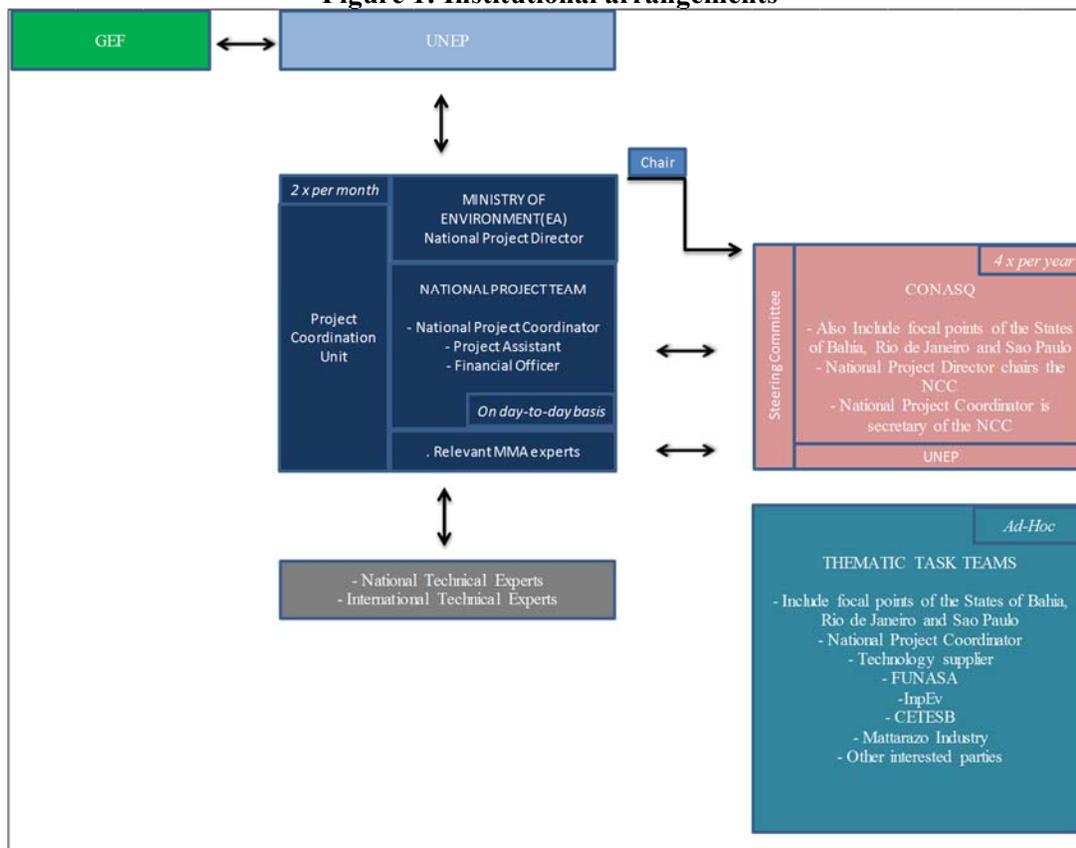
(vii) The National Institute for Processing Empty Containers (inpEV) participated in the projects of identification and management of obsolete pesticides in the States of Parana and Sao Paulo. InpEV gave technical and logistical support for the identification and ESM of these wastes. In the GEF project inpEV will equally contribute to the ESM of stocks identified during the PPG phase and will contribute to develop a long term strategy for the management of POPs pesticides at State and Federal levels.

(viii) Others *Civil Society / NGOs / Private Sector/Academia* (see table)

Table 3: Other stakeholders

| NGOs and civil society | | |
|--|---|---|
| Name of stakeholder / Organization | Rating of risks | Responsibility/expertise |
| Research Institutes | High level of interest, non- decision making organization | Provides methodological support on POPs analysis in humans, especially in vulnerable populations. |
| Universities | High level of interest, non- decision making organization | Provides methodological support to relevant national institutions in terms of monitoring POPs wastes and releases to the environment. |
| Brazilian Forum of NGOs and Social Movements for the Environment and the Development (FBOMS) | Medium level of interest, non-decision making organization. | NGOs will be invited to actively participate in the project preparation and in the project’s implementation. FBOMS has a representative chair in the CONASQ. |
| Brazilian Association Against Pollutants (ACPO) | High level of interest, non-decision making organization. | ACPO plays a significant role in public awareness raising on POPs issues, including emissions from industries. |
| Central Workers Union (CUT) | Low level of interest, non-decision making organization. | CUT is a Brazilian trade union mass organization, on high level of class character, autonomous and democratic, whose commitment is to defend the immediate and historical interests of the working class. |

Figure 1: Institutional arrangements



3. *Gender Equality and Women’s Empowerment.* Are issues on [gender equality](#) and women’s empowerment taken into account? (yes /no). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

Gender will be considered in all project components. The PPG will including gender baselining, including the collection of gender disaggregated data and assess the different needs, priorities and roles for both man and women in each the project. Baseline data may include quantitative data as the number of men and woman involved in the ESM of Lindane nationally at the political and technical levels; number of men and women involved in the project design, implementation and review; and qualitative data as how women and men are exposed to contamination; how men and woman are participating in the project activities. Th PPG will also draw on existing Brazilian studies on the presence of HCH in breast milk, as well data on exposure and risk analysis.

The identification of gender experts that could be involved in the project from its design until its final evaluation will also be part of the PPG. A strategy aimed at increased gender equality and women empowerment will be developed taking these assessments into account and will guide the whole project execution. A set of disaggregated gender indicators will be developed as part of the strategy to measure and track progress towards this objective and will be included in the project logframe. The indicators will be quantitative and qualitative to measure and track also changes in perception.

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

Table 6: Risks identified and mitigation strategy

| Risk identified | Risk level | Mitigation strategy |
|--|-------------------|--|
| Lack of local private sector partners willing to join PPP | Low | The PPG will include baselining of Lindane waste in Brazil; a fully costed feasibility study on destruction technologies; and consult with international technology providers, the Brazilian Government, and local companies. Anecdotal evidence from consultations with the Brazilian Government indicate a robust private sector in Brazil and a favourable investment environment. This will however, be confirmed in the PPG stage, when companies will be evaluated, commercial due diligence completed, and a PPP designed, and a legal basis for cooperation developed. |
| Holders of POPs waste are not receptive to phase-out or promotion of alternatives (Low risk) | Low | The project will provide information, awareness raising materials and educational activities among the stakeholders regarding the risks of Lindane and the importance of being part of the project. |
| Scale of the problem is greater than anticipated and timeframe for project implementation is too short to achieve expected results | Low | The project is not aiming to remove all POPs from Brazil but to demonstrate ESM in priority sectors identified in the NIP. These elements of the project will be based on a risk based prioritisation focusing at removing Lindane stockpiles which pose the greatest risk to public health and environment, and developing a longer term strategy for continued actions post project. In addition, the planned NIP update project and the PPG will fill the gaps related to the preliminary site investigation allowing for the establishment of a solid project baseline. Based on the baseline a detailed project workplan will be developed with associated monitoring and evaluation / milestone tracking plan. The responsibility for reporting on progress against the agreed work plan will be passed to the Project Coordination in Ministry of Environment. It is also important to note that during the PPG the project team will identify the detailed composition of the Output Task Teams which will be responsible for delivering the milestones at Output level. |
| Laboratory infrastructure is not sufficient to meet the demand for POPs analysis | Low | The national capacity will be assessed during the PPG phase and a plan will be developed to support analytical capacity during the project implementation. GEF funds will not be used to purchase capital equipment for analysis under this project. |
| Limited political willingness | Low | The project will demonstrate and reaffirm to the key stakeholders the national commitment to the global objectives of the Stockholm Convention through the national CONASQ meetings. Brazil is one of the first countries to have signed and ratified the Convention and has long established programs related to chemical safety, environmental licensing of industry, monitoring emissions from industry and waste management. |
| Future land use for industrial zoning not possible | Moderate | The future scale up of the operations will rely on the sites having an intrinsic value for building development once the lindane is removed. This will require State and Federal administrations supporting the establishment of revised regulation on land use planning of ex-industrial sites and may be subject to local community opposition unless the benefits to the local community can be demonstrated and communicated effectively. |

| | | |
|---|--------|---|
| Lack of participation by Stakeholders | Low | Many of the activities set out in this project require the participation and coordination of a broad range of stakeholders. In some countries cooperation among ministries and broader coordination with civil society groups and industry is a risk and can put in jeopardy the ability of a project team to implement the project. In Brazil, during the NIP elaboration phase, there was increased dissemination of information and raised awareness of key stakeholders about POPs related issues and the need to eliminate POPs in an environmentally sound manner. The Ministry team have already started engaging with key stakeholders including the National Chemical Safety Commission (Conasq), which consists of 21 institutions from the public and private sectors, academia and organized civil society. During the PPG, there will be efforts to enhance civil society and private sector active participation through the implementation of a communication and awareness raising plan on chemicals and through the provision of training. |
| POPs are no more considered a national priority due to the government changes and low political support | Low | The project already has strong political support and has the commitment of the Brazilian Government to be fully implemented. The project is linked to other two commitments: the pluriannual plan (2016-2019) and the strategic planning of the Ministry of Environment (2015-2022). |
| Poor capacity to attract and retain qualified staff, experts and companies to support project's activities | Medium | In the previous projects managed by this Ministry there were challenges related to the recruitment of qualified consultants. The project will mitigate this risk by ensuring a diversified approach to project execution through the establishment of Task Teams under the supervision of the Ministry staff complemented with external execution by partners such as Basel Regional Centre (Cetesb), civil society / NGO partners, academia and private companies / consultancies. |
| Logistics for POPs destruction or interim storage is constrained or at least challenging for some States or sectors | Low | The project will build on existing capacities where possible. A capacity assessment will also be completed as part of the sector strategy development process which highlights any constraints and develops plans to address any risks. |
| Institutional changes at federal and State level, leading to priorities changes along project lifetime | Low | The project is aligned with the 2016-2019 Pluriannual Plan (the main planning instrument of the Brazilian Federal Government) and is also consistent with the Ministry of Environment's 2014-2022 Strategic Plan. It is therefore expected that institutional changes at federal and State level will not impact the Brazilian commitment to reach the project objectives. |

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

1. The NIP update project (GEF ID 9530)¹⁸ will start beginning of 2017 and will clarify some of the gaps in baseline data indicated previously. above as the stockpiles in manufacturing sites of Lindane. The Ministry of Environment of Brazil is also Executing this project and will ensure the coordination;
2. Under the Global Monitoring Plan for POPs, Brazil is a participating country (along with Antigua and Barbuda, Argentina, Barbados, Chile, Colombia, Cuba, Ecuador, Jamaica, Mexico, Peru and Uruguay -

¹⁸ <https://www.thegef.org/project/review-and-update-national-implementation-plan-stockholm-convention-persistent-organic-7>

GEF Project ID 4881): “Continuing regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Latin American and Caribbean Region”. The project is in cooperation with UNEP (GEF Agency) and the Stockholm Regional Centre in Uruguay - as other Executing Partner. Lindane monitoring in breastmilk and air is included in this project. The Ministry of Environment of Brazil is also Executing this project and will ensure coordination between the two initiatives;

3. To comply with the provisions of the Stockholm Convention for PCBs, Brazil is currently implementing a Full-sized project funded by GEF, titled “Brazil - Establishment of PCB Waste Management and Disposal System” (GEF project ID 3282). The project is implemented by UNEP and executed by the Ministry of Environment, therefore coordination will be ensured if needed;
4. Brazil is implementing the GEF project “Development of Minamata Convention on Mercury Initial Assessment in Brazil”¹⁹, (GEF project ID 5861). The project is implemented by UNEP and executed by the Ministry of Environment, therefore coordination will be ensured if needed;
5. Under the GEF 6 Integrated Approach Pilot (IAP) for Cities UNEP is Implementing project GEF ID 9142. This new proposal will coordinate administrative support to both projects to ensure timely reporting and production of financial statements.

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

As previously stated, Brazil submitted the National Implementation Plan (NIP) of the Stockholm Convention to the Convention Secretariat on April 23 2015. The NIP confirms the environmental sound management of Lindane as main component.

In consistency with national priorities, some of the actions listed in the NIP are targets listed in the 2016-2019 Pluriannual Plan (the main planning instrument of the Brazilian Federal Government). This GEF Project is also consistent with the Ministry of Environment’s 2014-2022 Strategic Plan. Consequently, the environmentally sound management of POPs waste and the development of national capacity for sustainable implementation of the NIP are consistent with approved national development priorities.

Although chemicals and related wastes are integrated into national policies and programmes and included in the annual federal budgeting, they are strongly recommended to be eligible for bilateral development assistance.

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

This project will take advantage of the experience gained by the Ministry’s implementation team in the other projects listed above, especially the Stockholm NIP and the on-going PCB Project.

Output 1.4 of this project will aim to design and implement an effective knowledge management system including a pilot system for managing chemicals in Brazil. The system will also facilitate reporting for MEAs through an interface with the UNEP Chemicals and Waste Knowledge Management system currently under development across the UNEP GEF portfolio.

¹⁹ https://www.thegef.org/gef/project_detail?projID=5861

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

A. RECORD OF ENDORSEMENT²⁰ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

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

| NAME | POSITION | MINISTRY | DATE (MM/dd/yyyy) |
|-----------------------------|-------------------------|--|-------------------|
| Mr. Marcelo Moises DE PAULA | Operational Focal Point | MINISTRY OF PLANNING BUDGET AND MANAGEMENT | FEBRUARY 29, 2016 |

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies²¹ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

| Agency Coordinator, Agency name | Signature | Date (MM/dd/yyyy) | Project Contact Person | Telephone | Email |
|---|---|-------------------|---|------------------|----------------------|
| Brennan Van Dyke Director, UNEP GEF Coordination Office |  | February 13, 2015 | Kevin Helps Senior Programme Officer DTIE, UNEP | +254-20-762-3140 | Kevin.Helps@unep.org |

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

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

²⁰ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

²¹ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF