



Empowered lives.
Resilient nations.

United Nations Development Programme

Country: VIET NAM

PROJECT DOCUMENT¹

Project Title:	Viet Nam POPs and Sound Harmful Chemicals Management Project
UN One Plan III Focus area(s):	Focus area 1: Inclusive, Equitable and Sustainable Growth
Expected OP Outcome(s)/Indicator(s):	<p><u>Outcome 1.4:</u> By 2016, key national and sub-national Agencies, in partnership with the private sector and communities, implement and monitor laws, policies and programmes for more efficient use of natural resources and environmental management, and implement commitments under international conventions</p> <p><u>Indicator 4 :</u> Percentage of waste and industrial waste water treated</p>
Expected OP Output(s) and Indicator(s):	<p><u>Output 1.4.3:</u> Policies, plans and technical skills are strengthened for the sound management of hazardous chemicals and persistent organic pollutants (POPs), in accordance with international conventions.</p> <p><u>Indicator 1 :</u> Number of tones of POPs (obsolete pesticides, pesticide contaminated soils and dioxin contaminated soil) contained and remediated in accordance with international environmental requirements.</p>

National Implementing Partner:

-Ministry of Natural Resources and Environment /Viet Nam Environmental Agency

Co-National Implementing Partner:

- Ministry of Industry and Trade/ Viet Nam Chemical Management Agency

¹ For UNDP supported GEF funded projects as this includes GEF-specific requirements

Brief Description

The project objective is the continued reduction of environmental and health risks through POPs and harmful chemicals release reduction achieved by provision of an integrated institutional and regulatory framework covering management and reporting of POPs and harmful chemicals within a national sound chemicals management framework and targeted development of POPs contaminated sites management capacity that builds on experience from GEF-4 projects and specifically built a management plan at provincial level to assess risk and implement release reduction measures at all the POPs contaminated sites in two provinces.

The specific project objectives are to strengthen national capacity on safety management of POPs and harmful chemicals; control and reduce release of POPs/PTS to environment from POPs/PTS contaminated site; perform a preliminary inventory of mercury sources and draft a roadmap on mercury reduction.

Programme Period:	2012 - 2016	Total resources required	USD 13,600,000
Atlas Award ID:	82491	Total allocated resources:	USD 13,600,000
Project ID:	91381	• GEF	USD 2,550,000
PIMS # 5154		• Parallel (In kind & In cash):	
Start date:	mid 2015	○ MONRE	USD 7,900,000
End Date	mid 2018	○ MOIT	USD 150,000
		○ JICA	USD 3,000,000
Management Arrangements	NIM		
LPAC Meeting Date	TBD		

Agreed by (Implementing Partner):

Date/Month/Year

Agreed by (UNDP):

Date/Month/Year

Table of contents

I.	Situation analysis	6
	Country Context.....	6
	Baseline analysis.....	12
	Relevant Initiatives and Project (<i>Baseline Projects</i>).....	26
	Stakeholder analysis.....	29
	Barriers analysis.....	33
II.	Strategy.....	35
	PROJECT CONFORMATY TO NATIONAL POLICIES	36
	PROJECT RATIONAL AND INTERNATIONAL POLICY CONFORMATY.....	38
	Project Description	39
	Project Goal, Objective, Outcomes and Outputs/activities.....	39
	Country Ownership: Country Eligibility and Country Driven.....	53
	Sustainability	54
	Replicability.....	55
	Global Environmental Benefits.....	55
	Results Framework	56
	Incremental Reasoning.....	56
	Co-financing	57
III.	Project Results Framework:	58
	Incremental cost :.....	81
IV.	Management Arrangements.....	84
	Project Organization Structure	84
	General.....	86
V.	Monitoring Framework and Evaluation	87
VI.	LEGAL CONTEXT	90
VII.	Annexes	91
	Annex I: Risk Analysis.....	92
	Annex II: TOR for key project personnel and technical consultants.....	99
	Annex III: list of industries in Binh Duong related to POPs use or release.....	108

List of Acronyms

APR	Annual Project Report
AWP	Annual Work Plan
BAT/BEP	Best Available Technique / Best Environmental Practice
CO	Country Office
EIA	Environmental Impact Assessment
FSP	Full Size Project (GEF terminology)
GEF	Global Environment Facility
GHS	Global Harmonization System for classification of chemicals
GLP	Good Laboratory Practice
GoV	Government of Viet Nam
HW	Hazardous Waste
IBRD	International Bank for Reconstruction and Development
IP	national Implementing Partner
IR	Inception Report
I-TEQ	Internationally agreed TEQ - 1 g TCDD equals 1 g I-TEQ
IW	Inception Workshop
LEP	Law of Environmental Protection
LOC	Law on Chemicals
MOIT	Ministry of Industry and Trade
MONRE	Ministry of Natural Resources and Environment
NAP	National Action Plan
NEX	National Execution
NIP	National Implementation Plan (re Stockholm Convention on POPs)
NPD	National Project Director
ODS	Ozone Depleting Substance
PBDE	Polybrominated diphenyl ethers
PFOS	Penta fluorooctane sulfonate
PCBs	Polychlorinated biphenyls
PIF	Project Identification Form (GEF terminology)
PIR	Project Implementation Review (annual GEF requirement)
PM	Project Manager
PMU	Project Management Unit (PMU)

POPs	Persistent Organic Pollutants
PPC	Provincial People's Committee
ppt	Parts per trillion
PRTR	Pollutant Release and Transfer Register
PTSs	Persistent and Toxic Substances
SRF	Strategic Results Framework
TS	Technical Specialist
SAICM	Strategic Approach for International Chemical Management
STAP	Scientific and Technical Advisory Panel (to GEF)
TCDD	2,3,7,8- Tetra Chloro dibenzo-dioxin
TEQ	Total dioxin toxic equivalence (toxicity as if a mixture is pure TCDD)
TTR	Terminal Tripartite Review
UNEP	United Nations Environmental Programme
UNIDO	United Nations Industrial Development Organization
UNDP	United Nations Development Programme
UNDP-CO	United Nations Development Programme Country Office
U-POPs	Unintentionally produced POPs
USAID	United States Agency for International Development
USD	United States Dollar
US-EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VAST	Viet Nam Academy for Science and Technology
VRTC	Viet Nam - Russia Tropical Centre (under MOD)

I. SITUATION ANALYSIS

Country Context

Viet Nam is the easternmost country of the Indochina peninsula in south-east Asia. With an estimated 90.3 million inhabitants as of 2012, it is the world's 13th-most-populous country, and the eighth-most-populous Asian country. Political and economic reforms (Doi Moi) launched in 1986 have transformed the country from one of the poorest countries in the world, with per capita income below \$100, to a lower middle income country with per capita income of \$1,130 by the end of 2010. The ratio of population in poverty has fallen from 58 percent in 1993 to 9.6 percent in 2012, and most indicators of welfare have improved².

a. The situation of Chemical Industry in Viet Nam

The chemicals sector has been a major contributor to development of the country and Viet Nam's experience is representative of a global trend in transferring chemicals production and application from developed to developing countries. The chemicals sector average annual growth rates was 15% from between 1990 to 2004 and is currently (2011) at 12%. The chemical industry is important to the development of many other industries. The sector contributes to about 11.2% of the national industrial production value and creates jobs for more than 10% of the labour force throughout the industry³. With Decision 207/2005/QĐ-TTg the Prime Minister approved the strategy of developing the chemical industry to 2010, also with a look towards 2020.

Chemical industry in Viet Nam is divided into 10 chemical groups as illustrated in Figure 1. The sector engages more than 2,000 enterprises in chemical production, trading, importing, and exporting. Of these 671 enterprises are involved in the manufacturing of chemicals⁴, i.e. accounting for about one third of the total chemical enterprises. Data on chemical production in the main sectors in the last few years are presented in Table 1 below:

Table 1. Main chemical productions⁵

Sectors	Unit	Year						
		2006	2007	2008	2009	2010	2011	Prel. 2012
Chemical fertilizer	'000 Tons	2,182.6	2,499.4	2,459.4	2,360.0	2,411.3	2,602.0	2,861.4
Insecticide	Ton	53,113	59,485	65,410	75,381	73,633	79,787	89,888
Pesticide	Ton			19,381	26,825	24,218	30,302	36,574
Battery power	Thous. Kwh			11,083	11,989	15,931	13,667	13,998

Figure 1 Main chemical industry sectors in Viet Nam

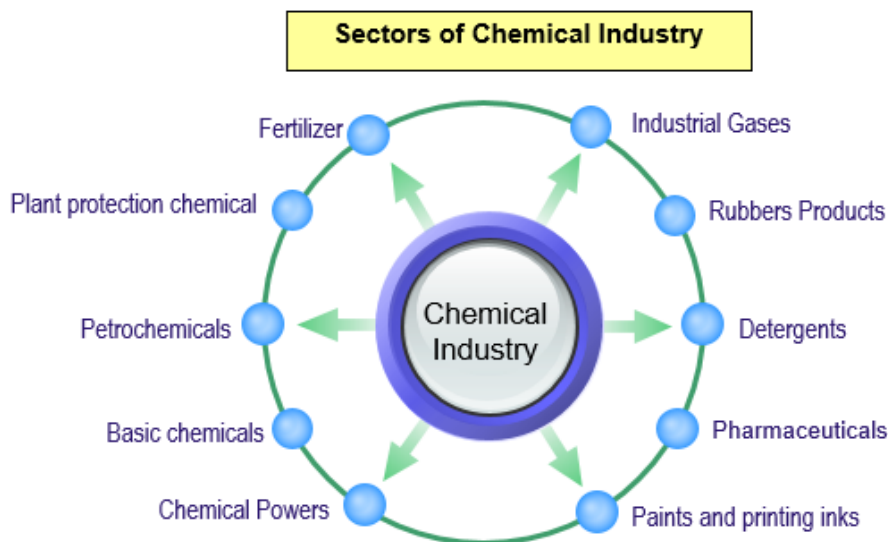
² [http://www.worldbank.org/en/country/Viet Nam/overview](http://www.worldbank.org/en/country/Viet%20Nam/overview)

³ Overview of chemical industry in Viet Nam (2013). <http://hoachatjisc.com/news/301/tong-quan-cong-nghiep-hoa-chat-viet-nam>

⁴ VINACHEMIA data

⁵ Main industrial product - General statistics Office of Viet Nam.

http://www.gso.gov.vn/default_en.aspx?tabid=470&idmid=3&ItemID=14442



Source: MOIT, 2013

Due to importance of the chemical sector in economic development, the Government has set the targets to further increase the chemical sector both as production (14 to 15%) and value (14-16%) by 2020 and 2030 respectively⁶, with specific focus on fertilizers, rubber, basic chemicals, petro chemicals, pharmaceutical chemicals.

This successful development however was not complemented by a comprehensive policy on sound chemical management: coupled with accelerated industrialization, inadequate pollution preventive measures, and low awareness within the industrial and other sectors about chemical risk and safety procedures, the country has experienced increased levels of pollution, industrial related accidents and spills.

Food poisoning due to overuse or abuse of chemicals in agriculture and food processing is also common (e.g. according to officially data from General Statistics Office, in 2013 the country there were 139 serious cases of food poisoning affecting 4,700 persons, of which 26 died; in January 2012 there have been seven cases of collective food poisoning affecting 4,400 persons, of which 01 died); chemical related accidents due to misuse, poor management and inadequate safety is also common.

At the same time, Viet Nam also has a significant history of chemicals use and the legacies that are associated with historical chemicals management and disposal practice. In addition to accumulation of POPs/PTS wastes and contaminated sites and their unintended release resulting from older technological processes and practices, the country has suffered major contamination due to wartime chemical defoliant use which has had health and ecological impacts on a unique scale globally.

These factors have resulted in (a) a very high level of national policy commitment to both addressing the POPs issue under the Stockholm Convention and (b) more recently pursuing SCM policies. The former is evidenced by the countries proactive implementation of the NIP under the direction of the Ministry of Natural Resources and Environment (MONRE) acting as

⁶ Viet Nam Master Plan on chemical development by 2020, vision by 2013" approved by the Prime Minister in August 2013

the Stockholm Convention focal point and the planned introduction of a chapter on chemicals directly into the overarching Law on Environmental Protection. Complementary to these efforts, is the recent (2011) establishment of the Viet Nam Chemicals Agency (VINACHEMIA) within the Ministry of Industry and Trade (MOIT) with overall responsibility for implementing sound chemicals management policies as well as acting as focal point for a number of international conventions, agreements and initiatives. These include the Minamata Convention, the Rotterdam Convention, Chemicals Weapons Convention, and International Convention on Chemicals Management (SAICM).

b. The Management of Hazardous Waste in Viet Nam

As for hazardous waste management, the circular 12/2011/TT-BTNMT (on hazardous waste management) has emphasized on licensing conditions that are binding to environmental impact assessment (EIA) or environmental protection commitment (EPC), requirements for registration of HW generation, conditions for HW collection, transportation, disposal, recycling and storage. Facilities engaged in collection, treatment, trade, and services related to hazardous waste must obtain permits before operation, and those who generate hazardous waste must register with authority agencies on code, type and volume of their hazardous waste. The very good point under the circular that it requires all HW generators, transportation and/or treatment facilities to keep the same HW document filled with information about hazardous waste, HW generators, transportation and/or treatment facilities and their obligation to periodically report (every 6 months) to the competent authority (figure 3) by standard report template. This facilitates control of HW movement, from its generation source to disposal facility. Fulfilment of Basel convention is also required under the circular 12 for export/import of hazardous waste. Requirement for emergency preparedness and response plan is however not specified under licensing conditions or during HW operation processes under this circular.

Reports from local government show the following problems regarding hazardous waste management at local level:

- A large number of waste generators do not register for their HW,
- HW operators do not submit report periodically as required
- Improper handling and storage of HW (e.g. mix HW with conventional waste, long time storage, improper packaging and labeling, etc.)
- HW is often transferred to those who do not have HW license
- Monitoring of HW do not follow frequencies required under the circular 12/2011/TT-BTNMT
- Lack of capacity for HW transportation and treatment at local level (in provinces)
- Lack of detail guideline for HW treatment technologies is a reason that makes investment fragmented, using outdated technologies or low treatment efficiency/effective,
- Low awareness on environmental protection and limited capacity in HW management at provincial level is another challenge for HW management in Viet Nam, etc.

A database system for HW management is very poor especially at local level and therefore very difficult to access to HW related information. Presently, MONRE is in the initial state of the establishment of an electronic manifest system for HW management.

c. Viet Nam and the Stockholm Convention

Viet Nam signed the Stockholm Convention on May 23, 2001 and ratified it on July 22, 2002. The Stockholm Convention NIP was adopted (Decision No. 184/2006/QD-TTg dated 10 August 2006 on approval of the National Implementation Plan for the Stockholm Convention on POPs) and submitted to the Stockholm Convention in November 2007. The NIP forms the basis of current programs related to POPs undertaken nationally, including four GEF-4 Projects addressing POPs stockpiles and wastes (POPs pesticides, PCBs, and highly dioxin contaminated hotspots) and U-POPs, as well as participation in a Global project on medical waste management. Currently, the government has adopted an overall strategy of integrating NIP implementation into a national framework for the sound management of chemicals throughout their life-cycle, such that the effectiveness of international and national efforts is optimized. A central part of this strategy is working with the GEF on development of an overall GEF-5 program aimed at addressing outstanding and emerging POPs and PTS issues, as well as ensuring that the NIP is undertaken within the developing SCM framework. More recently, the 2011 National Target Program on Pollution Remedies and Environmental Improvement adopted by the Government of Viet Nam provides a direct implementation framework to which the project can be linked, particularly in relation to POPs contaminated sites.

d. Viet Nam Status of ratification of international conventions on chemicals and environment

In addition to the Stockholm Convention, Viet Nam has ratified a number of other MEAs, listed in Table 2 below. The country is Party to the Basel Convention having acceded to this convention in 1995 and a Party to the Rotterdam Convention which it acceded to in 2007. Viet Nam has been one of the first signatory of the Minamata treaty on Mercury. With the establishment of the Viet Nam Chemicals Agency in 2008, the country intends to become an active member of the International Conference on Chemicals Management and is currently undertaking a SCM project under the SAICM Quick Start Program. As far as GHS is concerned, the Ministry of Industry and Trade (MOIT) issued on 13 February 2012 the circular No. 04/2012/TT-BCT, establishing classification and labelling requirements for substances and mixtures in line with GHS. The circular follows a number of earlier pieces of legislation implementing parts of the GHS and stipulates a transitional period for implementation of 2 and 4 years for substances and mixtures, respectively, from its effective entry into force, i.e. substances: as from 30 March 2014; mixtures: as from 30 March 2016.

Table 2. International conventions, multilateral agreements and chemical management programmes signed, ratified and acceded to by Viet Nam

Multilateral Environmental Agreement	Participation/ Signing Status	Ratification/ Accession (a)	Responsible National Institution
Stockholm Convention on Persistent Organic Pollutants	23.05.2001	22.07.2002	MONRE
Basel Convention on the Trans-boundary Movement of Hazardous Waste and their Disposal		13.03.1995 (a)	MONRE
Rotterdam Convention on Prior Informed Consent for Certain Chemicals and Pesticides in International Trade		07.05.2007 (a)	MOIT/VINACHEMIA (for industrial chemicals) MARD (for pesticide)
Minamata Convention on Mercury	11.10.2013		MOIT
Global Harmonized System of Classification and Labeling of Chemicals		13/02/2013	MOIT
Vienna Convention		26.01.1994 (a)	MONRE
Montreal Protocol		26.01.1994 (a)	MONRE
– London Amendment to the Montreal Protocol		26.01.1994 (a)	MONRE
– Copenhagen Amendment to the Montreal Protocol		26.01.1994 (a)	MONRE
– Montreal Amendment to the Montreal Protocol		03.12.2004	MONRE
– Beijing Amendment to the Montreal Protocol		03.12.2004	MONRE
Development of a National Profile on chemicals management, (SAICM implementation)	In process		MOIT/VINACHEMIA
UN Framework Convention on Climate Change			
– Kyoto Protocol	3.12.1998	25.09.2002	MONRE
UN Convention to Combat Diversification			
Convention on Biological Diversity	28.05.1993	16.11.1994	MONRE
– Cartagena Protocol on Bio-safety			MONRE
Convention on Chemical Weapon		1998	MOIT/VINACHEMIA

e. GEF projects launched in the framework of the SC convention

In the table 3 below, a list of the main GEF projects related to POPs project already completed or under implementation in Viet Nam is reported. For POPs contaminated sites, are of particular relevance the project on POPs pesticide stockpiles (GEF 3105) and the project on Dioxin contaminated hotspots (GEF 3032).

The two projects share some common objectives and revealed similar challenges:

- Under the POPs pesticide stockpile project, an inventory of sites contaminated by pesticides has been carried out, revealing 1153 sites (most of them of limited extension) possibly contaminated, which however should be reassessed on the basis of the recent decree 43/2013/TT-BTNMT prescribing national cleanup standards for lands contaminated by pesticides; monitoring data which for most of the sites are not available; the Dioxin hotspot project revealed that, very likely, more PCDD/F sites in addition to the 3 large hotspots exist which need to be better identified. There is still the need to make an inventory of industrial POPs contaminated sites and of PCBs contaminated sites, for which regulatory cleanup target level are missing.
- The two projects both faced issues in the identification, selection, evaluation and permitting of disposal and cleanup technologies, revealing that an official guidance on selection of disposal and cleanup technologies, and how such technologies should be licensed (in compliance with the Stockholm Convention BAT/BEP and national regulation) is missing.
- The two projects, supported by bilateral donors and national resources, revealed very clearly that in the absence of a coordinated effort and common criteria (risk-based approach, analytical methods, technology selection criteria) the sustainability of any site remediation strategy cannot be ensured.

On the side of monitoring, the UNIDO project on BAT/BEP (GEF 3011), as well as the GEF global healthcare waste project (GEF 1802) demonstrated the need for further enhancing monitoring capability of U-POPs releases, and highlighted the still limited capability of analytical capacity. The UNEP global monitoring project, recently approved, (GEF 4894) is working at regional level to implement POPs monitoring plans in Asian countries (Lao PDR, Viet Nam, Cambodia, Mongolia, Indonesia, Philippines, Viet Nam) with special reference to new POPs.

Only limited activities related to demonstration of non-mercury devices has been carried out under the GEF global healthcare waste project.

All these projects call for a coordinate effort in solving some key issues, which will be addressed by the proposed project:

- 1) Further improvement of the regulatory framework, with specific reference to regulation on new POPs and ensuring consistence of regulations addressed to different stakeholders;
- 2) monitoring and reporting of POPs (including new POPs and U-POP) need to be enhanced and a coordinated network of laboratories sharing common sampling and analytical methodologies need to be established;
- 3) a common risk-based criteria for establishing screening and cleanup standards for contaminated sites need to be developed and officially adopted ; screening and cleanup standards need to be established for all the POPs and for the key PTS substances; a sound technical financial planning at provincial / regional level is still missing for ensuring the cleanup within a reasonable time of the large number of contaminated sites in Viet Nam;
- 4) BAT/BEP as well as cost-effectiveness criteria for technology evaluation and licensing should be established for POPs disposal and cleanup technologies.

f. Viet Nam and SAICM

Since 2012 Viet Nam is implementing the “Viet Nam / UNDP / UNEP Partnership Initiative for the Integration of Sound Management of Chemicals into Development Planning and Processes

The project is implemented by Viet Nam Chemicals Agency (Vinachemia) under Ministry of Industry and Trade (MOIT) over the period of two years, 2012 – 2013. Objective of the project is to strengthen institutional capacity to integrate the SMC into national development planning and decision making processes and to begin implementation of generic next steps for strengthening the domestic SMC regime that is consistent with SAICM.

Table 3 GEF project launched or implemented in Viet Nam

GEF #	Project title	Agency	GEF grant (USD)	Cofinancing amount (USD)	Project status
3011	Introduction of BAT and BEP methodology to demonstrate reduction or elimination of unintentionally produced POPs releases from the industry in Viet Nam	UNIDO	750,000	1,590,000	Project Completion
2974	PCB Management Project	IBRD	7,000,000	10,500,000	Under Implementation
3105	Building Capacity to Eliminate POPs Pesticides Stockpiles	UNDP	4,300,800	6,540,110	Under Implementation
3032	Environmental Remediation of Dioxin Contaminated Hotspots in Viet Nam	UNDP	4,977,270	25,350,000	Under implementation
1802	Demonstrating and Promoting Best Techniques and Practices for Reducing Health-care Waste to Avoid Environmental Releases of Dioxins and Mercury	UNDP	10,326,500	13,544,400	Completed in late 2013
4894	Implementation of the POPs Monitoring Plan in the Asian Region	UNEP	3,936,000	11,870,000	Council Approved
4838	Updating Viet Nam National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants	UNDP	225,000	160,000	Under Implementation

Baseline analysis

a. Environmental legislation and its links with legislation on management of chemicals.

Law on Environmental Protection (2014) (LEP). The LEP has been recently reviewed and the updated law will become effective in January 1st, 2015. Although the LEP indicates that pollution prevention is one of the key principles for environmental protection, pollution control and/or treatments, i.e. “end of pipe treatment measures” are still dominating in this law. In addition, other important requirements such as application of risk assessment and management, best available techniques (BAT) and Best environmental practices (BEP) are still missing or not fully developed under the law.

The LEP specifies requirement of environmental protection for many sectors and includes requirements on management of GHGs and ODS. However, other international conventions including the Stockholm Convention are not specified directly under the law.

The following secondary linked to LEP (decrees, circulars, technical regulations, standards) establish rules which are relevant to the Stockholm Convention:

- QCVN 56: 2013/BTNMT – national technical regulation on waste oil recycling with allowable limit set for total PCB and various types of PCB.
- QCVN 54:2013/BTNMT - remediation targets value for POP pesticide in soils
- QCVN 45:2013/BTNM - allowable limits set for dioxin in the soil of various type of lands
- QCVN 44:2012/TNMT- off-shore water quality with allowable limits set for POP pesticide and PCB;
- QCVN 51: 2013/BTNMT - air emission from steel industry with allowable limits set for total dioxin/furan;
- QCVN 50:2013/BTNMT on hazardous thresholds for sludge from Water Treatment Process with allowable limits set for lindan, endrin, heptachlor;
- QCVN 43:2012/BTNMT on sediment quality with allowable limits set for DDT, dieldrin, endrin, heptachlor epoxide, lindan, total PCB, dioxin and furan;
- QCVN 30:2012/BTNMT on industrial waste incinerator with allowable limits set for total dioxin/furan (PCDD/PCDF);
- QCVN 02:2012/BTNMT on solid Healthcare waste incinerator with allowable limits set for total dioxin/furan (PCDD/PCDF);
- QCVN 40/2011/BTNMT on industrial wastewater with allowable limits set for pesticide containing organic chlor (cl) and total PCB;
- QCVN 41:2011/BTNMT on co-processing of hazardous waste in cement kiln with allowable limits set for total dioxin/furan (PCDD/PCDF).

Under LEP are also the decrees concerning environmental impact assessment (EIA), strategic environmental assessment (SEA) and environmental protection commitment (EPC). However, although the scope of these decrees is quite comprehensive, their level of enforcement is low.

In practice EIA is considered poorly implemented after the investment license has been granted to the investors. One of reasons for this is that “economic benefits” are more important than “environmental protection” from the investor side while lack of monitoring of EIA implementation from the government side and low sanction when violation happened. Poor implementation of environmental management plan (EMP) has led to serious environmental consequences, among which the contamination at industrial sites, listed in section “e” below, is an example.

In Item 3 of article 75 of the new LEP, import of old marine ships to Viet Nam for recycling is now allowed. There is therefore the need to ensure the proper management of waste generated from the ship recycling activity to avoid any harm to the environment or the human health.

Law on Plant Protection and Quarantine (LPP&Q). It establishes general requirements such as state management on plant protection and quarantine, communication for safety in use of pesticide, institutional system for plant protection and quarantine, inspection, etc.

Chapter IV of the LPP&Q specifies requirements for pesticide management along all steps of its life cycle, i.e. registration, testing, production (conditions for pesticide production, right and obligation of pesticide production facilities) trade (condition for pesticide trade, right and obligation of pesticide trade facilities); pesticide import/export, use of pesticide, transportation, storage, pesticide advertisement; packaging and labelling, revocation, disposal and handling of pesticide, packaging.

Law on Chemicals. The LoC focuses on three groups of chemicals: conditional chemicals, restricted chemicals, and banned chemicals. POPs are not always classified in the right place, as POPs which should be banned are sometime under the restricted list. Requirements for

chemical safety, incident prevention and emergency preparedness and response, granting license, declaration, etc. vary among groups.

Environmental protection requirements with regard to chemical related activities are not specified under the LoC but referred to environmental legislation.

The LoC does not stipulate safety requirements for any specific chemical group such as those of global concerns such as POPs, mercury, persistent toxic substances (PTS), etc. Requirements for risk assessment and management are also missing in the LoC. Requirements for chemicals related international MEAs are not clearly reflected in the LoC either. Most of the POPs which belong to annex A of the Stockholm Convention are listed under annex II (list of chemicals restricted from production and trading) of the decree 26/2011/ND-CP. In some cases that is not the correct places as POPs should be banned and not restricted.

The newly added chemicals in the POP convention's annexes (09 POPs in 2010, 01 in 2011; and 01 in 2013) are not yet updated in the law on chemical (LoC) and its related secondary legislation.

Based on the above, although a significant number of regulations/legal documents have been adopted in recent years to ensure environmental protection and chemical safety, especially POPs and mercury related regulations, the legal system for environmental protection and chemical safety appears still fragmented and somehow inconsistent. Legal documents have been developed and enacted mainly for specific sectors and for part or a step of chemical life cycle management, rather than for the entire chemical life cycle.

In addition, the enforcement of legislation related to safe chemical management is extremely low. Nearly 50% of the enterprises, for instance, do not comply with emergency preparedness as required by the law; 41 cases of hydrocarbon spills in the environment occurred since 2009 prove the limited capacity of enterprises in prevention and emergency preparedness and response to chemical incidents.

Key needs to be considered for the improvement of sound chemical management, which will be mainly addressed by project component 1, with specific reference to POPs and PTS are listed below:

- There is the need to coordinate both LOC and LEP with the key environmental protection requirements for chemicals, especially for toxic chemicals and POPs, to ensure mutual effects and synergy between environmental protection and chemical safety; this may be done with the adoption of proper secondary legislation to be jointly drafted by MOIT and MONRE;
- There is a need to adopt consistent risk assessment criteria when drafting chemical legislation, with specific concern to establishment of emission levels, cleanup target concentration, safe concentration in foods and goods, waste management. In addition, capacity building for risk assessment for all sectors involved in chemical and POPs is necessary.
- Environmental quality limits for POPs and PTS in environmental media and emissions should be completed, with the strict coordination and joint effort of ministries involved in their management.
- There is an evident need for establishing capacity and procedures for chemical accident prevention, emergency preparedness and response to chemical accidents need to be integrated and enforced in the relevant legislation, including the licensing of new plants or the renewal of license of existing plants, including waste disposal facilities.

- According to MOIT, technical support for the development of a legal requirement (possibly a circular) for safety distance of hazardous facilities from populated areas or other facilities is needed
- Strengthening monitoring capacity of POPs in industrial emissions, environment, goods is key for the sound enforcement of the legislation.
- The establishment of a reliable management information system (MIS) of industrial emissions source, industrial processes, and storage of chemicals, with the purpose to facilitate enforcement of the relevant legislation, implementation of BAT/BEP and reporting, planning of monitoring activities following a PRTR model, is absolutely needed and is considered a key step toward the reduction of POP / PTS releases.
- There is the need to establish a BAT/BEP regulatory framework for industries, starting from the largest industrial facilities (including waste disposal plants) and progressively covering medium enterprises;
- Clear rules for the identification and management of contaminated sites are needed, including land use restrictions for contaminated sites, standardized site assessment methods, risk based cleanup criteria.
- Requirements for “new” POPs must be included in all the legislation secondary to LEP and LOC in a consistent way.
- The LOC focuses on three groups of chemicals: conditional chemicals, restricted chemicals, and banned chemicals. POPs are not always classified in the right place, as POPs which should be banned are sometime under the restricted list. Requirements for chemical safety, incident prevention and emergency preparedness and response, granting license, declaration, etc. vary among groups.

b. POP Monitoring capability in Viet Nam

Currently, whilst the monitoring of pesticidal POPs in soil, PCDD/F in soil, sediment and stack gases, and PCBs in dielectric oil is – at least at central level – quite well established, there is the need to develop the capacity of monitoring of new POPs, with specific reference to POPs brominated flame retardants and PFOS. To establish accredited laboratories for carrying out this type of analysis in the environment, industrial releases, and waste stream is urgent given the industrial development of the country and the increasing waste stream generated by industrial activities.

There have been several POPs monitoring programs or activities carried out in Viet Nam as cooperative research projects between Viet Nam and international research institutes in the last 15 years. These include

- The Viet Nam – Japan cooperation on the analysis of POPs pesticide residues in birds, fish, mussels (1997-1999);
- Analytical activities of the organochlorine pesticide residues in water and sediment in some areas such in Viet Nam implemented by the Center for Chemical Technology and Sustainable Development (Hanoi National University, Viet Nam) within the framework of environmental monitoring of hydrosphere in West Asia supported by United Nations University (1998);
- Research on DDT and PCBs residues in sediment and water of some canals in Hanoi and some Northern coastal areas (1994-1999), supported by Monaco, Portugal and organized by the International Atomic Energy Agency.

- A ministerial research project on "Investigating the POPs pollution situation in the Hanoi area" (Ministry of Science and Technology), carried out by the Analytical Laboratory of the Quality Assurance and Testing Center 1, Directorate for Standards and Quality.
- Some research projects on POPs residues in soil and plants and pesticide residues, implemented by the Institute of Plant Protection, MARD.
- A national research project (KHCN.07.15) on identification of toxic pollutants released from industrial and urban activities and development of appropriate treatment technologies, implemented by the Viet Nam-Russia Tropical Center.
- A project assessing Dioxin stockpiles in military airport areas which were used as chemicals storage areas in the war in Viet Nam, implemented by the Viet Nam-Russia Tropical Center.
- An analysis task under Program 33, implemented by the Viet Nam-Russia Tropical Center, in cooperation with other agencies such as VEPA, the Institute of Biological Technology, the Center for Environmental Treatment Technology - Chemical Military Headquarters, etc.
- Some cooperative projects with the United States, Canada, the Netherlands and others on the movement and adverse impacts of Dioxins derived from toxic chemicals used by the American Army during the war in Viet Nam.
- In Viet Nam, the existence of monitoring of POPs environmental concentration data pertains mostly to the activities carried out in the framework of remediation of dioxin contaminated sites, coordinated by Office 33, and carried out with the technical and financial support of international donors (USAID; the Bill and Melinda Gates Foundation, the Czech Government, the GEF with the UNDP/GEF project *"Environmental Remediation of Dioxin Contaminated Hotspots in Viet Nam"* and of POPs pesticide contaminated sites (including the monitoring and site characterization activities carried out under the UNDP/GEF project *"Building capacity to eliminate POPs pesticides stockpiles in Viet Nam"*).
- Sampling and analysis of PCB in dielectric oil is being carried out countrywide under the GEF/WB project "Management of PCBs in Viet Nam". For PCB, as a national official method is missing, the labs usually adopt the international methods of their choice. None of the Vietnamese laboratories have the technical capability to carry out analysis of new POPs such as hexabromobiphenyl, hexabromodiphenyl ether and heptabromodiphenyl ether, pentachlorobenzene, perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride, tetrabromodiphenyl ether and pentabromodiphenyl ether.

Throughout the country, 3 labs perform dioxin and analysis of contaminated soil on a regular basis, the VEA dioxin laboratory (supported by Bill & Melinda Gates Fund), the Viet Nam – Russia Tropical Center Lab, and Center for experiment and analysis belonging to Ho Chi Minh DoST. There are, however, a number of laboratories which can perform PCDD/F analysis but not all of them lab is equipped with HR GC/MS.

There are a certain numbers of laboratory and universities with POPs analytical capability. Laboratory for the analysis of PCBs with GC/MS, GC/ECD and speditive analysis with chlorine-specific electrode are available both in Hanoi and Ho Chi Minh city.

Although in general, each provincial DoNRE has its own environmental monitoring program, only a minor part is assigned to pesticide monitoring and analysis, due to high analytical costs,

lacking of analytical equipment and skilled staff. There are 4 official analytical standards of which 2 can be applied for chlorinated and phosphorous pesticides.

Based on the outcome of the NIP report, the POPs monitoring effort in Viet Nam are not adequately sustained by proper regulations and availability of financial resources. Priority programs 7 and 9 of the NIP seek to rectify this situation through the strengthening of existing capacity and the systematization of processes for monitoring POPs.

To partially overcome this limitation, Viet Nam is currently one of the participant countries in the regional GEF / UNEP project “Implementation of the POPs monitoring plan in the Asian region. By means of this project, the existing POPs laboratories in the participating countries (Cambodia, Indonesia, Lao PDR, Mongolia, Philippines, Viet Nam) will identify their capacity to contribute to the monitoring program for all the 22 POPs; will receive training; a network of sampling stations for the monitoring of air, water, and human samples with respective protocol will be established; POPs laboratories will be tested for their capacity in intercalibration studies; and a regional report on analytical capacities will be prepared. The UNEP project will also develop detailed guidelines, protocols and manuals as well as training of staff in participating laboratories and strengthening the performance of sampling and analysis will enable the national laboratories to improve their ability to analyse POPs according to international standards. One national Vietnamese laboratory will participate in the exercise.

In Viet Nam, several laboratories are certified following ISO 17025. Only in few cases, however, the certification includes analysis of POPs (only POPs pesticides in soil and water). The list of laboratories with potential capability on POPs analysis is reported in Table 4 below. The ISO 17025 is a general certification scheme which certifies both the management capability and the calibration of the specific analytical methods and equipment. The availability of accredited laboratories is a good starting point for the introduction and accreditation under the same scheme of new analytical methods like the ones required for the analysis of PBDEs and PFOS. The existence of laboratory which are already acquainted with ISO 17025 therefore ensures the sustainability of the introduction of accreditation for new POPs.

Table 4: List of laboratories with potential capability on POPs analysis (Source: MONRE, 2014)

No	Lab/Institution	Owner	Main functions	Instrumentation	Certificate	PCB	Pest.	Dioxin/ furan	Other POPs
1	Environmental Lab. - Institute of Environment & Resources – Ho Chi Minh University of Technology	State	National monitoring network	GC/ECD-FID, GC/FPD, GC/MS, HPLC		o	o	o	o
2	Environmental department - Ho Chi Minh University of Technology	State	Research, training	GC/FID, GC/MS, HPLC	ISO 17025	X	o	x	x
3	Hoan Vu Company	Private	Services	GC/FID, GC/MS, HPLC, HPLC/MS	ISO 17025	o	o	x	o
4	Research Institute of Biology & Environment - Ho Chi Minh City University of Agriculture and Sylviculture	State	Research, training, services	GC/FID, GC/ECD, GC/MS	ISO 17025	o	o	o	o
5	Hai Dang Company	Private	Training, services	GC/FID-ECD, GC/MS, HPLC, HPLC/MS		o	o	x	o
6	Center Analytical Services on Environment	State	Services	GC/FID-DFPD-ECD, GC/MS, GC/HR-MS		o	o	o	o
7	Center of Environmental Technology – Ho Chi Minh Branch – Institute of Environmental Technology	State	Research, training, services	GC/FID-ECD, GC/MS, HPLC	ISO 17025	o	o	x	o

No	Lab/Institution	Owner	Main functions	Instrumentation	Certificate	PCB	Pest.	Dioxin/ furan	Other POPs
8	Center of Environment and natural Resources - Can Tho University	State	Research, training, services	GC/FID, GC/MS		x	x	x	x
9	Advance Lab. - Can Tho University	State	Research, training, services	GC/FID, GC/FPD-ECD, GC/FID-ECD, GC/MS, HPLC, HPLC/MS,		x	o	x	o
10	QUATEST 3	State	Services	GC/FID-ECD, GC/MS, HPLC, HPLC/MS-MS	ISO 17025	o	o	x	o
11	QUATEST 2	State	Research, training, services	GC/MS-ECD-FID, GC/FPD-ECD	ISO 17025	o	o	x	o
12	KTTV TTB	State	Research, training, services	GC/FID-ECD-NPD	ISO 17025	o	o	x	o
13	Company Limited for Research and Application of Technology on Environment	Private	Research, training, services	GC/ECD/MS	ISO 17025	o	o	o	o
14	Center of Environmental Technology – Da Nang Branch – Institute of Environmental Technology	State	Research, training, services	GC/ECD, GC/MS		x	o	x	o
15	Chemical Faculty – Hue University	State	Research, training, services	GC/FID, GC/MS-ECD		x	x	x	x
16	Center for testing of drug & food – Hue Province	State	Services	GC/FID, GC/MS, HPLC, HPLC/MS	ISO 17025	x	o	x	o
17	National Refinery Lab.	State	Research, training	GC/FID-ECD, GC/MS	ISO 17025	x	x	x	x
18	Center for pesticides analysis	State	Services	GC/ECD/FPD, GC/MS	ISO 17025	x	o	x	o
19	Lab. for agricultural analysis – Institute for Agricultural Environment	State	Research, monitoring network, training, services	GC/ECD, GC/MS, HPLC		x	o	x	o
20	Lab. for toxicity analysis - Institute of Environmental Technology	State	Research, monitoring network, training, services	GC/FID-NPD-FPD-ECD, GC/MS, GC/MS-MS	ISO 17025	o	o	o	x
21	Hanoi Center of Environmental Monitoring	State	Monitoring network, training, services	GC-ECD, GC/MS, HPLC		o	o	x	o
22	Center of Environmental Monitoring (VEA)	State	National monitoring network, training, services	GC/ECD, GC/FPD, GC/MS, GC/HR-MS, HPLC, HPLC/MS	Inter calibration comparison	x	o	x	x
23	Department of Chemistry – Hanoi University	State	Research, training, services	GC/FID-ECD, GC/MS-MS, HPLC, HPLC-MS	ISO 17025	o	o	o	o
24	CETASD	State	Research, training, services	GC/FID-FTD, GC/ECD, GC/MS, GCxGC/TOF-MS, HPLC		o	o	x	o
25	QUATEST 1	State	National monitoring network, training, services	GC-ECD, GC/MS, HPLC	ISO 17025	o	o	x	o
26	Food safety department- Institute of Nutrient	State	Research, training, services	GC/MS	ISO 17025	o	o	x	x
27	National Institute of Food Control	State	Research, training, services	GC/FID-ECD-NPD, GC/MS, GC/MS-MS, HPLC	ISO 17025	o	x	x	o
28	ECD	State	Research, training, services	GC-FID, GC-ECD	ISO 17025	x	o	x	o
29	Toxicity screening Lab – 108 hospital	State	Research, training, services	GC/FID-ECD, GC/MS, HPLC		o	o	x	o
30	VietRus Center (VRTC)	State	Research, training, services	GC/ECD, GC/MS, HPLC	ISO 17025	o	o	o	o

No	Lab/Institution	Owner	Main functions	Instrumentation	Certificate	PCB	Pest.	Dioxin/ furan	Other POPs
31	Center for environmental treatment – Chemical Command	State	Research, services	GC/FID-ECD, GC/MS, HPLC	ISO 17025	x	o	o	o
32	Plant Protection Research Institute	State	National monitoring network, training, services	GC-ECD-FPD, GC/MS		x	o	x	o
33	Environmental Lab. – Viet Nam Institute of Meteorology, Hydrology and Environment	State	National monitoring network, training, services	GC/FID-ECD, GC/MS, HPLC	EANET	x	x	x	x
34	Center for Environment and Cleaner production	State	Research, services	GC/ECD, HPLC	ISO 17025	o	o	x	x
35	Institute of Environmental technology (INEST), University of Engineering and Technology	State	Research, training	GC/FID-ECD, GC/MS, HPLC		x	o	x	o
36	Station of monitoring of labour environment - National Institute of Labour Protection	State	Research, services	GC/MS, GC/FID-NPD-ECD-TCD		x	o	x	o
37	Lab. for environmental monitoring – Institute of Ocean	State	Research, services, national network	GC/FID, GC/ECD	ISO 17025	o	o	x	o
38	Dioxin Lab - VEA	State	Research, services, national network	GC/FID-ECD, GC/MSToF, LC/MS/MS	ISO 17025	o	o	x	o

* ISO 17025 certification concerns in only few cases analytical methodologies for POPs pesticides in water and soil, whilst in all the cases it concerns the basic analytical procedures and is not related to POPs.

c. Contaminated sites

Current inventory of contaminated sites.

In Viet Nam, there are a large number of areas contaminated by harmful chemicals, including organic pesticides, POPs pesticides, PCBs and substances which were used in the Viet Nam war by the US Army. Based on recent investigations, 1153 pesticide contaminated sites in 39 provinces/cities including 864 contaminated soil sites and 289 storage site have been identified and their data entered in the inventory database. Further, 383 contaminated sites, not yet included in the inventory of contaminated sites, have been identified in 2013. The three large dioxin contaminated sites identified (Bien Hoa, Da Nang and Phu Cat airports), are currently the object of several monitoring and cleanup activities funded by the Vietnamese Government, USA NGOs, the GEF and other donors. In addition to these 3 hotspots, a number of other Dioxin contaminated areas are known but not officially confirmed yet, as investigation and monitoring is still being conducted.

The decision 1946 /QĐ-TTg, “Approving the Plan to treat and prevent environmental pollution caused by pesticides stockpiles all over the nation”. Issued in December 2010 by the Government of Viet Nam, this is currently under revision with the purpose to extend the plan until 2025, make the plan more realistic and sustainable.

The annex to the decision 1946 /QĐ-TTg, contains a list of 335 sites contaminated by POPs pesticides for cleaning up in the period 2011- 2020. A summary of these sites by province and year of planned clean-up is reported in Table 6 and 7.

Table 5 . Numbers of extremely serious POP- pesticides contaminated sites, which need to be remediated within 2015 by province (source: MONRE inventory of sites contaminated by pesticides)

Name of provinces	Quantity of cont-sites	Name of provinces	Quantity of cont-sites
Hagiang	1	Haiduong	1
Tuyenquang	3	Namdinh	2

Yenbai	2	Quangninh	3
Thainguyen	5	Thanhhoa	7
Bacgiang	2	Nghean	189
Bacninh	1	Hatinh	7
Langson	2	Quangbinh	7
		Quangtri	7

Table 6. Numbers of serious POP- pesticides contaminated sites, that need to be remediated within 2020 by province (Source: MONRE inventory of sites contaminated by pesticides)

Name of provinces	Quantity of cont-sites	Name of provinces	Quantity of cont-sites
Laichau	1	Thanhhoa	3
Dienbien	1	Nghean	78
Namdinh	1	Hatinh	3
Thainguyen	2	Quangbinh	4
		Danang	1

267 of these sites are from the Nghe An province only. In addition, in this province, there are further 10 sites to be verified for inclusion in the annex. The full list of contaminated sites in the Nghe An province is attached in Annex I. For the 267 sites which have been confirmed, the cleanup should have already been started in 6 sites; in 181 sites the cleanup is planned to be started within 2015, and in 80 sites by 2020. For 225 sites out of the 267 sites, the list contains information related to the concentration with respect to the National Standard either as a single substance or for all the pesticides.

For 41 sites, the database contains the concentration in soil for single substances. In 38 cases, the National Standards are exceeded by POPs substances (mainly DDT, in few cases Lindane and other substances).

In all the remaining cases, the standards are exceeded by pesticides in general, without information as to which specific substances exceeds the limit. In 143 cases, the concentration of the substances exceeds by 5 times the limit; in 105 cases the concentration is exceeded by 20 times; in 91 cases the concentration of the substances exceed by 100 times the concentration limit.

Of the 91 sites for which the concentration of pesticides exceed by 100 times of the concentration limit/ threshold, the land use surrounding 52 sites is residential area, for 7 sites is agricultural crop, for 9 sites is commercial / degraded or arid, and for 23 sites the land use is not declared.

Out of all the sites for which the pollution is confirmed, 97 results polluted by DDT or by other POPs. Of these 97 sites, 60 sites are a residential land (including some very sensitive area like kindergarten gardens or schools), 2 sites are agricultural land, 12 sites are either abandoned or industrial, and for the remaining the land use is not declared.

The 10 sites yet to be confirmed are reportedly all polluted by POPs;

On the basis of the above, it is quite evident that the pollution by POPs pesticide largely affects sensitive residential areas. There is, therefore, an urgent need to carry out a management plan

at the provincial level so that safety measures to prevent people exposure and cleanup activities can be prioritized and started in the shortest time as possible.

Lacking of information on industrial contaminated sites.

Although the legacy of sites contaminated during the war, or by the improper use and storage of pesticides is now progressively been addressed, there is still little understanding concerning the emerging situation of industrial contaminated sites, which may be contaminated simultaneously by several contaminants and which, in addition, may pose additional challenges for their cleanup, due to the existence at these sites in industrial areas which have enterprises in operations. There were a number of contaminated sites originated from mismanagement of industrial wastes, of which the following are significant examples:

- (1) Pollution caused by a cluster of industries in Phu Tho Province (Lam Thao Super Phosphate Plant, Phu Tho Battery Plant, Bai Bang Pulp and Paper plant) have been suspected to result in incidence of cancer in nearby Thach Son village or the so called “cancer village” (106 people in the village have been dead since 1991) ;
- (2) Thi Vai River as an illustration for the so called “Dead River” in Viet Nam due to discharging of untreated domestic waste water and waste water from manufacturers in industrial zones located along two sides of the rivers. A critical case of pollution source of Thi Vai River is Taiwan’s Monosodium Glutamate Producer Vedan Viet Nam. The company illegally discharged thousands of cubic meter of untreated toxic wastewater into Thj Vai River for more than decade without noticed by local authority. At critical point, Vedan has to pay VND 267 million fine. The fine if considered against its revenue in the first 6 month of 2007 (US\$182.7 millions) is very low ;
- (3) Another recent critical case is the one of Thanh Thai Nicotex Joint Stock Company who has illegally buried more than 843 tons of expired pesticide in Thanh Hoa province and its waste in the areas within the company premise. Findings from inspection of provincial function agencies show that Thanh Thai Nicotex Company has violated environmental protection legislation, i.e. not fulfillment all requirements of the approved EIA report, monitoring are done only two times/year while required by legislation are four times/year, improper management of hazardous waste, etc. 957 people living around Thanh Thai Nicotex Company have been reported to be contracted to cancer, deformities or eye damage as consequences.

In the Binh Duong province, although an inventory of contaminated sites is not available, there is significant information⁷ leading to the conclusion that sites contaminated by hazardous chemicals and waste represent a priority:

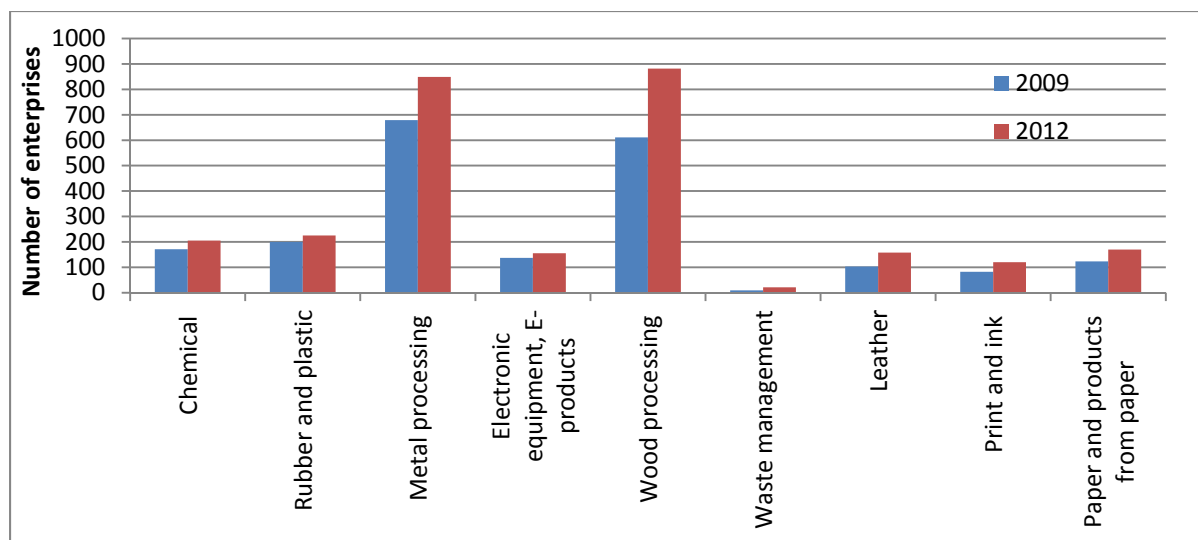
- (1) The number of industrial facilities using chemicals: So far, the province has 8,138 industrial facilities including 1,527 investment projects in industrial zones and outside industrial zones. These industries focus primarily on sectors such as wood; chemicals; rubber and plastic products; paper manufacturing and metal processing; electronic, waste treatment; leather. The development of these industry led to increasing demand for chemicals used for manufacturing, waste disposal, and fire prevention, as well as for handling of hazardous waste in the province.

⁷ Shortcomings in the management of toxic chemicals (POPs / PTS) in Binh Duong Province and proposed solutions- Nguyen Ngoc Chau – Binh Duong Division of Environment Protection (Hanoi, July 1st 2014, report delivered for the Project consultation workshop)

- (2) Amount of hazardous waste generated by the province: Based on statistics provided by DONRE, the amount of industrial waste generated daily is 10,440 tons, of which 310 tons/day are of hazardous waste. Waste is currently processed by 25 units having the registration of hazardous waste management. They include 12 enterprises registered on the basis of the province and 13 units based in the neighboring provinces such as Dong Nai, Ba Ria Vung Tau, Ho Chi Minh City, Moreover; there are more than 200 units of scrap collectors involving in the collection of non-hazardous industrial waste.
- (3) Evidences of improper waste management: it is reported that a certain number of collectors sometimes collect or dispose in an improper way non-recyclable- industrial waste and hazardous waste. Dumping sites of hazardous waste are quite common in the province.
- (4) Beside landfill, the most common disposal process is incineration in quite basic static ovens with a total nominal capacity of 8.98 tons / hour. If operated for 16hr/day, these incinerators would be able to dispose a maximum of 144 tons/day, less than half of the amount of hazardous waste generated in the province. In addition, considering that the incinerators need to be upgraded to meet the requirements of regulations 30:2012 / MONRE, it is likely that the PCDD/F amount emitted by these incinerators in the air, or contained in the ashes is significant. These incinerators may therefore generate ashes to be still considered as hazardous waste (very likely POPs containing waste due to their content of PCDD/F) at a rate of roughly one- tenth of the amount of waste processed (an estimated amount of 14tons/day, roughly 5000 tons/year).
- (5) Based on the above, is quite evident that contaminated sites in Binh Duong (sites were uncontrolled dumping of hazardous waste occurred) would represent an amount of POPs / PTS containing waste in the order of several thousand tons.

The list of existing industries in Binh Duong – coupled with information with information on waste management– may be used as indication on the risk of contamination. In the table below, a statistic of industries by sector, based on data provided by Binh Duong DONRE, is provided:

Industrial sector	Number of industries in 2009	Number of industries in 2012
Chemical	171	205
Rubber and plastic	200	225
Metal processing	679	849
Electronic equipment, E-products	137	155
Wood processing	611	882
Waste collection, treatment and recycling	9	21
Leather and related products	103	158
Print and ink	82	120
Paper and products from paper	123	170



Among industries which may generate POPs containing waste, or use POPs in their processes, there are 205 chemical industries, 225 plastic manufacturing industries, 170 industries related to paper production, and 155 electronic industries.

Continuously update inventory of the existing contaminated sites under decision 1946 /QĐ-TTg.

Information on polluted sites is continuously changing based on the new evidences collected at local level. A recent report provided by the Nghe An DONRE⁸ states that an estimated 913 contaminated sites may exist in the province. Out of which, the 267 sites listed in the **1946 /QĐ-TTg** have been confirmed as heavily contaminated and need to be remediated by 2020 listed under the decision 1946 /QĐ-TTg.

In many cases, the information reported in the inventory of contaminated sites is very basic and is not enough for sound planning purposes. Therefore the first urgent action is to perform a systematic upgrading of the information concerning POP contaminated sites to understand the resource needed for site cleanup and waste management, and to start undertaking urgent measures on a priority basis, and to make sound environmental planning and allocation of resources for long term countermeasures.

In addition, the plan is currently lacking technical and economic norms for selection of remediation techniques in the bidding processes, and is not yet based on risk assessment / risk priority criteria. The plan is also currently lacking clear rules for establishing land use restrictions, especially in the cases where cleanup has to be delayed (e.g. for technical or administrative reasons), or where cleanup is not technically feasible. This is important to avoid human exposure pending remediation of contaminated sites. The technical responsibilities for implementation of the remediation plan are scattered among ministries, with MONRE in charge of overall control and supervision.

⁸ Discussion on difficulties in addressing pollution caused by POPs, PTS and proposed solutions in Nghe An province. Nghe An Department of Natural Resources and Environment - Environment Protection Agency. (Hanoi, July 1st 2014, report delivered for the Project consultation workshop)

d. The situation of Mercury in Viet Nam

Source of mercury emission in Viet Nam:

Overall coal consumption in Viet Nam and content of mercury in Coal.

Emission of coal from the electric power generation. Based on IEA data⁹, in 2010 Viet Nam produced 94,903 GWh of electricity, out of which 19,687 GWh were produced using coal and peat. IEA also reports that Viet Nam consumed around 7.95 million metric tons of coal for electric power generation. The concentration of mercury in different coals in Viet Nam ranges from 0.06 to 0.18 mg/kg (MONRE, 2009). This is consistent with figures for coal in other countries (for instance, USGS¹⁰ reported an average concentration of mercury in coal from 0.04 to 0.24 mg/kg. Based on the above figures, the amount of mercury which can be released in the environment by the electric power sector would range from 0.48 to 1.44 tons per year. This amount is thought to increase due to the availability of coal in the country and the expected increase in electricity demand: According to QĐ 110/2007/QĐ-TTG: electricity demand by 2020 compared to 2005 is expected to increase of 17-20%.

Mercury from the cement industry¹¹: Levels of mercury in limestone in Viet Nam ranges from 0.01 to 0.12mg/kg and in cement products from 0.02 to 0.08mg/kg. Coal is the main fuel used in the cement industry. There are about 30 large and medium-sized cement plants. According QĐ 108/2005/QĐ-TGG, the estimated average cement demand in Viet Nam until 2010 was 68 to 70 million tons. Mercury release of cement industry over the years is estimated to increase from 1.03 tons in 2005 to around 1.66 tons in 2010. 80% of this amount is released into the atmosphere, whilst the remaining part is associated with final products (cement, clinker).

Small and artisanal gold mining (MONRE, 2008): Around 500 gold mines and others mines containing small gold amount have been identified in almost every province in Viet Nam. It has been assessed that of the above, 30 sites contain around 300 tons of gold: Kim Boi, Hoa Binh (10 tons), Thai Nguyen, Cao Bang, Bac Can (Khau Au, Bo Cu and others: 30 tons), The Na Pai, Lang Son (30 tons). Assuming 3kg mercury emission for each kg of gold extracted, the yearly extraction of around 600kg would imply yearly mercury emissions of mercury of 1800kg / year.

Mercury in e-waste. E-waste is the main source of mercury contamination in municipal waste. Based on UN estimations¹², the amount of e-waste is expected to increase yearly of 33% until 2017. It is estimated that 400 tons of end of life mobile phones, containing toxic metals such as lead (Pb) and mercury (Hg)^[14], are discharged yearly in Viet Nam. Mercury release in the environment is also caused by the improper disposal of fluorescent bulbs, compact fluorescent light bulbs (LFLs) and others mercury-containing bulbs. Each compact fluorescent light bulb contains from 2 to 5 mg of mercury. Every year, in Viet Nam millions of fluorescent lamps are discharged: based on available statistics., every year electric companies such as Dong Da, Orion, Sumitomo Bakelite, Giang Vo, Canon Viet Nam, Hanel, discharge around than 7260 tons of waste, of which 4.8 tonnes of fluorescent body, 6 tons of lead compounds, 18.1 tons of damaged printed circuit board, 23, 8 tons of parts, 1331.8 tons of other metals. Orion Hanel produces yearly by itself 4300 tons of waste.

Healthcare waste. In the framework of the GEF/UNDP “Global Healthcare Waste Management Project”, a survey on the use of mercury containing devices was conducted (separately with the

⁹ <http://www.iea.org/>

¹⁰ <http://pubs.usgs.gov/fs/fs095-01/fs095-01.html>

¹¹ MONRE-VEA- Department of Pollution control: Report on the Monitoring on Mercury sources in Viet Nam, 2009.

¹² Current mercury management in Viet Nam: Vinachemia Workshop on the activities for preparing to signing Minamata convention, 14/3/2013: www.vinachemia.gov.vn

baseline survey). A guideline on safe handling and disposal of phased-out mercury devices was developed and approved. Non mercury equipment was delivered to pilot hospital for the complete replacement of mercury thermometers and sphygmomanometers.

Other sectors. Although it is known that mercury is used in or released by several other industrial (chloralkali plants, automotive industry, brick factories, or civil activities, like medical devices (thermometers and sphygmomanometers) the information on amount of mercury used and wasted are lacking.

Monitoring data on mercury in Viet Nam

Studies on the environmental monitoring of Mercury in Viet Nam are quite limited. The report of the Pollution Control Department, VEA, General Department of Environment confirmed that mercury can be released from the operation of cement industries, thermal power plant, mining and processing of gold tailings and solid waste recycling. The survey results indicated the presence of mercury in raw materials, fuel , emissions and solid waste. Due to technical limitations on the sampling and analytical side, the study results are considered only indicative and useful for designing further monitoring campaigns. The study also revealed that the waste water released from gold mining activities has a mercury concentration of around 0.0345 mg/L, 3 times higher than the TCVN allowed standards.

Specific legislation on Mercury in Viet Nam

There is no specific regulation on mercury in Viet Nam. Mercury containing waste is considered hazardous waste. However, no specific provision for the disposal of mercury waste has been established. This adds to the issues related to the management of hazardous waste in general.

There are legislations and guidance documents that, although theoretically beneficial for the environment, are not easily implementable in the absence of specific provisions for the management of Mercury waste.

In this respect, legislation on energy saving¹³, establishes a road-map for the replacement of around 40 million incandescent bulbs and obsolete fluorescent bulb with high efficiency and mercury free fluorescent lamps. However, a sound plan for the management of the obsolete lamps possibly contaminated by mercury is still missing.

Similarly, the initiatives and policies on phasing out mercury containing devices used in healthcare facility needs to be complemented by the development and adoption of environmentally sound management procedures of mercury waste, to avoid that phased out mercury devices are improperly disposed.

Awareness on Mercury issues in Viet Nam

Based on a preliminary questionnaire survey conducted by MONRE involving 53 enterprises revealed that the awareness of general population as well as authority and industrial stakeholders on mercury issues is very limited. In summary, the result showed that:

- All the respondent are aware that mercury is very toxic;
- 15% of the industries reported that their production, raw materials and fuel used may be related to mercury emissions, whilst the remaining 85% are not aware of potential mercury emissions of their activities;

¹³ the Prime Minister Directive dated 02/6/2005 and number 19/2005/CT-TTg and the Decision 80/2006 QD-TTg on saving electricity, as well as the Decision No 03/CT-BCN dated 7/3/2007

- 50% of the industries think that fuel containing mercury cannot be replaced by other fuel due to cost or technological issues;

e) Relevant Initiatives and Project (*Baseline Projects*)

1. Relevant Initiatives/Projects related to strengthening policies and legal framework

LEP has been amended to include two new chapters: soil protection and environmental rehabilitation of contaminated sites.

Studies for a preliminary PRTR circular have been undertaken by VEA. There is the need to carry out further technical assessment, stakeholder consultation and impact assessment of the policy .

Circular on occupational safety in chemical environment is at its initial stages and the information is being reviewed by Department of Occupational Safety (MOLISA)

A Decree and circular guiding implementation of a number articles of the LPP&Q including provision of pesticide management is expected to be issued in 2014 to support the LPP&Q implementation (LPP&Q has been adopted by the end of 2013)

A technical guideline which includes risk assessment of the POP pesticide contaminated sites, as well as criteria for environmental management plan for POP contaminated sites is being introduced in Viet Nam by UNDP/GEF “Building capacity to eliminate POPs pesticides stockpiles in Viet Nam” project.

A draft on National technical regulation concerning acceptable limits/thresholds of PCB in land has been drafted by Department of Pollution control, VEA.

MOIT has planned to revise chemical law since the law and its sub-law documents have been adopted since 2008. Revising the law is needed to update new requirements for chemical management, both national and international.

National action plan for sound chemical management has been developed under “Viet Nam/UNDP/UNEP Partnership initiative for the integration of sound management of chemicals in development planning and processes”. This is to facilitate Viet Nam to follow SAICM approach, i.e. sound management of chemicals, with particular reference to compliance with international standards and system on chemical classification and registration.

2. Relevant Initiatives/Projects related to POPs Monitoring

Ongoing activities on POPs monitoring are mostly the ones being carried out with international support, like:

- GEF funded projects on POPs: UNDP/GEF project “*Environmental Remediation of Dioxin Contaminated Hotspots in Viet Nam*”, UNDP/FAO/GEF “*Building capacity to eliminate POPs pesticides stockpiles in Viet Nam*”, the GEF/WB “*PCB management in Viet Nam*”, the GEF/UNIDO “ “ ,
- Bilateral project like the monitoring of PCDD/F contaminated sites supported by the Bill and Melinda Gates foundation, the Czech Republic.

According to information provided by VEA (Viet Nam Environment Agency), there are 38 laboratories that have enough equipment to carry out analysis of POPs (as presented in

Table 4: List of laboratories with potential capability on POPs analysis), among which, 24 laboratories are certified according to ISO 17025, and 4 are private laboratories. Few laboratories can perform analysis of pesticidal POPs; none of them is currently analyzing new POPs and the capacity to perform sampling of PCDD/F in industrial facilities (e.g. stacks) is still limited to very few labs. There is, therefore, a significant potential for improving the analytical capability of the country by introducing standard methodologies, providing guidance and implementing round-robin test among labs on the determination of POPs. Due to the availability of laboratories and laboratory equipment, limited investment in training, laboratory accreditation and intercalibration on POPs analysis will have a significant catalytic effect.

3. *Relevant Initiatives/Projects related to Contaminated sites Management*

Viet Nam Government is carrying out activities related to the management and treatment contaminated sites already under Decision No.64/2003/QĐ-TTg of April 22, 2003 approving the “Plan for thoroughly handling establishments which cause serious environmental pollution”.

In December 2010, the government of Viet Nam issued the decision 1946 /QĐ-TTg, “Approving the Plan to treat and prevent environmental pollution caused by pesticides stockpiles all over the nation”.

According to the implementation of that decision, 240 very high priority contaminated sites will be treated by 2015, 95 high priority contaminated sites will be treated by 2020 and the remaining contaminated sites will be treated by 2025.

The government is currently allocating funds for the period 2015 – 2025.

In September 2012, the “National Target Program On Pollution Mitigation And Environment Improvement For The Period 2012 – 2015” (NTP PMEI) was signed by the government with the decision 1206/QĐ, allocating 2500 billion Vietnamese Dong from the central government (around 118million USD) for the following activities with timeframe 2012-2015:

- Pollution mitigation and improvement of environment of seriously polluted craft villages;
- Improvement and recovery of environment at sites seriously contaminated by obsolete pesticide/herbicides;
- Collection and treatment of waste water from cities with urban level II and above directly discharging into the catchments of Nhuệ – Đáy river, Cầu river and Đồng Nai river system

On 25/12/2013, the Minister of Natural Resources and Environment signed the circular 43/2013/TT-BTNMT prescribing national clean-up standards for lands contaminated by pesticides, with values differentiated on the basis of land use. The circular is adopted with support from the UNDP/GEF pesticide project This regulation is very new and experiences on its application are not reported yet; in addition, the inventory of POPs pesticide contaminated sites need to be reassessed in light of the new clean-up standards.

Although the amount of resources placed on site and land remediation is substantial, and notwithstanding cleanup targets are available for some POPs, at local level, and mainly in the cases of small pesticide storage sites and industrial facilities, there are still a general lack of capacity concerning site-cleanup technologies, risk based corrective actions, site assessment and monitoring, procedures for the implementation of risk management measures pending the remediation of sites.

In this framework the GEF/UNDP project “*Environmental Remediation of Dioxin Contaminated Hotspots in Viet Nam*” and the GEF/UNDP/FAO project “*Building capacity to eliminate POPs*”

pesticides stockpiles in Viet Nam are paving a first way toward the standardisation of clean-up activities.

The Dioxin project achieved important outcomes both in the field of standard limit setting and technology evaluation as following:

- Under direction of the Office 33 implementing the project on Dioxin hotspots, the standard TCVN 8183:2009 – establishing target concentration for Dioxin in soil and sediments was issued..
- The project, by demonstrating a PCDD/F destruction technology and establishing containment infrastructures in Bien Hoa and a safe landfill in Phu Cat, contributed significantly to the knowledge and the increased technological capacity of the relevant stakeholders for problem analysis and remediation of dioxin contamination.

However, as emerged from the MTE reports of both the projects, there is still the need to adopt in a consistent way technology selection criteria in clean-up projects. The testing and establishing of technologies for the sound treatment of soil contaminated by POPs is an urgent need for the Vietnamese government.

Through the Pops pesticides stockpiles project, an inventory of the sites contaminated with POPs pesticide has been established, which will be maintained and updated even after project completion. Under the project, methodologies for preliminary site assessment, and site Environmental Management Plan following risk assessment approach have been developed and tested in a limited number of contaminated sites, where contaminated soil is also being excavated and treated, mostly by means of thermal technologies (cement kilns).

Both the projects are being concluded within the year 2014. The translation into legal instruments of the methodologies developed and tested, with special reference to environmental management plan of contaminated sites, is envisaged before the end of the projects as an additional task initially not included by these projects.

Being the sites contaminated by PCDD/F or pesticides the main priorities in Viet Nam, procedures and knowledge to deal with other category of contaminated sites, like for instance industrial sites or PCB storage area are currently missing. Likewise, an inventory of industrial contaminated sites is still missing.

Although the GEF projects are demonstrating sound approach for site clean-up and environmental management in selected sites, the very high number of sites identified calls for a different approach to substantially reduce the release of POPs in the environment and the exposure of people to these contaminants. Indeed, the GEF projects are currently addressing a dozen of sites (including 2 dioxin sites and 10 POPs sites), bilateral activities are taking care of the Danang sites contaminated by Dioxin, and the government is currently remediating 40 sites. It must be noted that more than 1500 POPs pesticide sites have been identified so far and the issue of industrial and PCB contaminated sites has been not touched yet.

At most of these sites, lack of awareness of the population living in their proximity, lack of clear procedures for risk management, are the causes of the continuing exposure of people to pollutants, including POPs.

Although exposure prevention and reduction are among the objectives of the decision 1946 QĐ-TTg, no measures are being adopted for preventing the dispersion in the environment of POPs and other chemical from sites where remediation is delayed to the second stage of target plan implementation (2015-2025) or which is considered not technically feasible.

There is, therefore, the need for an approach based on high level planning at provincial level on one side and on a greater involvement of local communities on the other side. A provincial site management plan is needed to identify and adopt the most urgent risk reduction measures, including safe storage, adoption of behavioural precautions and raising awareness in the local population to ensure that exposure to toxic pollutant is minimized. The widespread nature of the pollution call for a more de-localized and participatory approach which has to be catalyzed possibly by market based mechanisms or incentive schemes which may actually make local authorities and local people willing to actively cooperate, instead of waiting actions from the central government.

4. Relevant Initiatives/Projects related to ongoing activities on Mercury

Viet Nam has been one of the first signatory of the Minamata treaty on Mercury. MOIT signed the Minamata convention on 11/10/2013.

Although not yet in force, the Minamata convention establishes a number of obligations for parties:

- Establish a sound Mercury inventory, including the main sources of Mercury;
- Establish a management plan for the reduction of Mercury emissions, for existing and new sources;
- Establish limit control values for mercury emissions, and identify and implement measures and strategies (including BAT/BEP) for the reduction of mercury release;
- Draft and implement a National Action Plan on artisanal and small-scale gold mining
- Conduct training covering all the relevant aspects of Mercury management.
- Cooperate in developing strategies and implementing activities for identifying, assessing, prioritizing, managing and, as appropriate, remediating contaminated sites.

The Vietnamese Agency for Chemicals (VINACHEMIA) established under Ministry of Industry and Trade is the focal point for the implementation of the Minamata convention. Its main role is to participate in the negotiation and Conference of the Parties of the convention. In addition, VINACHEMIA is at the first stage of implementation of the activities envisaged by the Minamata convention. There is the obvious need of technical support to ensure that these activities will be carried out successfully and in a sustainable way.

Stakeholder analysis

The main beneficiaries of the project activities are the general public, consumers and communities who may be exposed to chemicals (POPs, other persistent and toxic chemicals, mercury) possibly contained in products, articles, food and the general environment. Health risk for people will decrease once a proper legislation regulating environmental and goods quality are in place and enforced. The chemical and manufacturing industry are also beneficiaries and interested stakeholders, as they will receive benefit in term of technical assistance and – being among the addressee of the regulatory tools to be developed under the project - will have the opportunity to have their views and needs considered in the course of law making activities related to the implementation of the Stockholm convention, the Minamata convention and SCM.

On the governmental side, the two main stakeholders of the project are the Ministry of Natural Resources and Environment (MONRE), which is in charge of the state management of the environmental protection, as well as setting environmental quality standards, environmental monitoring, remediation and prevention and Ministry of Industry and Trade (MOIT) which is the focal point for the legislation on chemicals, including the implementation of GHS and the

coordination with international legislation like REACH and ROHs. MONRE, through VEA is the focal point for the implementation of several international conventions including the Stockholm Convention, the Basel Convention, Montreal Protocol; MOIT, through VINACHEMIA, is the focal point for the negotiation, ratification and implementation of the Minamata convention on mercury, as well as Rotterdam Convention on the Prior Informed Consent of Procedure for certain hazardous chemicals and pesticides in International trade, Strategic Approach for International chemical management (SAICM) and chemical Weapon Convention.

In addition to MOIT and MONRE, in the table below the list of the main governmental stakeholders of the project, with their respective roles, is reported.

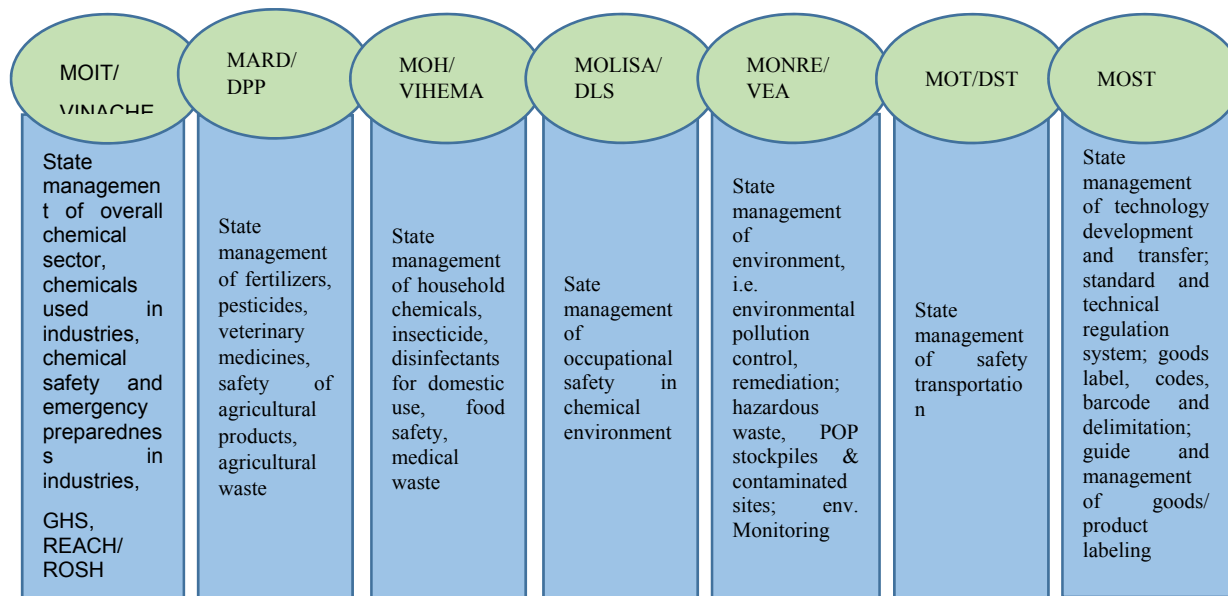
Table 7: Stakeholder Analysis

Government Agencies	Key function and mandate	Common responsibility/duties
MONRE	<ul style="list-style-type: none"> i) State management of environment, climate change, etc. ii) Environmental prevention and control, remediation of environmental incidents and degradation, etc. iii) Hazardous waste and POP stockpile & contaminated site management iv) Revise and add the list of facilities that are seriously environmental polluted v) Set up and manage national environmental monitoring system 	<ul style="list-style-type: none"> 1) Draft laws, resolution, decree, national target programs, etc. to be submitted to the Government for approval
VEA/MONRE	<ul style="list-style-type: none"> i) State management of environmental pollution control ii) Control preparation of lists of environmentally polluted facilities of various sectors and provinces iii) Organize implementation of prevention measures, emergency and preparedness plans, environmental remediation plans, etc. iv) Monitor environment quality v) Waste management including hazardous waste and environmental enhancement vi) Organize implementation of national environmental monitoring and information vii) Lead preparation of national environmental report and NIP update viii) National focal point of Stockholm convention on POP, Basel Convention and Montreal Protocol on ODS <p>There are 2 departments under VEA : Pollution Control Department (PCD) and Waste Management & Environment Improvement Department (WMEI) that responsible to implement above mentioned duty. PCD is assigned for duty of i, ii, iii, iv in air, vi, vii, viii with Stockholm convention. WMEI is assigned for duty of iv in soil and water, v, vi, viii with Basel Convention</p>	<ul style="list-style-type: none"> 2) Issue circular, decisions, direction, guidelines, national technical regulations, and other legal documents under each ministry's jurisdiction 3) Lead, instruct and organize implementation of legal documents, strategies, plans, national target plans, etc.
MOIT	<ul style="list-style-type: none"> i) State management of overall chemical management, chemicals used in industries, consumer products, scheduled chemicals of the chemical Weapon convention (CWC), including inorganic fertilizers ii) Lead and coordinate with other ministries to prepare national chemical list of prohibited, restricted and conditional chemicals; list of declaration chemicals; list of hazardous chemicals required to prepare emergency and preparedness plans; list of chemical prohibited to use in household and consumer products iii) Chemical handling and safety, iv) GHS, REACH & ROSH 	

VINACHEMIA/ MOIT	<ul style="list-style-type: none"> i) National Focal Point of Chemicals Weapon Convention, Rotterdam Convention (industrial sector); Minamata Convention on Mercury. ii) Grant permissions for trading and production of toxic chemicals used for special aims iii) Grant licenses for import/export of chemical precursors, chemical limited and prohibited in production and trade, industrial explosive materials iv) Approve emergency preparedness and response plan 	
Industrial Safety Technique and Environment Agency (ISEA)/MOIT	<ul style="list-style-type: none"> i) State management over safety techniques, environmental protection in industry and trade ii) Guiding, instructing and inspecting the implementation of the legal provisions on labour safety iii) Propose a list of machines, equipment's and materials subject to strict labour safety requirement within scope pf MOIT iv) Develop and organize implementation of programs, planning, projects on environmental protection in industry and trade v) Guide, manage and control wastes, noises, environmental incidents, environmental pollution, remediation and restoration in industry, etc. 	
MARD	<ul style="list-style-type: none"> i) State management of agriculture, forestry, sea products, aquaculture, rural development including pesticides and veterinary medicine used in the above areas; safety of agricultural and sea products ii) Direct implementation of state management of food safety regarding agricultural, forestry and sea – products iii) Instruct implementation of state management of environmental protection regarding production, business and services under the ministry iv) State management of organic fertilizers v) National focal point for Rotterdam convention on pesticides 	
Department of Plant Protection (DPP)/MARD	<ul style="list-style-type: none"> i) Sate management over plant protection and quarantine, pest prevention, pesticides used in agriculture ii) Leading and Guiding implementation of plant protection activities iii) Propose a list of pesticides, plant protection medicines allowed or restricted to use in Viet Nam iv) Organize plant protection chemicals registration, v) Instruct and guide implementation of plant protection chemicals management, collection and disposal of pesticide empty containers, vi) Grant permit for production, trade, processing, packaging of plant protection chemicals, etc. 	
MOH	<ul style="list-style-type: none"> i) State management of healthcare sector including household chemicals, insecticides and disinfectant for domestic and medical use, cosmetics including their safety use ii) State management of food safety in food production facilities, business, etc. including food additives, etc. iii) Environmental protection in healthcare sector including medical waste 	
Health Environment Management Agency (VIHEMA)/MOH	<ul style="list-style-type: none"> i) Sate management over health environment, quality of drinking and potable water, occupational health, prevention of occupational diseases and injuries, domestic chemicals, household insecticides and disinfectants, environmental protection associated to healthcare activities ii) Leading and guiding implementation of legal requirements, preparation of health impact assessment for investment projects, management of medical wastes, environmental 	

	<ul style="list-style-type: none"> remediation and restoration, iii) Organize appraisal of EIA reports of MOH projects iv) Grant permission for circulation/trade of domestic and healthcare chemicals, etc. 	
MOLISA	<ul style="list-style-type: none"> i) State management of labour sector including occupational safety in chemical environment 	
Department of Labor Safety (DLS)/MOLISA	<ul style="list-style-type: none"> i) State management of occupational safety ii) Guiding procedures for registration, control of machines, equipment's and materials that strictly require labor safety iii) Adoption of list of hard, toxic and dangerous jobs/occupations iv) Guiding and controlling implementation of national regulations on occupational safety 	
MOST	<p>State management of</p> <ul style="list-style-type: none"> i) technological development, innovation and transfer; ii) National standard and technical regulation system; iii) labels, codes, bar codes, and delimitation of goods and products and goods iv) guiding and state management of good labeling national wide 	
MOT	<ul style="list-style-type: none"> i) State management of transportation sector including safety transportation and environmental protection in transportation area 	
PPC/CPC	<ul style="list-style-type: none"> (1) Prepare overall provincial social- economic development plan, sector development plan and rural and urban development plans (2) Together with national agencies, prepare national /sectoral programs located in the province and organize and control the implementation of these plan/ programs (3) Direct implementation and control of production and use of pesticide, fertilizers, veterinary medicines and other biological products to server for agriculture (4) Direct implementation and control and inspection of technical safety of transportation means (5) Direct and organize implementation of environmental protection and enhancement; environmental degradation and pollution and responsibility of polluter to remediate polluted environment (6) Control and manage transportation of hazardous substances in accordance with legislation 	
DOIT	<ul style="list-style-type: none"> (1) Advise and assist PPC in State management of industries and commerce, including chemical sector in the province/city (2) Lead and cooperate with relevant agencies in controlling management, use, storage, and transportation of chemicals, industrial explosive material, liquid gases, mining, import/export, etc. including safety issues and emergency and preparedness plan 	<ul style="list-style-type: none"> (1) Advise and assist PPC in state management of the area the Department is responsible for (2) Draft decision, direction, local regulation to be submitted to PPC for approval
DARD	<ul style="list-style-type: none"> (1) Advise and assist PPC in State management of agriculture, forestry, sea products, aqua-culture, rural development including safety of agricultural and aqua products (2) Control use of pesticide in agriculture 	<ul style="list-style-type: none"> (3) Instruct, control and organize implementation of legal documents, plans, etc. under the department's authority
DOH	<ul style="list-style-type: none"> (1) Advise and assist PPC in State management of Healthcare sector, food safety and hygiene, insecticide and disinfectants for domestic and medical use (2) Organize implementation of medical waste management plan 	<ul style="list-style-type: none"> (4) Periodically report the management situation to PPC
DOLISA	<ul style="list-style-type: none"> (1) Advise and assist PPC in State management of labour sector including occupational safety in chemical environment 	
DONRE	<ul style="list-style-type: none"> (1) Advise and assist PPC in State management in natural resources and environment; (2) Organize investigation of contaminated sites, preparation of list of 	

	serious environmentally polluted facilities (3) Lead or cooperate with relevant agencies in implementing mobilization plan to respond to emergencies and environmental pollution remediation (4) Instruct preparation and organize implementation of environmental monitoring and monitoring database in the province	and respective ministry (5) A vertical link to line Ministries at central level, eg MONRE-DONRE
--	---	--



Key stakeholder involving in state management of chemical industry

Figure 2. State management of the chemical sector.

Barriers analysis

The following barriers have been identified that prevent Viet Nam to consistently implement a sound management of chemicals in the country.

- a) Environmental and chemical regulation is still incomplete and not compliant with SC requirements. In Viet Nam, a significant body of regulation does exist both on the side of environmental protection and chemical management. However, part of the regulation is not yet compliant with SC requirements, with specific reference to the list of restricted chemicals and the modality of restriction versus banning which does not cover all the POPs or misclassified some of the POPs.
- b) Lack of coordination among the authorities in charge of implementing different conventions. At least four ministries are involved in the regulation of POPs and management of chemicals: MONRE, MOIT and MARD, and, indirectly, MOH. However, the coordination of these ministries is lacking and they often issue regulation independently. Although the implementation of the Stockholm convention requires integration of the environmental, health, economical and industry related issues, the

view with which different Ministries regulate POPs is often limited to the scope and objectives of their specific mandate. There is no coordination on the implementation of emission limits for U-POPs at industrial level.

- c) Lack of a sound Management Information System on environmental data, pollutant sources, storage of hazardous chemicals and hazardous industrial processes which – based on a PRTR model – can be considered as a barrier for enforcing relevant regulation, planning reduction of POPs / PTS and other pollutants, reporting at national and international level.
- d) Lack of understanding of the importance of preventive actions, which substantially restrict the power of MONRE to “end of pipe” measures. The concept that “to prevent is better than cure” is not properly integrated in the Legislation on Environmental Protection. Although MOIT has adopted Circular 20/2013/TT-BCT of August 5th, 2013 which stipulates requirements for industries to prepare emergency preparedness and response plan to chemical incidents, there are no specific requirements for prevention of chemical incidents/emergency preparedness and response plans for other sectors (transportation, agriculture, etc.) and no specific requirements for cooperation in environmental remediation and how to do this (procedure) after the chemical incidents occurred..
- e) Lack of a implementation of risk assessment / risk reduction principles. Risk assessment and Risk Reduction principles in the establishment of environmental target levels are still missing. Although demonstrated in previous UN/GEF projects, a risk assessment procedure for establishing clean-up standard in contaminated sites is not commonly adopted. Risk assessment procedure for establishing release limits from industrial sources, or maximum allowed concentration for POPs and PTS in the environment, food, water is also lacking.
- f) The lack of a risk assessment approach has obvious consequences on the side of the enactment of environmental quality limits as above. In the absence of a solid scientific framework on risk assessment, environmental quality limits for the current POPs, PTS and any other substance to be regulated in the future will not be established in a consistent way.
- g) Monitoring capability. Although substantial progress have been made in the recent years on the monitoring of POPs in soil (pesticides and PCDD/F), and in the introduction of accreditation schemes, there is still a general lacking of monitoring capability concerning other matrixes and substances, with specific reference to sampling at the stack of industrial facilities, and analytical methods for new POPs, like PBDEs and PFOS, which will represent an emerging issue in the incoming years. With the exception of PCDD/F and some pesticides, a set of official analytical methods for POPs is still missing.
- h) Lack of standard methodologies for selecting and evaluating POPs remediation technologies. There is not an agreed methodology /guidance for the evaluation, testing and inspection of remediation and disposal technologies, which ensure that these technologies are in compliance with the Stockholm Convention.
- i) Lack of regulatory tools aimed at the proper harmonisation, integration and enforcement of the methodologies for contaminated sites management, with special reference to the risk reduction measures to be adopted to limit exposure to people when the sites cannot be immediately treated.
- j) Lack of mechanisms for addressing small contaminated sites at the community level, including the awareness of the concerned communities;

- k) Lack of an inventory on POPs contaminated industrial sites (including dismissed facilities) around the country. Inventory of industrial site was never attempted even under GEF funded projects.
- l) Lack of consolidate capacity on mercury inventory. The issue on mercury is very new to the country which was among the first signatories of the Minamata convention and there is the need to develop capacities for inventorying of mercury sources and identifying in agreement with relevant stakeholders a sustainable strategy for mercury source reduction.
- m) Lack of financial capability to establish coordinated and inter-ministerial activities on POPs and chemicals and to solve the several issues related to an improved implementation and enforcement of regulation on environmentally sound management of chemicals.

II. STRATEGY

By providing technical and financial support in activities related to policy, monitoring, management of contaminated sites and inventory of mercury, the project will effectively address the barriers which are currently hindering a consistent implementation and enforcement of the Stockholm Convention and of a sound management of chemicals.

On the side of policy framework (barriers a. to c.) , GEF support will focus on the identification of gaps in the current legislation, provision of technical assistance in the drafting necessary amendments to the regulation or new legislation, toward sound management of chemicals and hazardous waste/POPs. Taking into consideration the impacts and the benefits that will have on diverse stakeholders and the public. In doing that, the project will enhance cooperation among diverse governmental and non-governmental stakeholders and integration among different regulatory instruments, with the general goal to integrated methodology and regulations with the relevant provision on POPs and PTSs.

To overcome barrier (d), the project will establish, at pilot level in two provinces, a Management Information System of monitoring data and pollution sources specifically addressed to POPs / PTS, but expandable to cover other pollutants, aimed at enforcement, planning, and reporting at national and international level following a PRTR approach. In doing so, the project will coordinate with ongoing bilateral activities like the JICA project on air quality management, which implementation is planned for the period mid 2014 to the end of 2015, and the JICA project “Strengthening chemical management” (2014-2017) under which project a chemical database will be established as a project activity.

The project (barriers e. and f.) will ensure that scientific principles of risk assessment and environmentally sound management of chemicals – with specific reference to POPs and PTSs - are introduced in the drafting / amendment of legislation on chemicals.

For removing the barriers (g.) related to monitoring capability, the project will increase the capacity of the country on monitoring by promoting accreditation of laboratories, providing training on sampling and analytical methodologies, providing technical knowledge for establishing baseline and quality standards, establishing PRTR system in a coordinated way and piloting PRTR at provincial level.

The project, to overcome barrier on the management of contaminated sites (barriers h. to k) will built on the experience of UNDP/GEF projects being concluded in the country for substantially shifting from a demonstrative approach, focused on few large sites, to a regional approach,

aimed at reducing risk and preventing the release of POPs coming from contaminated sites in 2 provinces (Nghe An and Binh Duong). This ambitious objective is now pursuable thanks to the effort already made in the country by the GoV, the UNDP/GEF project on dioxin and pesticide, and other donors' projects on the establishment of a contaminated site inventory, development of preliminary risk assessment criteria for contaminated sites, demonstration of the sites remediation using various treatment technologies, improvement of the regulatory work, capacity building, awareness raising, etc. The project will also continue the effort of integrating into the environmental legislation in Viet Nam the risk assessment approach for management of contaminated sites and Stockholm Convention requirements.

In addition, the project will remove the barriers (l.) related to the implementation of the Minamata convention requirements on Mercury by bringing technical assistance on the inventory of mercury and identifying a roadmap for addressing the issue of mercury added materials and goods.

The project (barrier m.) is expected to leverage a substantial amount of fund. The sustainability of the activities after project ends relies mostly on the proper implementation of project activities envisaging development, demonstration and enforcement of legislation and guidance on POPs.

PROJECT CONFORMATY TO NATIONAL POLICIES

a, The project is consistent with a number of national plans and strategies, including:

The National socio-economic development strategy for 2011-2015 (Resolution 10/2011/QH13) at point 7 establish the need to *“Improve and enhance the effectiveness and efficiency of policies and law on natural resources and environment protection to ensure sustainable development. Strictly follow the process of constructing, appraising, approving, testing and supervising the evaluation of environmental impacts to socio-economic development strategies, plans, policies, programs and projects. Resolutely handle the establishments that cause environmental pollution, especially those located in economic and industrial zones and craft villages. Encourage larger social involvement in protecting the environment”*.

The National strategy on cleaner industrial production to 2020 (Decision 1419/QĐ-TTg) envisages to *“Perfect the system of mechanisms, policies and laws which boost cleaner industrial production; Review, revise, supplement and promulgate mechanisms, policies and laws on cleaner industrial production or submit them to the competent entities for promulgation”* for the purpose to *“... improve the use of natural resources, materials, and fuels; minimize emission and curb pollution; protect and improve the quality of environment, human health and secure sustainable development.”*

The National Strategy on exports and imports for 2011-2020, (Decision 2471/QĐ-TTg) aim, among others, at issuing *“ technical standards for goods in line with international commitments in order to control the import of poor-quality goods which can cause negative impacts on environment and health”*

The National Strategy on Environment Protection to 2020, (Decision 1216/QĐ-TTg) includes, among others, the following objectives:

- *Pollution prevention and control should be prioritized;*
- *Improve the environment in polluted and deteriorated areas; to better living conditions of people;*
- *Mitigate deterioration and exhaustion of natural resources; to restrain the degradation of biodiversity;*

- *Strictly apply the registration of chemicals, especially toxics;*
- *Supplement, finalize and apply technical standards and requirements on chemical,*
- *Inspect, evaluate, locate, map and localize land areas being or appear to be intoxicated, or having residues of chemicals, herbicides, pollutants, and dioxin;*
- *Plan and gradually conduct environment improvement and recovery, prioritizing land areas within or near residential areas and water sources, or those which can directly influence people's health;*
- *Prioritize cooperation with other countries, international organizations, foreign groups and companies in seeking for resources, technologies, machinery, equipment and chemicals to improve land areas being intoxicated or having residues of chemicals and pollutants;*
- *Combine the mobilization of resources for improving and recovering land areas contaminated with toxic substances, with projects on assigning or leasing improved and recovered land areas.*

Agenda 21 of Viet Nam defines priority actions in order to reduce adverse effect by environmental pollution for people's health as: planning monitoring, collection and treatment of hazardous waste. The implementation of plans must be supervised by environmental protection agencies.

Viet Nam's National Implementation Plan under the Stockholm Convention establishes that *the core approach shall be "pollution prevention" with recognition of POPs as posing long-term potential hazards to human health and the environment.* The first objective of the NIP is to *"develop and finalize policy, legislative and institutional frameworks for effective management of POPs in order to reduce and finally eliminate POPs"*

b, Project conformity with the country's Laws and Regulations: The main regulations, already described in the baseline analysis, which are relevant to project implementation, are listed below.

Law on Environmental Protection (2014) (LEP). The 2005 LEP regulates environmental protection for various sectors and individuals. Key environmental protection requirements for chemicals and hazardous waste management are mainly specified under following chapters:

- *Chapter II: Environmental protection planning, strategic environmental assessment (SEA), environmental impact assessment (EIA) and environmental protection commitment (EPC);*
- *Chapter III: Environmental protection in natural resources exploitation and uses*
- *Chapter IV: Respond to climate change*
- *Chapter V: Marine and Island Environmental Protection*
- *Chapter VI: Water, soil and air environmental protection*
- *Chapter VII: Environmental protection in manufacturing, business and services activities;*
- *Chapter IX: Waste management;*
- *Chapter X: Environmental pollution remediation, rehabilitation and improvement*
- *Chapter XI: Environmental technical regulations and environmental standards*
- *Chapter XII: Environmental monitoring;*
- *Chapter XIII: Environmental information, indicators, statistics and reporting*
- *Chapter XIV: Responsibilities of state administrative bodies in environmental protection;*
- *Chapter XV: Responsibilities of Viet Nam Fatherland Front, Social – political organizations, social – professional organisations and communities in environmental protection,*

- *Chapter XVIII: Inspection, dealing with Breaches resolution of complaints and denunciations related to environment, and compensation of environmental damages; and*
- *Chapter XIX: Compensation to environmental damages*

Inclusion of requirements on “*environmental protection against chemicals, pesticides and veterinary medicines*”¹⁴, “*environmental remediation and rehabilitation in contaminated sites*”¹⁵, “*Prevention of and response to environmental incidents; remediation and rehabilitation of environmental incidents*”¹⁶; risk assessments are big advantages that 2014 LEP has been achieved compared to 2005 LEP.

Law on Plant Protection and Quarantine (LPPQ). The LPP&Q regulates activities associated to plant protection and quarantine including pesticides used for plant protection.

Law on Environmental Protection Tax (LEPT) – 2010. The LEPT takes effect from May 2012 to cover nine (09) groups of products that have to pay environmental tax

Sub-law documents and guidelines for Environmental protection. A series of sub-law documents have been issued under LEP as well as LPPQ and LEPT to provide technical requirements for their enforcement.

Law on Chemical (LOC) Chemical safety is regulated under the Law on Chemical (2008). In addition, also Labour Law (2012), Law on Food Safety (2010), Law on Railway (LR) also establish some provision on chemical safety related issues.

Decision 155/1999/QD-TTg of the Prime Minister of the Government on promulgating regulation of hazardous waste management.

Decision No 64/2003/QD-TTg of the Prime Minister of the Government approving the plan for thoroughly handling establishments which cause serious environmental pollution.

PROJECT RATIONAL AND INTERNATIONAL POLICY CONFORMATY

The goal of the GEF5 chemicals focal area strategy is to “*promote the sound management of chemicals throughout their life-cycle in ways that lead to the minimization of significant adverse effects on human health and the global environment*”. The project is consistent with the Objective 1 (CHEM-1) of the GEF5 Chemical strategy: “phase out POPs and reduce POPs release”, contributes to achievement of outcome 1.4: “POPs waste prevented, managed, and disposed of, and POPs contaminated sites managed in an environmentally sound manner” and outcome 1.5 “country capacity build to effectively phase out and reduce releases of POPs” where it is clearly established that inventories and development of management plans for contaminated sites, including risk assessment and prioritization; and, where warranted by pressing health or environmental concerns, supporting partnerships for remediation and piloting remediation technologies.

The project is also consistent with the GEF5 chemical Strategy’s Objective 3 (CHEM-3) “Pilot sound chemical management and Mercury reduction”, contributes to achievement of outcome 3.1: “country capacity build to effectively manage mercury in priority sectors” and outcome 3.2 “overall objective of the SAICM of achieving the sound management of chemical through their life cycle in ways that lead to the minimization of significant adverse effects on human health

¹⁴ Article 78, 2014 LEP

¹⁵ This is under Section II, chapter X, 2014 LEP

¹⁶ This is under Section III, chapter X, 2014 LEP

and the environment” for the components 4 and 1 that relates to inventory of mercury sources, mercury reduction strategy, implementation of support to policy development, the implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) in partnerships with the private sector; and development and implementation of Pollutant Release and Transfer Registers (PRTR).

Project Description

Project Goal, Objective, Outcomes and Outputs/activities

The project **Objective** is to continue the reduction of environmental and health risks through POPs and harmful chemicals release reduction.

The project intends to achieve this objective by provision of an integrated institutional and regulatory framework for better enforcement of the Stockholm Convention provisions, and covering the development of pilot PRTR system covering at least 20% of the industrial sources in an industrial province, for the management and reporting of POPs and Mercury. The project intend to work toward the creation of a national sound chemicals management framework and targeted development of POPs contaminated sites management capacity that builds on experience from GEF-4 projects.

In order to achieve the project objective, four project Components are envisaged:

Project Component 1. Policy framework for sound chemicals management, including POPs/PTS developed and implemented.

The project will assist the Vietnamese government in the process of integrating the provision/articles on POPs/PTS in the Law and regulations on Environmental Protection and on Chemical Management, which are evolving but still miss consistent implementation of Stockholm Convention requirements, and which need to be complemented with risk assessment criteria and guidance. More specifically, the project will ensure that the amendments to the existing legislation, and the possible new regulatory tools which would be developed, will be properly based on risk assessment / reduction / management criteria, and will be established in a way which ensures the coherence within the whole regulatory system, overcoming the current inconsistencies or overlapping among regulations which are being developed and enforced by ministries with different objectives. Of specific concern is the Law on Environmental Protection (LEP) which is currently under revision by the MONRE. The new draft Law on Environmental protection contains statements related to the criteria of prevention, risk assessment, as well as to a number of environmental standards that will obviously need to be better specified and enforced. The draft regulation also contains articles related to the management of contaminated sites. To be enforceable, a set of proper secondary regulatory tools is needed which will be developed under the project.

A similar situation also concern the Law on Chemicals, as the classification of chemicals under the three categories of conditional, restricted or banned are in some cases not consistent with the Stockholm Convention requirements. In addition, environmental requirements under the Law on Chemicals – which is under the scope of MOIT, and provisions affecting the industrial sectors under the Law on Environmental Protection – which is under the scope of MONRE are currently not completely coordinated. There is the need to ensure that the provisions under the two regulatory tools on Environment and Chemicals are established and enforced in a coordinated and consistent way among the two ministries, as well as other ministries when relevant.

The project will therefore assist the Vietnamese government in the definition of these regulatory tools (decrees, circulars, guidelines) that will ensure the proper implementation of the Stockholm

Convention and of Sound Chemical Management as secondary legislation of the Law on Chemicals and the Environmental Protection Law.

One of the most important regulatory tool currently being drafted, to be perfected and enforced with the support of the project, is the PRTR circular. The PRTR circular will establish duties for industries and competent authorities relevant to the gathering, storing, and communication of information related to POPs and harmful substances generation and releases.

To ensure coordination among Ministries, under the project an inter-ministerial consultation mechanism will be established for ensuring that the interest of the different governmental stakeholders are properly compiled and addressed.

This component will therefore complement and support the reviews and amendments of the POP/PTS policy framework the Vietnamese government is carrying out, mostly by identifying and drafting secondary legislation which may be enacted within the project life, and by facilitating coordination among stakeholders.

In order to secure this Component, the following Outcomes and Activities/Outputs are anticipated:

Outcome 1.1. Overall policy framework and specific regulatory measures covering environmentally sound management of POPs and PTS through life cycle management developed and implemented. The following outputs / activities are envisaged under this outcome:

Output / Activity 1.1.1 Detailed review and gap analysis of Laws on Chemicals and Environmental Protection with respect to coverage of POPs, PTS and environmentally damaging chemicals management including mercury, conducted. A regulatory improvement plan developed.

A preliminary gap analysis has already been developed under Project Preparation activities. The detailed gap analysis will encompass the review of the Law on Chemicals and the Law on Environmental Protection, the related secondary legislation and the effectiveness of their enforcement, to provide a clear framework of actions for a consistent and integrated regulatory approach leading to the full implementation of the conventions on POPs, mercury, and SCM. The gap analysis will not only analyze the current legislation with reference to the international conventions: it will also identify any inconsistency or conflict among provisions established by different authorities, with the purpose to identify any needed further amendments for an harmonised legislation on chemicals. The gap analysis outcome will be used to generate a regulatory improvement plan to integrate POPs/PTS requirement in the national regulation.

Output / Activity 1.1.2 Decree/regulation applicable to the Stockholm Convention amendments on “new” POPs including bans where not yet in place, developed.

As reported in the preliminary legislation gap analysis the Law on Chemicals, and the related secondary legislation do not always contain provisions on POPs as required by the Stockholm Convention. More specifically, provisions on new POPs are not included in the Law on Chemicals. Therefore, these laws will be amended or integrated with specific decrees to fully implement the requirements of the Stockholm Convention.

Output / Activity 1.1.3 Enacted legal instrument in the form of amended Laws or Decrees/regulations defining linkage between these laws and the regulatory instruments in place, with the purpose to introduce harmonisation and simplification.

There are a number of aspects that call for a better integration of chemical management into existing laws:

- A more effective integration and simplification of prevention principles into the legislation, with specific reference to requirements established under Environmental Impact Assessment of industrial facilities, environmental permitting of plants and storage using hazardous chemicals, list of chemicals – including POPs – requiring specific countermeasure to avoid accidents;
- Risk assessment criteria and methodology have to be integrated in the legislation on registration, classification and authorisation of chemicals.
- Risk assessment criteria and methodology will be integrated in the POP contaminated site management, site planning and site clean-up processes.
- Implementation of BAT/BEP requirements in priority sectors, as long with risk based emission standards from priority industrial sectors.

It should be noted that, with specific reference to data related to pollution originated from the manufacturing and chemical industry, there is not a specific format for gathering relevant data from industries on pollution load, emission, emergency measures. Instead, information is collected from time to time by the local or central governments, using different formats and deadlines, which at the same time create bureaucratic burden to the enterprises and are not effective. The project will explore the feasibility to integrate all the environmental permits into one single environmental permitting procedure.

Output / Activity 1.1.4 Guidelines integrating environmental control of POPs and PTS within the overall chemicals management framework, including coverage of: i) general environmental protection for chemical activities, ii) scheduled wastes containing toxic chemicals, iii) environmental emergency and response, environmental risk assessment of waste containing toxic chemicals methodology, iv) health risk assessment for chemical wastes procedures.

Based on the gap analysis and on the enforcement strategy envisaged for the new regulatory tools, guidelines to be officially adopted detailing the technical requirements and methodologies will be drafted and introduced relying also on coordination meetings and workshops with the relevant stakeholders. Of particular relevance for this output are the guidelines on risk assessment, for registration, classification and authorisation of chemicals, in accordance with GHS criteria, as well as risk assessment criteria and framework for the establishment of new environmental limits, and BAT/BEP guidelines for priority sectors.

Output / Activity 1.1.5. Establishment and enforcement of the regulatory framework for POPs/ PTS tracking tool and a PRTR system through support in drafting the PRTR regulation, by establishment of an inter-ministerial coordinating group on PRTR regulation, Integrating POPs / PTS requirement in the database design, drafting guidelines for PRTR enforcement and implementation.

PRTR (Pollutant Release and Transfer Register) is intended to provide easily accessible key environmental data related to the generation of POPs and PTS from industrial sectors, as well as monitoring information. The PRTR decree will list the industrial facilities subjected to PRTR, the format of data reporting and storage, the duties of competent authorities in the periodical updating, storing and communication of that. Information under PRTR concern the amounts of pollutant releases to air, water and land as well as off-site transfers of waste and of pollutants in waste water from a list of pollutants.

The implementation and enforcement of a PRTR decree will allow to :

- Maintain a database of environmental monitoring, with specific reference to POPs and priority PTS (for instance, mercury)
- Prioritize industries to be included in the PRTR register;
- Identify the list of pollutants to be included in the register (as a minimum, industrial use POPs and mercury shall be included at this stage)
- Define the responsibilities in enforcement of the regulation and the supervision methods;
- Define the modality to communicate with industries avoiding overlapping and conflicting with other norms requiring the submission of environmental information from the enterprises.
- Identify format of the PRTR such as this is compliant with format established under other international PRTRs database

The register contributes to transparency and public participation in environmental decision-making.

Outcome 1.2. Key institutions have knowledge and skills to formulate and implement necessary chemicals and environment policies, consistent with sound chemicals management principles and international convention requirements

This output will be achieved by means of several activities:

Output / Activity 1.2.1 Active participation of Viet Nam in the International Conference on Chemicals Management. The active participation of Viet Nam in the International Conference on Chemicals Management and other relevant international workshops, by preparatory works for and sending a delegation to the conference will be ensured. This will be the first time for Viet Nam to join the ICCM and will represent an important opportunity for establishing the Country's policy on chemical and hazardous waste management with a global perspective.

Output / Activity 1.2.2 30 professionals from VEA, VINACHEMIA, Department of Water Resources Management, national customs authorities and industrial stakeholders trained in implementation of chemicals classification and labelling in global harmonized system and adaptation of the EU REACH/ROSH approach for application in Viet Nam

The Viet Nam chemical industry is currently growing, and Viet Nam products are currently being marketed globally. Compliance with international regulation therefore may impact the local production of chemicals and articles. More specifically, EU regulation related to the restriction of some chemicals (restriction and authorisation under REACH, and ROHS) and the GHS classification of chemicals, may be drivers toward the implementation of a more safe management of chemicals, including the restriction of the use of POPs.

Professionals from VEA, VINACHEMIA, Department of Water Resources Management, national customs authorities and industrial stakeholders will therefore be trained in implementation of chemicals classification and labelling in global harmonized system and the use of EU REACH/ROSH approach envisaging possible applications Viet Nam, or the impact of these European regulations on the chemical management in Viet Nam. Through this output, professionals from VEA, VINACHEMIA and Ministry of Health will be trained on common national procedures for chemicals environmental and health risk

assessment and release reduction, with specific reference to the reduction of POPs and PTS.

The training will be integrated as part of the periodical qualification procedures of the professionals from the administration. Official training certificate will be released after successful completion of the training. To access the training session, candidate will have to pass an initial test which will serve also as baseline; and a final test, which will demonstrate the progress achieved and hence effectiveness of the training. The trainees passing the final test will receive an official certificate issued by the relevant administration. The above will ensure at the same time willingness to attend training course and quality/effectiveness of the training.

Output / Activity 1.2.3. Facilitate the Implementation of common national procedures for chemicals environmental and health risk assessment and release reduction enforcement including training of 30 professionals from VEA, VINACHEMIA and relevant departments in Ministry of Health.

By the end of the project, at least 30 professional from VEA, VINACHEMIA and relevant departments in Ministry of Health trained on implementation of national procedures on risk assessment and management of chemicals, with specific focus on POPs and new POPs. The training will be aimed at providing to the decision makers in the administration the scientific and technical knowledge to apply the risk assessment methodology (based on the formal steps of hazard identification, exposure assessment and risk quantification) to the regulatory aspects, from the initial step of standard setting and law making to the implementation and enforcement of environmental legislation

Output / Activity 1.2.4 Market based policy initiative developed to promote reduction in POPs releases and POPs disposal through development of national POPs management service provider capability on a commercial basis through private public partnerships.

A market based policy may be defined as a policy aimed at promoting activities carried out in a sustainable way by the private sector, based on an economic resource made available by the establishment and enforcement of proper regulation, to pursue an environmental objective.

In example, in the case of contaminated sites, the economic resource is represented by the increased value of the land after decontamination. Regulation and enforcement are required to prevent the use of contaminated lands, and to monitor the effectiveness of the cleaning up.

For environmental monitoring, the economic resource is the fee paid by private enterprises which would be required by the regulation to carry out with a specific periodicity environmental and process monitoring of their plants. In this case, the economic resource is represented by the internalization of environmental costs after a proper regulation is established and enforced, and basically this means a redistribution of the incomes of industries in favour of environmental services.

In the case of waste recycling (including the very special case of ship-breaking which has been recently allowed under the new revision of the LEP), the economic resource is provided by the value of the recycled materials. The economic resource necessary to ensure compliance with environmental objectives is mobilised by regulation establishing that only recovered material which is safe and is recovered without harm for the environment and the human health can be placed on the market.

An economic resource as a driving force for market based mechanism may be mobilized even for non-recyclable waste, by establishing the extended producer responsibility linking the products to hazardous waste: is the case of E-waste, or of exhausted containers of pesticides.

A market based policy will be established by the project in the following way

- 1) By confirming the priority of the sectors identified in the course of project preparation;
- 2) By establishing and enforcing other necessary regulation with the objective to internalize environmental costs which otherwise would be fully externalized;
- 3) By enhancing the capability of private operators in the relevant fields, and if necessary, training and communication;
- 4) By establishing proper communication and awareness raising.

The following sectors – among which one or two will be selected for implementation - have been preliminarily identified at project development as priority sectors for the development of a market based policy initiative

- Collection of chemical waste based on extended producer responsibility (like new-POPs containing waste or the collection of empty pesticide containers)
- Establishment of a market for sampling and monitoring of industrial sources based on the enforcement of rules requiring monitoring of U-POPs and POPs releases – in coordination with the enforcement of a PRTR scheme
- Establishment of a market for site cleanup based on the enforcement of regulation ensuring that contaminated land is not usable / sellable until its clean-up is completed.
- Incentive scheme for the reduction of the use of POPs/PTS, including mercury, in the manufacturing sector, or in the waste recycling activities.

Component 2. Monitoring and reporting of POPs and PTS

In order to secure this Component, the following Outcomes are anticipated:

Outcome 2.1. National institutions provide comprehensive and coordinated ambient environment and receptor POPs /PTS monitoring that is consolidated into a national database and utilized for high quality reporting to the GoV/National Assembly and the Convention. This output will cover 3 POPs categories (U-POPs, agricultural chemicals, and chemical of industrial use) plus mercury, and will envisage the following activities:

Output / activity 2.1.1 ambient environment (air, water, soil) and receptor (human, biota, food) POPs and PTS baseline established against which future monitoring can be measured and reported. This activity will be based on the review of the relevant international sources (POPs risk profile documents, WHO; IARC; EU risk assessment reports; US EPA) as well as on available monitoring data in Viet Nam, and will provide the monitoring baseline and technical basis for standard setting in Viet Nam.

Output / Activity 2.1.2. Inventory of ambient environment and receptor monitoring capability including a gap analysis identifying where strengthening is required. Currently, a list of laboratories with potential capacity to carry out POPs analysis has been developed by MONRE. There is still the need to understand what is the capability of laboratories to carry out sampling at industrial stack, as well as the capacity to perform analysis of new POPs. A detailed inventory of ambient environment and receptor

monitoring capability including a gap analysis identifying where strengthening is required will be established.

The detailed inventory will provide

- An exhaustive list of laboratories;
- POPs and PTS parameters each lab is currently able to measure for each environmental matrix and receptor;
- the analytical methods adopted;
- the existing quality control and assurance with reference with GLP criteria.

Output / Activity 2.1.3 Upgraded monitoring programs in key areas where strengthening is required, developed. Based on the activity 2.1.1 and 2.1.2, an upgraded monitoring program in key areas where strengthening is required, will be developed.

Outcome 2.2 National network of certified/ accredited POPs/PTS laboratory is established that support monitor of ambient environment and receptors. Under this outcome, the following activities will be carried out:

Output / Activity 2.2.1 Up to 2 laboratories accredited to international standards to support POPs/PTS monitoring. At least 2 laboratories will be accredited for the analysis of selected new POPs, and mercury, and integrated in a calibration network of laboratories at national or international level. This activity will build on the capability of Vietnamese laboratory to work under ISO 17025 schemes, extending therefore the accreditation to all the relevant aspects (management, personnel, equipment, methods) necessary for the analysis of new POPs and mercury.

The integration of the laboratories in a network of laboratories ensures that there is capacity to carry out the monitoring of new POPs in the relevant matrixes in a reliable and consistent way. A program for a periodical round robin test at national and international level will be established, in addition, and a pilot round robin test on the analysis of selected new POPs will be carried out. It is envisaged that the accreditation will encompass at least the sampling and analysis of PBDEs and PFOS.

As one laboratory in Viet Nam is participating in the regional network established under the GEF/UNEP project aimed at developing detailed guidelines, protocols and manuals as well as training of staff in participating laboratories and strengthening the performance of sampling and analysis, the project will coordinate with that lab and extend the activity to enable additional laboratories to improve their ability to analyse POPs according to international standards, with specific reference to new POPs and mercury.

Output / Activity 2.2.2 Up to 40 relevant national and provincial government staff will be trained on POPs/PTS monitoring and reporting following international standards and requirements.

Training will be conducted both as class lessons and field demonstration. The class courses will include:

- Generalities on risk assessment approach;
- Hazard characterization of POPs and PTS (mercury – heavy metals)
- Environmental behavior of POPs and PTS

- Use of POPs and PTS in different industrial processes.
- Methodologies for the environmental monitoring of POPs and PTS
- Methodologies for the monitoring of worker's exposure to POPs and PTS: personal active and passive samplers
- Analytical methodologies for POPs and PTS: screening analysis (when available, i.e. PCBs, PBDE), laboratory analysis

The on-site training will include:

- Site visits to relevant industries to understand monitoring complexities at industrial facilities
- Demonstration of environmental sampling
- Demonstration of monitoring of worker's exposure
- Identification of proper Personal Protective Equipment and demonstration of their use

Output / Activity 2.2.3 A POPs/PTS database developed at provincial level and PRTR reporting system operational and linked to the POPs tracking tool and data submitted to Convention Secretariat.

The new LEP already envisage the obligation to monitor and report periodically persistent and accumulative substances in the environment. This activity will therefore facilitate the enforcement of this provision.

Under this output, the project will establish a database system of POPs monitoring data, POPs sources, industrial processes and storage of hazardous materials to ensure the enforcement of SC provisions and to facilitate BAT/BEP implementation, planning and reporting at national and international level. This will include the following:

- Design of a POPs/PTS database
- Gathering of all available POPs monitoring data countrywide;
- Gathering or estimation of industrial POPs and PTS releases from the priority industrial sources identified in one pilot industrial province (Bing Duong), representing however not less than 20% of the overall number of industrial facilities;
- Integration of monitoring data with regulatory mathematical model for dispersion of pollutant in the atmosphere (US EPA models) or in the general environment (EU-ECHA models)
- POPs/PTS data entered and PRTR report generated.

Under this activity, the project will coordinate with the ongoing JICA "Project for institutional development of air quality management in socialist republic of Viet Nam", which has the purpose to enhance the institutional capacity of air quality management in Viet Nam.

Component 3. Management of POPs contaminated sites

As already detailed in the baseline analysis, although recently a circular on clean-up target level for pesticides and dioxin has been enacted, there is still the need to ensure, in a coordinated and integrated way, that the provisions on POPs are soundly and consistently established throughout the environmental legislation in Viet Nam. Besides, specific areas for which clean-up

target level for soil are not yet available (for instance PCBs and new POPs), there is the urgent need to establish official procedure and criteria for risk reduction at contaminated sites, with special reference to those sites that cannot immediately treated..

It is clear that the large number of contaminated sites found and inventoried in the country cannot be treated within a short period, and indeed for this purpose the National Target Program under decision 1946 envisages a time frame spanning up to the year 2025.

The province of Nghe An is by far the most heavily affected by contamination of pesticide POPs. As detailed in the situation analysis, 277 sites (including 10 sites under confirmation) contaminated by pesticides have been listed in that province as priority sites to be cleaned up by the year 2020. Of these sites, more than 107 sites are assessed as contaminated by POPs by preliminary analysis. The majority of these sites is within or in the close vicinity of residential area.

In addition, there is the need to increase the knowledge of the situation of industrial contaminated sites, which may be contaminated simultaneously by several contaminants and which in addition may pose additional challenges for their clean-up, due to the possible presence at these sites of industrial infrastructures. In the Binh Duong province, as reported in the baseline, around 2785 manufacturing industries have been listed. There are serious evidences of improper management and hazardous waste which are often dumped in illegal landfills in the vicinity of industrial areas¹⁷.

Based on the above, there is a need to establish urgent measures to avoid further spreading of POPs and PTS contained at that sites, and to reduce the exposure of people to these contaminants.

Under this component, a roadmap for undertaking the timely adoption of risk management measures and the provincial level in the form of Provincial Environmental Management Plan will be elaborated for 2 provinces. That will in addition require the establishment of an inventory of POPs contaminated sites originated by mismanagement of waste in the Binh Duong province.

The above will be complemented by the upgrading of the legal and regulatory framework including clean-up standards for POPs when missing, risk-based site management criteria, and clear rules for the management of contaminates sites, to prevent any land use (including excavation, cultivation, etc.) until risk management measures are adopted pending cleanup activities.

The 2 demonstration provinces will be Nghe An for pesticide contaminated sites, and Binh Duong for industrial contaminated sites. The Provincial Environmental Management Plan will complement the baseline project consisting of the National Target Programme on Pollution Remedies and Environmental Improvement

This Component will envisage the following Outcomes:

Outcome 3.1 Key policies, regulations and technical guidelines for management of POPs contaminated sites are in place.

The following activities, which are mainly on the regulatory side, will be conducted to achieve this output:

Output / Activity 3.1.1 Supporting regulations and standards for contaminated sites covering requirements for:

¹⁷ Report: Shortcomings in the management of toxic chemicals (POPs / PTS) in Binh Duong Province and proposed solutions. Nguyen Ngoc Chau – Binh Duong Division of Environmental Protection (Hanoi, 1/07/2014)

- i. Land use restriction for contaminated sites pending remediation activities;
- ii. Contaminant levels to trigger action with specific reference to POPs (currently PCDD/F and POPs pesticides target levels have been already established)
- iii. Future land use clean-up level requirements for POPs contamination in soil and water;
- iv. Reporting modality and templates;
- v. Care/custody and liability assignments

Output / Activity 3.1.2 Risk management procedures and guidelines for contaminated sites developed.

These guidance will include: site assessment methodologies, based on lesson learned from previous GEF4 projects; risk reduction and risk management measures for sites which cannot immediately be treated; selection criteria for disposal and clean-up technologies; methodologies and procedures for technology evaluation and proof of performance testing.

Output / Activity 3.1.3 National consolidated POPs contaminated sites inventory developed and prioritized.

Under the project GEF/UNDP project “Building Capacity to Eliminate POPs Pesticides Stockpiles”, a national inventory of sites contaminated by pesticides has been already developed. This inventory, which currently contains information on around 1300 sites contaminated by pesticides, does not include yet information on industrial sites contaminated by POPs, and sites contaminated by PCBs or new POPs. In addition, there is no information on sites contaminated by mercury. Therefore, this activity will upgrade the existing database with an inventory of industrial contaminated sites, in the pilot province of Binh Duong including sites contaminated by PCBs. These sites will be prioritized in coordination with the activities under Outcome 2.1.

Outcome 3.2 Detailed Provincial Management Plan for the pilot Provinces completed that contribute better to the contaminated site management at large scale and the reduction of POPs/PTS release and emission in the pilot provinces.

The Provincial Management Plan for the 2 provinces will include the following:

- Speditive site visits to all the POPs contaminated sites listed under the Decision 1946;
- Speditive site visits to a number of priority industries and sites of hazardous waste dumping (tentatively around 100 industries will be visited)
- Risk-based prioritisation of contaminated sites;
- Identification of storage options based on environmental criteria, risk assessment and logistic.
- Identification of technological needs for cleanup and disposal; This activity will also linked on the establishment of the market based initiative established under component 1 to set up a market based system for the storage / and disposal empty pesticide container.

This outcome will ensure the timely and sound large scale implementation of the methodologies on POPs site assessment and clean-up developed under other GEF 4 projects, and will therefore, represent the upgrading from demonstrative activities to full scale. The role of the GEF project will be to provide technical assistance on the development of a provincial, risk based management plan, based on sound criteria safe storage of pollution sources, adoption of exposure reduction measures, clean-up design (monitoring design, selection of proper cleanup

and disposal technologies, design of site specific proof of performance testing, assessment of resettlement needs, etc.) to ensure that POPs are not further spread in the environment and that clean-up and destruction of POPs will be subsequently carried out safely and in compliance with the Stockholm Convention and the Basel Convention.

The following activities will be carried out under this output:

Output / Activity 3.2.1: Detailed remediation planning based on the existing database on POPs contaminated sites in the two provinces.

This will include:

Speditive site visits to contaminated sites in the demonstration provinces (Nghe An and Binh Duong). This activity will be aimed at gathering relevant information on presence and extension of contaminated area, presence and amount of POPs waste, identification of sensitive environmental and human targets, identification of urgent risk reduction measures to be adopted, sampling and analysis of environmental media (surface soil, groundwater) that need to be filled in term of confirmation of POPs contamination, size, presence of POPs stockpiles.

Strategic prioritization of contaminated sites.

Mapping of all the relevant information on contaminated sites on a GIS system will be established, for facilitating the strategic planning based on risk and logistic considerations. Tentatively, the information to be mapped for further elaboration will be:

- POPs substances identified / measured (analytical reports or gathering of info from visual inspection of obsolete pesticide or hazardous waste stored at sites)
- Preliminary identification of the needed cleanup activities (in term of excavation amount, amount of obsolete chemicals stored)
- Availability of data for conducting a preliminary risk assessment (may include monitoring data, clear evidence of contamination, information on source strength, historical information about land use, geological maps, presence of water bodies, depth of groundwater, distance from inhabited areas, etc) are available:
- Sites at craft villages, industrial sites, or sites potentially contaminated by PCBs;
- Logistic related data (road, other transportation infrastructure, accessibility, etc.)

The above information will serve to drafting a provincial level site management plan which will contain:

- Identification of standard Risk Management Measures (RMMs) to be implemented at sites before cleanup implementation;
- Identification of resettlement needs deriving from the adoption of RMMs.
- Feasibility analysis and Identification of proper technologies for storage, disposal and cleanup of contaminated sites;
- A transportation plan for transporting waste generated from cleanup activities to centralized storage and disposal facilities;
- Preliminary assignment of Risk Management Measure and disposal / cleanup technologies to each site;

- Preliminary financial plan for the implementation of the PEMP, including preliminary assessment of the cost for site characterisation and cleanup for each site;
- Identification of sites for centralized collecting and storing waste generated by cleanup of contaminated sites
- Identification of areas for establishing centralized disposal facilities.
- Detailed time schedule for the implementation of risk reduction measures;
- Detailed time schedule for the implementation of cleanup activities;

The incremental activities carried out with the GEF support on Provincial Environmental Management Plan will ensure that the clean-up of sites contaminated by POPs is carried out with governmental funds timely, safely and in compliance with Stockholm Convention requirements. The project is, therefore, highly catalytic as it will support remediation activities, which are already scheduled and partially financed under the Decision 1946/QD-TTg regarding National Plan on treatment of contaminated sites.

Output / Activity 3.2.2. 50 technical and regulatory professionals from national level and 10 provinces will be trained on contaminated sites management, site assessment, risk reduction and remediation practice taking into account lessons learnt from GEF4 POPs projects.

Training will be arranged following a TOT scheme; initially only a limited number of trainers will attend the training; subsequently the trainers will be sent to local areas / villages where contaminated sites are located to train larger group of trainees.

Output / Activity 3.2.3 Measures taken for the public awareness raising, proper risk communication and participation, including involvement in reporting contaminated sites and POPs stockpiles, aimed at a better implementation of all risk management measures, risk reduction and emergency responses, and health and safety protection, with active participation of the population

Another key aspect aimed at the reduction of exposure to POPs is the proper communication of risk associated with POPs and countermeasures to be adopted at local level. Awareness raising will be ensured mainly by direct communication to be ensured by local communities after training, and by dissemination via the media which at the local level are the most effective (newspapers, television, internet).

Risk communication and awareness raising initiatives go hand in hand with the identification and implementation of risk reduction measures to be adopted at contaminated sites. Recognizing that in several sites, only exposure reduction measures can be adopted pending clean-up activities, and that in many other sites even the clean-up activity cannot ensure the immediate recovery or environmental media (water, soil) to their pristine state, there is the need to inform and involve the local population in the implementation of simple risk management measures that can bring their exposure down to safe level.

A non exhaustive list the most urgent aspects needing training and awareness raising at local level is provided below:

- Information on the environmental and toxicological properties of POPs, and where POPs may be found in chemical products or goods;
- Information on the risk associated with the use of old / obsolete pesticides;
- Information on the risk associated with the recycling of empty pesticide containers;

- Cost effective measures aimed at preventing water contamination and the safe use of water near contaminated sites;
- Measures aimed at the safe use / cultivation of crops in areas close to contaminated areas;
- Enforcement of fishing restrictions in waters contaminated or possibly contaminated by POPs;
- Visual identification of soil possibly contaminated by pesticides or POPs;
- Comprehension and enforcement of access restriction to contaminated areas;
- Use of PPEs;
- Emergency and first aid measures;

Component 4. National mercury baseline inventory and release reduction.

The achievement of this outcome will allow Viet Nam to establish a mercury management and reduction strategy, anticipating some of the requirements of the Minamata convention.

(1) Assessment of environmentally sound management of mercury wastes and releases (including initial inventory of emission sources, releases, wastes, contaminated sites, small gold mining, storage and monitoring capacity and health aspects

(2) Assessment on current management of Mercury related products and processes: it will include Hg supply sources and trade, Hg added products, manufacturing processes, Hg compound used.

Outcome 4.1. Mercury inventory results contribute to the development of awareness raising materials and the identification of national activities to implement Minamata Convention.

The Minamata convention website (www.mercuryconvention.org) makes available a number of publications on mercury which will constitute the starting point for the development of awareness raising material. In addition to that, specific awareness raising materials tailored to the Vietnamese situation as emerging from the outcome of the questionnaire survey will be developed (including a mercury awareness raising strategy) on risk associated to mercury, possible industrial and domestic sources of mercury, -free technologies and processes. The awareness raising material will be circulated and disseminated country wide by adopting the most suitable media.

This outcome will be achieved by the following activity:

Output / Activity 4.1.1 Identification of main industrial process which may lead to mercury release and of the relevant stakeholders.

The preliminary inventory source will cover an estimation of mercury from unintentional releases (i.e. atmospheric emission of mercury from combustion of coal), use of mercury in chemical plants (chloralkali processes, production of pesticides), emission from small gold mining, mercury containing waste.

Output / Activity 4.1.2 Questionnaire survey, process analysis, site visits for a number of possible mercury release sources-

A questionnaire aimed at establishing and consolidating a preliminary inventory of mercury source and release will be distributed to the main institutional and industrial stakeholders,

which will also help identifying training and awareness raising needs. The target audience for such data collection will include the following:

- Industries using coal (electric power plant, cement kiln, iron and steel)
- small and artisanal gold mining
- E-waste disposal facilities
- Other sectors (i.e., chloralkali plants, automotive, chemical industry).

Site visits including meetings to at least 10 industrial establishments considered to be main source of mercury (including small mining) will be carried out.

Output / Activity 4.1.3 Identification of main manufacturing products which may contain mercury. Based on international experience, this output is aimed at understanding the management of mercury-containing products on the side of production, import, export and potential exposure of consumers. Products listed under Annex A of the Minamata Convention, with the exception of health care devices, will be considered.

A database of products containing mercury available in the Vietnamese market or produced by Vietnamese industries will be developed. The data on products possibly containing mercury will be gathered by means of survey at production sites, questionnaire data collection, interviews with importers, customs and industries.

Output / Activity 4.1.4 Development of roadmap on sound mercury management. Based on the result of Output 4.1.1 to 4.1.3, a roadmap will be established for the reduction of mercury emission from industrial sources and for the management / replacement of products and goods containing mercury will be developed. This roadmap, in compliance with the Article 4 of the Minamata Convention, will include:

- An assessment of the content of mercury in raw material
- An assessment of environmental release of mercury from industrial sources
- An assessment of the content of mercury in each product category;
- An assessment of the current national policy for that product category;
- An estimation of the amount of products added with mercury by product category;
- Presence of alternatives and their relative market share by product category;
- A preliminary impact assessment for establishing air pollution treatment systems for the abatement of mercury emission;
- A preliminary impact assessment for replacing mercury added product in Viet Nam;
- Waste management implications
- Preliminary timeframe and budget for replacement of mercury added products.

Outcome 4.2. *Knowledge of Gov staff and public awareness of mercury sources and mercury releases/emission increased.*

Output/ activity 4.2.1: Information outreach workshops (2 nos) conducted to provide information on source and release of inventory.

This output will also include 2 information outreach workshop to in 2 different locations of the country to be selected after completion of the questionnaire survey to provide information on the Minamata convention, sources of mercury, free-mercury processes and articles and their

cost, safe disposal of mercury, management of mercury containing articles / waste. Participation of representatives from public authorities, industrial association and industry managers, mining, healthcare waste facilities and NGOs will be sought.

Country Ownership: Country Eligibility and Country Driven

Viet Nam ratified the Stockholm Convention on 22 July 2002, participated in SAICM in 2008 and signed Minamata Convention in 2013. It's therefore eligible to receive funding from UNDP and GEF.

The GoV is proactive in fulfilment of international conventions. In 2007, the GoV has approved and submitted the Viet Nam national implementation plan (NIP) to Stockholm convention Secretariat. Under the NIP, reduction and elimination of POPs, policy development and capacity strengthening for sound management of chemical are specified as top priority actions. Several priority actions (out of 15 national priority programmes on POPs) of the NIP that this project outcomes will contribute to include:

- **NIP priority 1:** Development and finalization of policies, legislation and institutions for POP management
Implementing agencies: Ministry of Natural Resources and Environment (MONRE)
Collaborating agencies: relevant ministries, sectors and PPCs
- **NIP priority 7:** Development of technical capacity for POP monitoring and analysis; establishment of the network of standardized laboratories for assessing pollution and impacts of POPs on human health and the environment
Implementing agencies: Ministry of Natural Resources and Environment (MONRE)
Collaborating agencies: relevant ministries, sectors and PPCs
- **NIP priority 12:** Strengthening capacity for managing and controlling the production, import-export, use and transport of prohibited chemicals including POPs in Viet Nam
Implementing agencies: Ministry of Industry and Trade (MOIT)
Collaborating agencies: General department of customs, MONRE, relevant ministries, and PPCs

The GoV has adopted a series of legal documents/policies promoting environmental protection and sustainable development, and expressing concerns on the need of improving POPs and chemical management. Such legal documents/policies include: 2005 law on environmental protection (LEP), Viet Nam National strategy on sustainable development period 2011 – 2020, National strategy on Environmental Protection by 2020 vision 2030, national target programme on Pollution Remedies and environmental Improvement (2011), etc., and

The GoV has signed in October 2013 the Minamata Convention on mercury management.

The One Plan 2012-2016 Outcome 1.4 is *"By 2016, key national and sub-national Agencies, in partnership with the private sector and communities, implement and monitor laws, policies and programmes for more efficient use of natural resources and environmental management, and implement commitments under international conventions"*

The outcome rational establishes, among others that *"The UN will assist Viet Nam to address these challenges, such as key support to formulate and enhance implementation policies, including green growth, policy advice on and support for developing enhanced mechanisms to promote biodiversity and greener production, technical advice on pilot technology for sound management of hazardous chemicals and treatment of POPs/contaminated soils, and support for enhancing capacity in water management."*

More specifically, output 1.4.3 will be “*Policies, plans and technical skills are strengthened for the sound management of hazardous chemicals and persistent organic pollutants (POPs), in accordance with international conventions*”.

Sustainability

The project will ensure sustainability of actions through 6 main pillars:

1) Regulation: sustainability of any activity addressed to implement the Stockholm Convention is first of all ensured by a clear, consistent and well enforcement regulation. Only in the presence of a regulation which is soundly enforced, the addressees of that regulation will be motivated to take the necessary actions to be in compliance.

By amending the necessary regulation in an integrated and consistent way (with specific reference to the classification of substances in the Law on Chemicals, the definition of POPs concentration in environmental quality standards, the management of POPs containing waste and the clear assignment of responsibilities, establishment of industrial sources, process and storage database) the project will ensure the sustainability of POPs reduction throughout all the activities related to import and production of chemicals, waste management, replacement of POPs with alternative substances, and cleanup of contaminated sites.

2) Enforcement and data availability. In Viet Nam, the issuance of new regulations was not always backstopped by the increase in data availability. To date, there is not a database of potential emission source available; database of manufacturing enterprises is not available, and the data are not updated, therefore in some cases is even impossible to plan site visits or inspections; database of industries storing hazardous chemicals or adopting hazardous processes which may generate POPs or PTS is also missing, as well as a proper tracking system for hazardous waste. Therefore, the development of PRTR capacity is intended not only for compliance with international obligations (like periodical reporting on POPs to the Stockholm convention secretariat) but also for facilitating the enforcement of the existing and new environmental regulation. A sound PRTR system will allow the government to know:

- Who is generating potentially harmful releases or transfers to various environmental media;
- What hazardous chemicals and/or pollutants are being released or transferred;
- How much is being released or transferred over a specific time period;
- What is the geographic distribution of the releases and/or transfers.

Once the information is correctly stored and organized in the PRTR system, and the procedure for updating the data is in place, the government authorities will have the tool for an effective enforcement and monitoring of the relevant regulation. It will be also easy to establish quantitative targets on the reduction of POPs and to establish risk-based priorities.

3) Demonstration of guidance on site assessment and remediation design. The project will ensure sustainability of the activities related to the remediation of contaminated sites by developing in the Nghe An province and Binh Duong provinces, a provincial level remediation management program, which will systematize, create synergies and resource saving, and prioritize on the basis of risk assessment criteria, the site remediation and the selection of clean-up technologies, bringing in addition an innovative approach which rely on awareness raising and involvement of local communities for the risk reduction at small contaminated sites.

4) Management of Mercury. In addition, by performing a preliminary inventory of mercury sources and releases, the project will pave the way for plan for mercury phase-out and

identification of alternative processes and substances, taking in due care sustainability of actions from the technical, economic and social standpoint.

5) The project will also ensure sustainability through awareness raising activities: only when the stakeholders (not only those directly interested, but also the general public and the consumer) are aware at the benefit brought by the elimination of POPs substances, there would be enough pressure on the authorities to ensure enforcement of the legislation. Awareness raising, therefore, is not a public relation exercise, but is one of the key which will be used by the project to ensure the future sustainability of the project activities.

6) On financial and governance sustainability, it should be noted that the Government of Viet Nam is highly committed to ensure the sustainability of actions aimed at reducing and phasing out POPs. There is an increased country commitment and ownership on the issue of POPs contaminated sites testified by the recent approval of the National Target Plan, which is dedicating a substantial amount of technical and financial resources to the issue of POPs waste and contaminated site. In December 2010, the Government of Viet Nam issued the decision 1946 /QĐ-TTg, "Approving the Plan to treat and prevent environmental pollution caused by pesticides stockpiles all over the nation". In September 2012, the National Target Program, signed by the Government with the decision 1206/QĐ, allocated 1010 billion Vietnamese Dong (48.475 million USD) for the disposal of obsolete pesticide and clean-up of sites contaminated by pesticides

Replicability

One of the main project objectives is to develop a number of environmental quality standards, guidance document on risk assessment and site assessment, guidance document on technology selection criteria that will ensure replicability and standardisation of activities in the country.

The project, rather to seeking replicability of its specific output and activities, intends to establish a consistent and standardised framework which will ensure that current and future activities on site clean-up, soil treatment, chemical management (incl. registration) are carried out in a scientifically sound and standardized way, which therefore will be highly replicable.

Global Environmental Benefits

Successful implementation will allow streamlining the Stockholm Convention on POPs in two key regulations in Viet Nam (the Law on Environmental Protection and the Chemical Law) by the integration of the relevant secondary legislation, and to establish procedures and structure for its enforcement, mainly by the creation of a PRTR system, with obvious global environmental benefits.

The pilot PRTR database will cover at least 10% of the U-POPs emission of the country allowing practical implementation of BAT/BEP for U-POPs reduction and sound implementation of chemical management, preventing the use of POPs in manufacturing, establishing reporting obligation for hazardous waste containing POPs, creating inventories of storage of hazardous chemicals. The successful implementation will also ensure that POPs contaminated sites will be managed in a consistent manner preventing release of POPs and paving the way for a smooth implementation of clean-up activities, based on sound risk assessment criteria, for at least 10 POPs contaminated sites of high priority. On the mercury side, the project will accelerate the ratification of the Minamata convention by the country and will ensure that a sound management plan for the reduction of mercury used is established.

Results Framework

The proposed Strategic Results Framework (SRF) is summarized in the Logical Framework Matrix in Section II Part II.

Incremental Reasoning

As detailed in the Baseline analysis and in the Baseline project of this project document, several activities aiming at establishing sound management of chemicals are ongoing in Viet Nam; at the same time, a certain number of GEF projects are already providing assistance to the countries in sensitive activities like the assessment and clean-up of POPs contaminated sites, remediation and demonstration of technologies for Dioxin contaminated hotspots, PCBs management, sound management of healthcare waste. A PRTR circular is being drafted by VEA; a circular on occupational safety is at initial step - review by Department of Occupational Safety (MOLISA). A substantial capacity for testing dioxin and pesticides in soil has been implemented in the last year. All these activities testify the outstanding commitment of the Vietnamese government in improving environmental regulation.

However, these activities are being carrying out separately under different Ministries without the necessary coordination for ensuring that the requirements of the Stockholm Convention are properly enforced. The project will be catalytic in ensuring that SC requirements (for instance, banning of POPs substances including new POPs; concentration limits for waste to be land filled; maximum allowable concentration in environmental matrixes; DE/DRE evaluation of disposal facilities) are considered and properly implemented anytime a new regulation or procedure is drafted.

Without the project, there is no guarantee that environmental limits and targets with special reference to POPs will be decided following a sound risk-assessment procedure, based on hazard characterisation, exposure assessment, risk quantification. This may lead in one case to too permissive limits and in other cases to overambitious limits which cannot be practically implemented. The issue is particularly serious for contaminated sites for which the Stockholm convention does not set specific standards. The project will build on the significant experience achieved under the previous POPs projects being concluded in Viet Nam, (mainly the “Dioxin hotspots” and the “POPs pesticide” projects which demonstrated the implementation of clean-up activities in POPs contaminated sites, and which provided key technical and regulatory tools for the development of environmental management plan, site clean-up, storage and disposal of POPs contaminated soil.

In addition to upgrading the regulatory framework, the project will also ensure that concrete steps on enforcement are worked out, basically by making data on POPs and PTS sources available and by assigning clear responsibilities on gathering and managing data relevant to POPs and PTS sources. In this context, under the PRTR related activities, a set of databases will be established and made available to the control authorities to facilitate enforcement of the environment related laws, planning for POPs and PTS reduction, ensuring emergency response, prioritization of industrial sectors for the adoption of BAT/BEP.

Without the project, there will be a synthesis and harmonisation of the site assessment as well as the technology selection and testing criteria which have been so far implemented in the UNDP/GEF and governmental projects related to the cleanup of POPs contaminated sites. The project will therefore establish a platform for drafting an official guidance on site assessment and technology selection, which will be demonstrated in a number of POPs contaminated sites.

Although the implementation of remediation/clean-up activities is beyond the scope of this project, by demonstrating the proper site assessment, clean-up design and technology selection in a number of sites, it will be possible to ensure that the remediation activities which will be

subsequently implemented at that sites will achieve significant and practical goal in term of reduction of POPs in the environment.

Based on the data available on POPs contaminated sites, it is possible to anticipate that the provincial site management plan will cover

- around 270 sites in the Nghe An province, out of which around 51 have been identified as POPs contaminated sites;
- all the contaminated sites found from the survey which will be conducted in industrial sites in the Binh Duong province.

It should be stressed that until now, no activity aimed at addressing the issue of industrial sites contaminated by POPs has been undertaken. There are, however, evidences that as much as 5000 tons year of ashes contaminated by PCDD/F may be unsafely disposed; in addition, it is known that a large part of the over 300 tons/day of hazardous waste is dumped without significant environmental protection. Without the project, a plan addressing the issue of POPs contaminated sites in industrial settlement would not be drafted and no resource would be allocated. For the Nghe An provinces, considering that new contaminated sites are continuously identified, it is reasonable to expect that the provincial clean-up plan would cover an amount of POPs contaminated materials (stockpile, soil, waste) of around 1350 tons (an average of 5 tons for each site identified based on previous experience)

The provincial plans, including risk management measures and release prevention design will speed up and increase the remediation and disposal of a large amount of POPs waste and soil contaminated by POPs, which will be properly treated, contained or disposed once the risk reduction measures have been implemented. This is particularly crucial considering that funds for practical remediation activities in the period 2015-2020 have been already allocated by the government, but a site management plan inclusive of clean-up criteria, technology selection, and implementation timeframe is still missing.

On mercury, although a limited activity on mercury inventory has been carried out, without the technical and financial assistance of the project, this will be limited in the scope and will not result in a mercury management plan as required by the Minamata convention.

The project will therefore bring substantial global benefit as it will establish a sustainable management system for the reduction of POPs and the removal of POPs from contaminated sites, which will therefore go well beyond the demonstration at specific sites

Co-financing

The project is building upon work being conducted by the government of Viet Nam and / or funded by international organizations with national partners. Commitment has been expressed by the relevant national authorities (MONRE, MOIT) on behalf of the Government in ensuring continuity of action, in kind and cash co-financing along the project implementation.

The project will also rely on coordination with a bilateral project on Sound Management of Chemicals which is currently starting with the support of JICA to build up a chemical database.

III. PROJECT RESULTS FRAMEWORK:

This project will contribute to achieving the following Country Programme Outcome as defined in UN ONE PLAN III (2012 – 2016):

- OP III Outcome 1.4: By 2016, national and sub-national Agencies, in partnership with the private sector and communities, implement and monitor laws, policies, and programmes for more efficient use of natural resources and environmental management, and implement commitments under international conventions.

Country Programme Outcome Indicators:

- OP III Indicator 1.4.3: Number of tones of (POPs—obsolete pesticides, pesticide contaminated soils and dioxin contaminated soil - contained and remediated in accordance with international environmental requirements

Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 1. Mainstreaming environment and energy OR 2. Catalyzing environmental finance OR 3. Promote climate change adaptation OR 4. Expanding access to environmental and energy services for the poor.

Applicable GEF Strategic Objective and Program:

- Objective CHEM -1: Phase out POPs and reduce POPs releases
- Objective CHEM -3: Pilot sound chemicals management and mercury reduction

Applicable GEF Expected Outcomes:

- Outcome 1.4: POPs waste prevented, managed, and disposed of, and POPs contaminated sites managed in an environmentally sound manner;
- Outcome 1.5: Country capacity built to effectively phase out and reduce releases of POPs. Pilot sound chemicals management and mercury reduction
- Outcome 3.1: Country capacity built to effectively manage mercury in priority sector
- Outcome 3.2: Contribute to the overall objective of the SAICM of achieving the sound management of chemicals throughout their lifecycle in ways that lead to the minimization of significant adverse effects on human health and the environment

Applicable GEF Outcome Indicators:

- Indicator 1.4.1: Amount of PCBs and PCB-related wastes disposed of, or decontaminated; measured in tons as recorded in the POPs tracking tool.
- Indicator 1.4.2: Amount of obsolete pesticides, including POPs, disposed of in an environmentally sound manner; measured in tons.
- Indicator 1.5.1: Progress in developing and implementing a legislative and regulatory framework for environmentally sound management of POPs, and for the sound management of chemicals in general, as recorded in the POPs tracking tool.
- Indicator 3.1.1: Countries implement pilot mercury management and reduction activities.
- Indicator 3.2.1: Countries implement SAICM relevant activities that generate global environmental benefits and report to the International Conference on Chemicals Management

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
<p>Project Objective</p> <p>Continued reduction of environmental and health risks through POPs, mercury and harmful chemicals release and exposure reduction achieved by provision of an integrated institutional and regulatory framework</p>	<ul style="list-style-type: none"> - Progress of POP/PTS regulations developed and integrated into the newly established legal framework in Viet Nam, and in compliance with requirement of the Stockholm and other relevant international conventions - Level of institutional capacity strengthened to manage, monitor, and remediate POP/PTS, including Mercury - Level of environmental and health risks reduction. 	<p>SC requirements are not yet completely integrated in the existing regulation on chemicals/POP management.</p> <p>Lacking of a comprehensive POPs/PTS Management Information System following a PRTR Scheme which prevent good planning and reporting</p> <p>Limited national capacity and knowledge on industrial contaminated site management.</p> <p>A substantial experience has been achieved from bilateral and GEF POP/chemical related projects. However the results are still project based, not well integrated to support the GoV having a comprehensive regulation system on POPs/PTS management.</p>	<p>Policy framework for chemicals/POPs management improved meeting with the Stockholm Convention and other related international conventions, and expressing close links between environmental protection policy with chemical management policy.</p> <p>National Monitoring capacity improved to track POPs/PTS including mercury</p> <p>A POPs tracking tool , database and PRTR system established and demonstrated in at least one province</p> <p>Establishment of provincial – level planning for the clean-up of POPs contaminated sites in two provinces.</p>	<p>Documents of the developed regulations/guidelines</p> <p>Monitoring related documents</p> <p>PRTR database system at the two piloted provinces</p> <p>Mercury inventory database and related reports</p>	<p>The project steering committee which comprises the representative of various ministries/state agencies helps to addressing project problems</p> <p>Well established PMU will ensure effective implementation of the project activities on schedule</p> <p>Experienced and professional experts are engaged in the implementation of the project activities</p>
<p>Project Component 1.Policy framework for sound chemicals management, including POPs/PTS developed and implemented.</p>					
<p>Outcome 1.1. Overall policy framework and specific regulatory measures covering environmentally sound management of POPs and PTS through life cycle management developed and</p>	<p>Availability of regulations in Viet Nam integrated to take into account in a consistent way the requirements of the Stockholm Convention on POPs</p> <p>Availability of a regulatory framework to</p>	<p>The existing national regulations on chemicals are based on the GHS and include provisions of international conventions. However the existing regulations are not fully compliant with the SC requirement still fragmented and not fully</p>	<p>The key regulations in Viet Nam are integrated to take into account in a consistent way the requirements of the Stockholm Convention on POPs.</p> <p>A regulatory framework to ensure monitoring and reporting of POPs is established,</p>	<p>Regulatory improvement plan report and related approval documents.</p> <p>Text of proposed and adopted regulatory instruments on POPs an mercury,</p> <p>Text of proposed and adopted regulatory</p>	<p>Risks:</p> <ol style="list-style-type: none"> 1) Lack of coordination of the relevant institutions and ministries 2) Conflicting objectives of different ministries / stakeholders which may render difficult the negotiation for upgrading regulation on POPs. 3) Lack of commitment of relevant

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
implemented.	ensure monitoring and reporting of POPs is established,	harmonized due to issue by different Ministries. Provisions of new POPs as required by the SC are also not yet included in the chemical and environment policy framework		instrument on PRTR. Minute of meetings, conferences and workshop.	stakeholders. 4) Timing and complexities of procedures for the examination, voting and adoption of new technical regulations.
Outputs for outcome 1					Assumptions:
Output 1.1.1 Detailed review and gap analysis of Laws on Chemicals and Environmental Protection with respect to coverage of POPs, PTS and environmentally damaging chemicals management including mercury, conducted. A regulatory improvement plan developed.	Completed and comprehensive gap analysis. Completed and approved regulatory improvement plan	A thorough analysis of the downstream laws and regulation affected by the POPs convention and their relationship has never been carried out. Environmental protection and chemical safety policies are not well linked. Risk assessment criteria are absent in the POP/PTS legislation and guidelines	Gap analysis completed within 12 months from project starting. Regulatory improvement plan completed and submitted within 14 months from project starting.	Intermediate and final review reports of gap analysis Regulatory improvement plan Minutes of meetings, consultation workshops reports, etc. Formal acts related to the submission/ approval of the regulatory improvement plan	1) 2) and 3) Coordination and solution of conflicts among different stakeholders may be solved by involving them in the project steering committee and/or in specific project activities and establishing a well staffed PMU for project management. A “POPs regulation coordination office” will be established at MONRE which will interact with PMU and will coordinate with all governmental bodies involved in regulatory work. 4) The selection of the proper procedure and type of regulatory instruments (i.e. decree instead of laws, or official guidance documents annexed to existing laws) for POPs – related legislation will ensure that regulation is adopted within project deadline.
Output 1.1.2 Regulation applicable to the Stockholm Convention amendments on “new” POPs including bans where not yet in place, developed.	Number of new or upgraded regulatory acts to take into account in a consistent manner the provisions of the SC convention on POPs, with respect to the overall number of relevant regulatory tools identified in the gap analysis and regulatory improvement plan.	Some provisions of Chemical Law and its secondary regulations are not fully compliant with the SC. The new LEP mentions in general toxic, persistent and accumulative chemicals but not specifically POPs.	The key regulation/s (Law on Environmental Protection, Law on Chemicals, Waste regulations, Pesticide law) or their associated norms are amended for compliance with the SC requirements.	Text of new or amended regulatory instruments. Formal acts related to the approval / submission of regulatory instruments.	
Output 1.1.3 Enacted legal instrument in the form of amended Laws	Same as for output 1.1.2	Regulations from different sectors are not integrated each other and there is the	By the end of the project, an integrated legal document in the form of decree or circular developed/amended to	Text of new or amended regulatory instruments. Minutes of meetings,	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
or Decrees/regulations defining linkage between these laws and the regulatory instruments in place .		need to upgrade and harmonize the regulatory system (chemical, agrochemicals, environment, waste, occupational health, consumer exposure) not only to include provisions of the SC convention on POPs, but also to better integrate SAICM and the risk management approach into the environmental related legislation	coordinate the enforcement of SC provisions among different Ministries.	consultation workshops Formal acts related to the approval / submission of regulatory instruments	
Output 1.1.4 Guidelines integrating environmental control of POPs and PTS within the overall chemicals management framework, including coverage of: i) general environmental protection for chemical activities, ii) scheduled wastes containing toxic chemicals, iii) environmental emergency and response, environmental risk assessment of waste containing toxic chemicals methodology, iv) health risk assessment for chemical wastes procedures.	Existence/availability of technical guidelines on POPs/PTS covering environmental protection and chemical safety following their life cycle management	POPs Guidelines which only cover limited sectors (PCBs, Dioxin contaminated sites, POP pesticide stockpiles) are under preparation and have not been officially adopted yet. Presently there exist only requirement for “Environmental emergency preparedness and response to chemical incidents” for industrial sector. The requirement is still absent in other sectors. Environmental protection requirement are not well integrated under the overall chemicals management framework; poor sound management of chemicals including scheduled wastes containing toxic chemicals	A comprehensive technical guideline developed covering : i) general environmental protection for chemical activities, ii) scheduled wastes containing toxic chemicals, iii) environmental emergency and response, environmental risk assessment of waste containing toxic chemicals methodology, iv) health risk assessment for chemical wastes procedures	Intermediate and final draft of the technical guideline Minutes of meetings, report of consultation workshops Formal acts related to the adoption of the technical guidance document	
Output. Establishment and enforcement of the	Regulatory tool for the implementation and	Poor data on chemicals and POPs/PTS that disturbs	By the end of the project, a circular drafted and submitted to GoV for	Training need assessment report	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
regulatory framework for POPs/ PTS tracking tool and a PRTR system through support in drafting the PRTR regulation, by establishment of an inter-ministerial coordinating group on PRTR regulation, Integrating POPs / PTS requirement in the database design, drafting guidelines for PRTR enforcement and implementation	enforcement of POPs / PTS reporting and PRTR established	their management planning and reporting. Yet existing data of chemicals, POPs/PTS are not consistent among state management agencies A database system for POPs/PTS management is very poor or not existed at both national and local level.	approval related to implementation and enforcement of POPs monitoring and PRTR system to ensure sustainability of the PRTR related activities carried out under Outcome 2. Demonstration of an Information Management System to support PRTR.	Training materials. Training reports (pre-selection, pre- and post-training evaluation, training feedbacks, final tests)	
Outcome 1.2 Key institutions have knowledge and skills to formulate and implement necessary chemicals and environment policies, consistent with sound chemicals management principles and international convention requirements	Achievement of active participation of Viet Nam in the ICCM / SAICM. Evidences of increased adoption of chemical risk assessment criteria in law-making and decision making. Number of institutions / staff successfully trained. Availability of market based policy in one or two sectors relevant to POPs.	A certain number of POPs training initiatives have been carried out and is being carried out in the framework of previous GEF4 projects There is the need to build on the experience of these training activities and to establish a training system which consistently increase capacity on POPs, management of hazardous chemicals and hazardous waste in the perspective of ensuring consistency and coordination of environmental related regulation with SC.	By the end of the project Viet Nam has consolidated its participation to ICCM / SAICM to benefit for international knowledge and have its issues and arguments on chemical management brought at the international level. A procedure for risk assessment is adopted in law-making and decision making processes related to chemicals and hazardous waste. Relevant institution skills on POPs management, risk assessment, international regulation on chemicals and their relationship with Vietnamese situation increased by means of certified training. A market based policy on waste and chemicals management and public / private partnership established.	Minute and proceedings of the International Conference on Chemicals,, text of speeches and presentations of the Vietnamese delegation. Text of the national procedure on management of chemicals. Training material, training minute, outcome of pre and post assessment of the participants. Preliminary and final reports on the implementation of market based policies; Text of rules / norms related to market based policies in sectors relevant to POPs	Risks 1) Lack of coordination of the relevant institutions and ministries 2) Conflicting objectives of different ministries / stakeholders which may render difficult the coordination for a procedure on risk assessment . 3) Lack of commitment of relevant stakeholders. 4) Training effectiveness limited or not properly assessed due to limited participation or limited quality control. 5) Complexities related to the establishment of a public/private partnership, or no market for services in the POPs sector. Assumptions: 1) 2) and 3) Coordination and solution of conflicts among different stakeholders may be solved by involving them in the project steering committee and/or in specific
Outputs for Outcome 1.2					
Output 1.2.1 Active	Number of government	GoV has limited	By the end of the project 2	Speeches/ presentations/	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
participation of Viet Nam in the International Conference on Chemicals Management.	officials who actively participated in ICMMs	opportunities to participate into ICCM conference.	representatives of GoV participated in ICCMs (for 2 years) to provide GoV more opportunities to exchange and discuss on country specific issues of chemical management.	articles prepared by the Vietnamese participants. BTORs (Back to Office Reports) of the delegation.	project activities and establishing a well staffed PMU for project management. A “POPs regulation coordination office” will be established at MONRE which will interact with PMU and will coordinate with all governmental bodies involved in regulatory work.
Output 1.2.2 30 representatives of VEA, VINACHEMIA, Department of Water Resources Management, national customs authorities and industrial stakeholders trained in implementation of chemicals classification and labelling in global harmonized system and adaptation of the EU REACH/ROSH approach for application in Viet Nam	Number of professionals successfully trained on implementation of chemicals management with specific reference to POPs in downstream legislation, GHS and EU legislation on chemical management.	Limited capacity on chemical classification and labelling following international approaches Very limited and uncoordinated training on POPs regulatory issue, and in the interconnection of Viet Nam chemical management with international regulation performed..	By the end of the project, at least 30 professionals from various government agencies (VEA, VINACHEMIA, Department of Water and Resource Management, national customs authorities, etc.) trained on the implementation of chemicals management with specific reference to POPs in downstream legislation, GHS and EU legislation on chemical management.	Text of the national procedure on management of chemicals. Training reports (pre-selection, training material, training feedbacks, final tests)	4) To access the training session on site assessment and cleanup standards, candidate will have to pass an initial test which will serve also as baseline; and a final test, which will demonstrate the progress achieved and hence effectiveness of the training. The trainees passing the final test will receive an official certificate issued by (identify) . The above will ensure at the same time willingness to attend training course and quality/effectiveness of the training
Output 1.2.3. Strengthened application of chemical risk assessment approach for environmental and health risk assessment and release reduction enforcement including training of 30 professionals from VEA, VINACHEMIA and Ministry of Health will be implemented.	Evidences of increased adoption of chemical risk assessment criteria in law-making and decision making. Number of professional trained on implementation of national procedures on risk assessment and management of chemicals.	Risk assessment criteria are not consistently adopted in decision making and law-making processes. A procedure for taking into account risk assessment criteria on chemical management is missing. So far training on risk assessment limited to specific issues (e.g. contaminated sites)	By the end of the project: Guidance on risk assessment and training material for chemical environmental and health risk assessment and release reduction adopted; At least 30 professional from VEA, VINACHEMIA and Ministry of Health trained on risk assessment and implementation of national procedures on risk assessment and management of chemicals, with specific focus on POPs and new POPs.	Document of the adopted common national procedure. Training reports (pre-selection, pre- and post-training evaluation, training material, training feedbacks, final tests)	5) Market based policies will be developed since the very starting of the project, on sectors where the effectiveness on POPs reduction is higher and sustainability is more likely (for instance, POPs contaminated sites or sampling/analysis activities where a substantial amount of governmental funding already exist) so that the risk of failure is minimal
Output 1.2.4 Market based policy initiative developed to promote reduction in POPs releases and POPs	-Market based policy initiative in place to promote hazardous chemicals / hazardous waste management.	Weak compliance and enforcement of legislation on environmentally sound chemical and hazardous waste management leading	Within the first year of the project a market based policy initiative aimed at ensuring sustainability of hazardous waste and hazardous chemicals management developed and approved,	Draft and final text of the market based policy instrument on waste and/or chemical management. Signed public private	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
disposal through development of national POPs management service provider capability on a commercial basis through private public partnerships	Private / public partnership on the matter established/developed.	to increasing in chemical incidents and environmental pollution. Market based mechanisms are not sufficient and attractive enough for private sectors to involve in SCM and/or environmental friendly management of hazardous waste	and - By the end of the project, a public private partnership for the reduction or monitoring of POPs releases and for promoting POPs disposal established and operational.	partnership agreement on chemical and/or waste management.	

Component 2. Monitoring and report of POPs and PTS

Outcome 2.1. National institutions provide comprehensive and coordinated ambient environment and receptor POPs /PTS monitoring that is consolidated into a national database and utilized for high quality reporting to the GoV/National Assembly and the Convention.	National POPs/PTS monitoring capacity assessed and POPs/PTS monitoring program upgraded to ensure POPs/PTS tracking	POPs Monitoring capability increased in the last years thanks to governmental initiatives, support of international donors, and GEF projects related to Dioxin contaminated sites, POP pesticide stockpiles, PCBs. However, the monitoring capability on U-POPs emitted from industrial sources and other POPs is still very limited. Existing POPs laboratories are mainly dedicated to sampling and analysis of POP pesticide, PCBs. Some labs are able to sample and analyze Dioxin. A target level for PCDD/F has been established in the course of the ongoing GEF project on Dioxin contaminated hotspot.	<ul style="list-style-type: none"> - POPs/PTS baseline established for ambient environment (air, water, soil) and receptors (human, biota, food) - At least two laboratory accredited for monitoring of new POPs and PTS and integrated in an intercalibration network of laboratories - An upgraded POPs/PTS monitoring programme submitted for GoV approval 	<p>POPs/PTS baseline reports</p> <p>Reports assessed abilities of labs able to monitor and analyse POPs/PTS</p> <p>Document of upgraded POPs/PTS monitoring programme</p>	<p>Risks</p> <p>1) Agreement among stakeholders on baseline and environmental quality targets not achievable within the project timeframe.</p> <p>2) Scientific complexity of establishing baseline and environmental standards for monitoring reference is too high to be addressed within the project timeframe.</p> <p>Assumptions.</p> <p>1) The establishment of a sound PMU with high skilled professionals, together with assistance from national and international experts, in cooperation with representatives from all the relevant governmental, non-governmental and private stakeholders will ensure that agreement on the matter will be achieved within project deadline, and that data validation of the existing information is carried out in the proper way.</p> <p>2) The work on ambient environment and receptor POPs and</p>
Outputs for Outcome 2.1					

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Output 2.1.1 ambient environment (air, water, soil) and receptor (human, biota, food) POPs and PTS baseline established against which future monitoring can be measured and reported.	Availability of baseline information for POPs and PTS (mercury) established on a risk-assessment basis.	The absence of environmental quality standards in many sectors limits the monitoring effectiveness and relevance. There exist baselines for some POPs (POP pesticide, dioxin in contaminated sites, PCB, uPOP in some industries, etc.) and PTS	A Baseline for all POPs and PTS (mercury) established for ambient environment (air, water, soil) and receptors (human, biota, food), based on the collection and review of existing baseline and risk-based standards.	Draft and final POPs and PTS baseline reports.	mercury baseline and environmental quality standard will build on international existing standards already set by authoritative agencies (WHO, USEPA, ECHA), and adapted to Viet Nam. By recruiting experts and establishing a strict cooperation with relevant stakeholders, it will be possible to identify within project framework a scientific and sustainable set of environmental quality standards for all POPs and for mercury.
Output 2.1.2. Inventory of ambient environment and receptor monitoring capability including a gap analysis identifying where strengthening is required.	Assessed and comprehensively inventoried monitoring capability, identified monitoring needs of POPs in key areas .	A detailed survey of POPs laboratory is missing. Existing POPs laboratories are mainly dedicated to sampling and analysis of Dioxin contaminated sites, POP pesticides and sampling/analysis of PCBs.	Selected laboratories will be able to monitor and analyse various POPs and PTS formulated to provide information on: <ul style="list-style-type: none"> • Sampling capacity and equipment for both environmental media and industrial sources; • List of POPs that can be analyzed with respective analytical methods; • List of POPs analyzed in the preceding years and respective analytical methods; • Number of certified professionals working at each lab; • Current accreditation; • Participation in national or international intercalibration. • Etc. 	Database containing survey of POPs / PTS monitoring capability in Viet Nam. Draft and final POPs / PTS survey reports of monitoring capability of Viet Nam	
Output 2.1.3 Upgraded monitoring programs in key areas where strengthening is required, developed.	Number of developed and approved plan, with allocation of governmental resources, monitoring program of POPs in key areas.	No POPs monitoring program existing. Monitoring data of PCDD/F and for some pesticides made available under current GEF or bilateral projects.	An official POPs monitoring program will be developed, with the aim to ensure monitoring of POPs nationwide in the following sectors: <ul style="list-style-type: none"> • POPs in ambient environment (air, water, soil) • POPs in receptor (human, biota, food) • U-POPs released from industrial 	Draft and final POPs monitoring program, Official documents related to the approved of the monitoring program and allocation of funding by GoV.	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
			sources.		
Outcome 2.2 National POPs/PTS laboratory network for support of ambient environment and receptor monitoring certified/accredited.	- Availability of accredited laboratories on new POPs integrated in a POP/PTS laboratory calibration network. Level of piloting PRTR at provincial level	A certain number of private or public laboratories having capability to perform sampling and analysis of POPs (Dioxin, PCB, POP pesticides, etc.) is working. Some of the above have participated in round-robin tests. However there are no national official analytical methods on the determination of POPs. Also a national plan for accreditation and certification of these labs to international standards is missing	- Two key laboratories on POPs analysis accredited following ISO 17025 and associated accreditation schemes - Up to 80 laboratories technicians and government staff trained on POPs monitoring related activities following international standards and requirement - A POPs/PTS database established to contain data related to industrial sources, and POPs contaminated sites in 2 provinces, and all the country-wide available data on POPs environmental monitoring.	Accreditation plans and certificates Training material, training minute, outcome of pre- and post- assessment of the participants, final test and certificate POPs/PTS database, PRTR reporting system, database and PRTR final and intermediate reports.	
Outputs for Outcome 2.2					
Output 2.2.1 Up to 2 laboratories accredited to international standards to support POPs/PTS monitoring	Number of laboratories accredited to international standards	A national official scheme for the accreditation of laboratories does not exist – international accreditation and inter-calibration mostly voluntary.	- At least 2 laboratories accredited to international standards on the adoption for sampling and analysis on new POPs and PTs, following relevant ISO procedures (i.e. ISO/IEC 17025) and integrated into a laboratory calibration network; - Up to 40 laboratory technicians received updating training	Applications for accreditation. Quality Manual, Management system and internal audit reports. Accreditation surveillance reports. Accreditation certificates.	Risks 1) Unavailability of data, or difficulties in data validation due to different sampling and analytical methodologies and lack of information on monitoring condition 2) Data owners unwilling to share data and relevant source and monitoring information.
Output 2.2.2 Up to 40 relevant national and provincial government staff will be trained on POPs/PTS monitoring and reporting following international standards	Number of laboratory staff successfully trained on POPs / PTS monitoring	Limited training provided to laboratory staff on POPs sampling and monitoring, and mostly of the trainings are within ongoing bilateral / GEF projects.	- Up to 40 relevant national and provincial government staff trained on POPs/PTS monitoring and reporting following international standards and requirements.	Pre-training selection, Pre- and post- training evaluation Training materials and report, training tests, etc.	3) Laboratories unwilling to participate in accreditation program, and/or unwilling to share data on their capability, equipment, methodology, technical capacity. Assumptions

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
and requirements					
Output 2.2.3 A POPs/PTS database developed at provincial level and PRTR reporting system operational and linked to the POPs tracking tool and data submitted to Convention Secretariat.	Availability and coverage of a functional POPs/PTS database and PRTR reporting system for POPs / PTS deriving from industrial processes, storage, contaminated sites, and POPs / PTS monitoring data	A POPs monitoring database is missing. Data related to industrial sources is generally obsolete and does not allow for an effective control and authorisation of industrial emissions.	<p>A PRTR reporting system and associated database covering:</p> <ul style="list-style-type: none"> data for industrial sources in Binh Duong responsible to at least 20% of the priority sources in the province; all POPs monitoring data available countrywide; POPs from inventory contaminated sites. 	<p>POPs/PTS tracking tool;</p> <p>PRTR reporting system and associated database;</p> <p>Preliminary and final activity reports</p>	<p>1) Although it is expected that there will be substantial data gaps on monitoring data, by starting from areas where monitoring data are more reliable and complete, and relying on existing guidance on POPs, it will be possible to set methodologies and standards for the establishment of a database structure and a reporting system covering all POPs and environmental sectors.</p> <p>2) The drafting, communication, and enforcement of the PRTR circular, linked to permitting and licensing of industrial activities, will ensure willingness of stakeholder to communicate the relevant information. The majority of laboratories are governmental institutions or private/public laboratories working within governmental projects; their interest in sharing data will be ensured by directly involving them in project activities.</p> <p>3) By providing assistance and training on accreditation and certification scheme to labs-their interest in joining an accreditation scheme – otherwise missing substantial business opportunities in the future – will be insured.</p>

Component 3. Management of POPs contaminated sites

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Outcome 3.1 Key policies, regulations and technical guidelines for	Availability of policies and guidelines on POPs contaminated sites management developed	In the country a number of separate initiatives on the management of contaminated sites are	A broad policy and guidelines, established to support the implementation of legal and regulatory framework developed in component 1	Text of adopted regulations for contaminated site management.	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
management of POPs contaminated sites are in place	and enforced,	<p>being carried out by governmental institutions, international donors, or under GEF projects.</p> <p>These effort are however still fragmented (project base) and not yet capitalized into a harmonized system of laws and guidance.</p> <p>The National Target Programme on Pollution Remedies and Environmental Improvement (approved in 2011) sets an objective by 2015 to recover environment at 100 sites seriously contaminated by POP pesticide stockpile</p>	for contaminated sites management.	<p>Text of risk assessment procedures and guidelines.</p> <p>Consolidated inventory of POPs contaminated sites.</p>	
Outputs for outcome 3.1					
Output 3.1.1: Supporting regulations and standards for contaminated sites covering requirements for: i) contaminant levels to trigger action, contaminant POPs levels; ii) future land use cleanup level requirements for POPs contamination in soil and water; iii) reporting; and iv) care/custody and liability assignment, developed.	Availability of guidelines for supporting the enforcement of standards and regulations developed under Component 1 for contaminated sites drafted and adopted.	<p>Technical regulations have been adopted by the GOV for soil contaminated by dioxin and POP pesticide under GEF4 projects' support</p> <p>No standardized reporting system existed in the country for POP contaminated sites</p> <p>The guidelines for management of contaminated sites (EMP) are developed by on-going POP pesticide project for specific POP pesticides contaminated</p>	<p>Further technical regulation for industrial POPs for which cleanup target levels in soil are needed will be established.</p> <p>- .</p>	<p>Draft and final text of supporting guideline and standards,</p> <p>Official acts related to the adoption of such regulations.</p>	<p>Risks:</p> <p>1) Scientific complexity of establishing risk management methodologies and cleanup standard is too high to be addressed within the project timeframe.</p> <p>Assumptions</p> <p>1) Scientifically sound risk based methodologies and cleanup standards have been developed and extensively tested by a number of authoritative international institutions, and are continuously upgraded. Rather than developing new methodologies and standards,</p>

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
		sites.			the work on risk assessment and cleanup criteria will build on international existing standards and methodology by establishing cooperation / contacts with the relevant international institution who developed these standard. (WHO, USEPA, ECHA, ISO, ASTM), and adapted to Vietnamese specific situation where necessary and feasible. By recruiting international and national experts with outstanding experience in the field, in strict cooperation with relevant stakeholders, it will be possible to identify within project framework a scientific and sustainable set of risk based standards and methodologies for all POPs and for mercury.
Output 3.1.2 Risk management procedures and guidelines for contaminated sites developed.	Availability risk management procedures and guidelines for contaminated sites developed	Risk management procedures have been developed for POPs pesticide storage site. Building on this experience there is the need to develop and adopt similar procedures for POPs contaminated sites	<p>Within one year from project starting, risk management procedures for POPs contaminated soil, taking into account specific procedures for industrial sites and craft village contaminated sites, will be developed.</p> <p>A guideline for POPs contaminated sites developed to cover:</p> <ul style="list-style-type: none"> - Clean-up requirements for specific land –uses; - Technology selection criteria; - Reporting requirements; <p>Care/custody and liability requirement</p>	Draft and final text of risk management procedures for contaminated sites.	
Output 3.1.3 National consolidated POPs contaminated sites inventory developed and prioritized.	Availability Upgraded POPs contaminated sites inventory.	<p>Currently an inventory database of POP pesticide contaminated sites (for about 1,300 sites) has been established with support from UNDP/GEF4 POP pesticide project.</p> <p>Inventories of POP dioxin, PCB and U-POPs are partly done by GEF and other bilateral supporting projects.</p> <p>Inventories of contaminated sites from industries and craft villages are not yet done.</p>	An existing inventory database for POPs contaminated sites/stockpiles integrated and upgraded to comprise information of PCB, new POPs, POPs from industrial contaminated sites/craft village	Upgraded database of POPs contaminated sites.	
Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Outcome 3.2 Detailed Provincial Management Plan	Capacity of national and local staff measurable by outcome of trainings	A limited training of staff trained on disposal technology and site	A site management plan for the provinces of Nghe An and Binh Duong developed, addressing an estimated	Training material, training minute, outcome of pre and post assessment of the	Risks a) The main risks are likely related

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
for the pilot Provinces completed that contribute to the contaminated site management at large scale and the reduction of POPs/PTS release and emission in the pilot provinces.	<p>and number of staff increased.</p> <p>Awareness of the local communities on POPs contaminated sites increased through result of interviews and questionnaires survey.</p> <p>Plan for POPs contaminated sites management in 2 provinces are completed</p> <p>Amount of POPs release to the environment which will be prevented by the implementation of provincial level plan.</p> <p>Number of people benefitting from reduced exposure to POPs</p>	<p>assessment in the course of previous Dioxin hotspot and Pesticidal POPs GEF/UNDP projects. Further training is needed for comprehensive contaminated site assessment, remediation, technology testing and selection</p> <p>Experience on contaminated sites gathered from the 2 GEF/UNDP projects: the Dioxin hotspots (3 large military sites at airbases) and several pesticide POPs sites.</p> <p>.</p>	<p>amount of 300 POPs pesticide sites and 50 industrial contaminated sites, representing an amount of several thousand tons of POPs contaminated soil (to be quantified) of POPs / PTS contaminated soil and waste, which includes: risk-based site prioritization; estimation of POPs amount and cleanup/disposal cost; logistic planning; GIS database; criteria for technology selection; financial plan;</p> <p>POPs release to the environment significantly reduced as a result of plan implementation after project completion.</p> <p>At least 50 staff trained on the management of POPs contaminated sites</p>	<p>participants.</p> <p>Questionnaire surveys</p> <p>Awareness raising and workshop minutes, interviews with relevant stakeholders.</p> <p>Documents of Nghe An and Binh Duong site management plans</p>	<p>to the uncertainties related to the exact number and size which may be discovered after upgrading the POPs contaminated sites in the 2 pilot provinces.</p> <p>b) In addition, improper prioritisation may lead to decisions not ensuring the highest global environmental benefit achievable with the available resources.</p> <p>c) awareness raising activities incomplete or not effective due to improper identification of targets</p> <p>Assumptions.</p> <p>a) This outcome intends to effectively overcome the concept of “pilot” activities going toward full scale implementation. A sound POPs contaminated management plan will be established to optimize the allocation of governmental resources and ensure timely implementation of remediation activities.</p> <p>b) The management plan will be also aimed at identifying the best options for maximizing the global environmental benefit of the remediation given the amount of resource available within a specific timeframe.</p> <p>c) Awareness raising activities will be preceded by a sound awareness raising plans aimed at properly identifying target and the best communication media.</p>
Outputs for outcome 3.2					
Output 3.2.1: Detailed planning based on the existing and upgraded database on POPs contaminated sites in the two provinces.	Availability of POPs contaminated sites management plans in 2 provinces	POPs contaminated sites management plan are missing either at national or provincial level	Within two year after project starting, two detailed POPs contaminated sites management plans developed for the 2 selected provinces (one for each province), i.e. Nghe an and Binh Duong Province to include: risk-based site prioritization; estimation of POPs amount and clean-up/disposal cost; logistic planning; GIS database; criteria for technology selection; financial plan, etc.	<p>Draft and final site management plans of contaminated sites in 2 provinces</p> <p>Report of consultation workshop..</p>	
Output 3.2.2. 50 technical and regulatory professionals from national level and 10 provinces will be trained	Number of national and provincial staff successfully trained on contaminated sites	Limited trainings provided to government staff on contaminated site management including site assessment, disposal	By the end of the project, at least 50 technical and regulatory professionals at national and in 10 provinces trained on contaminated sites management, site assessment, risk reduction and	<p>Training materials</p> <p>Training reports (pre- and post- training evaluation, training contents, final test,</p>	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
on contaminated sites management, site assessment, risk reduction and remediation practice taking into account lessons learnt from GEF4 POPs projects.	management	technology under the course of previous UNDP/GEF POP Dioxin hotspot and POP Pesticide stockpile projects. Further training is needed for comprehensive contaminated site assessment, remediation, technology testing and selection	remediation practice taking into consideration of lessons learnt from GEF4 POP project and cost-effective risk reduction measures for small contaminated sites that require involvement of local communities (e.g. management of contaminated water, management of empty pesticide containers, PPEs).	feedbacks from trainees, certificating, etc.)	
Output 3.2.4 Measures taken for the public awareness raising, proper risk communication and participation, including involvement in reporting contaminated sites and POPs stockpiles, aimed at a better implementation of all risk management measures, risk reduction and emergency responses, and health and safety protection, with active participation of the population	Percentage of local communities understanding about POP risks to human health and environment and involving in development and implementation of POP contaminated site management plans POPs exposure reduction actions carried out with the involvement of the community after implementation of awareness raising initiatives	Awareness of people and local authorities on the issues of POPs contaminated sites is still very low. Local communities in general do not involve in management of contaminated site, especially dispersed small contaminated sites, empty containers management, monitoring and reporting, etc.	Within 18 months after project implementation, about 80% of local communities close to POPs contaminated sites in 2 pilot provinces understanding about risks posed by POPs to human health and environment, risk reduction measures and emergency preparedness and response, and actively involving in development and implementation of contaminated site management plans At least 01 communication campaigns carried out at each of the communes and 02 trainings provided to key local authorities to facilitating for better implementation of all risk management measures, risk reduction and emergency responses, and health and safety protection, with active participation of the population	Reports of knowledge, attitude and practice (KAP) analysis Awareness raising programme Awareness raising materials Report of implemented communication campaigns including post KAP evaluation.	
Component 4. National mercury baseline inventory and release reduction strategy.					
Outcome 4.1. Mercury inventory results contribute to the development of awareness raising materials and the identification of national activities to	Availability of a national baseline mercury source and release inventory, and national mercury release reduction strategy adopted.	Viet Nam is signatory of the Minamata convention on mercury. Limited demonstration of alternatives to mercury carried out under a GEF global project on	By the end of the project - A preliminary mercury inventory and its database developed and implemented - At least 03 activities on mercury related issues conducted to increase awareness and knowledge of	Report on Mercury baseline source and release inventory. A Mercury database Communication materials and reports of	Risks 1) Difficulties related to the involvement of proper stakeholders on mercury sources. 3) Limited participation in workshops.

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
ratify and implement Minamata Convention.	Number of communication activities carried out and communication products disseminated.	healthcare waste. Demonstration activities on replacement of mercury carried out in 2 hospitals in the framework of the GEF global project on healthcare waste. Only demonstration activity carried out limited to mercury containing healthcare device Awareness raising activities on mercury carried out at 2 healthcare facilities	mercury	communication activities	Assumptions. 1) Viet Nam signed the Minamata convention, therefore already demonstrated high commitment in addressing environmental and health problems related to mercury. The project will involve the governmental institutions in charge of Minamata convention which are familiar with the stakeholders involved in mercury reduction. 3) Similarly to the other training activities, to access the training session on mercury inventory and reduction strategy, the candidate will have to pass an initial test which will serve also as baseline; and a final test, which will demonstrate the progress achieved and hence effectiveness of the training. The trainees passing the final test will receive an official certificate issued by (identify) . The above will ensure at the same time willingness to attend training course and quality/effectiveness of the training
Outputs for outcome 4.1					
Output / Activity 4.1.1 Identification of main industrial process which may lead to mercury release	Availability of preliminary inventory on mercury sources and releases addressing main industrial sources.	Very few data on mercury sources and release existed. Preliminary data on mercury has been done during the project document preparation (PPG stage).	The preliminary inventory source will cover an estimation of mercury from unintentional releases (i.e. atmospheric emission of mercury from combustion of coal), use of mercury in chemical plants (chloralkali processes, production of pesticides), small gold mining	Draft and final mercury inventory.	
Output 4.1.2 Questionnaire survey, process analysis, site visits for a number of possible mercury release sources	Completed questionnaire survey and site visits to at least 10 main mercury release sources	No questionnaire survey on mercury previously carried out.	A questionnaire aimed at establishing and consolidating a preliminary inventory of mercury source and release will be distributed to the main institutional and industrial stakeholders, which will also help identifying training and awareness raising needs.	Questionnaire form, address list, questionnaire filled questionnaires, survey report,	
Output 4.1.3 Identification of main manufacturing products which may contain mercury.	Availability of a database of mercury containing products developed.	Database on mercury added products is missing. Legislation on the replacement of mercury	Database containing amount of products included in the Annex A of the Minamata convention.	Meeting reports, preliminary and final database reports, database	Risks: Scarcity of information related to the presence of mercury in products. Unwillingness of producer / importer

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
		containing lamps			to share information on mercury concentration in products.
Output 4.1.4 Road Map on sound mercury management.	Availability of a preliminary roadmap for the reduction of mercury release and replacement of mercury containing product drafted	A road map for the reduction of mercury emission and replacement of mercury containing products is missing.	Roadmap and recommendation for the reduction of mercury emission and replacement of mercury containing products, including: assessment of mercury content in raw material and emission, assessment of amount of mercury in products, impact assessment of product reduction and phase out of mercury containing articles, waste management implication, and timeframe.	Meeting reports, preliminary and final strategy documents.	Complexity to address and agree a release reduction strategy in case it will affect economic interests of private industries. Countermeasures / assumptions. This activity will be carried out in coordination with MOIT MOIT has the largest potential to gather information on commercial products and to involve industrial partners. The Minamata convention establishes a progressive timeframe which will ensure enough time to solve all the economy-related issues associated with mercury reduction. Therefore, a strategy on mercury reduction will build on the Minamata convention requirements and timeframe.
Outcome 4.2 Increased knowledge and awareness of mercury source and releases.	Database of mercury containing products developed. Preliminary roadmap for the replacement of mercury containing product drafted.	Inventory of mercury added products in Viet Nam is missing. Strategy on Mercury related product is missing Legislation on mercury product limited to replacement of Hg containing light bulbs.	A database of products containing mercury available in the Vietnamese market or produced by Vietnamese industries A roadmap for the management of products and goods containing mercury will be developed	Database, preliminary and final reports, Preliminary strategy reports.	
Outputs for Outcome 4.2					
Output 4.2.1. Information outreach workshops (2 nos) conducted to provide information on	Number of communication materials developed and disseminated to increase	Under the GoV's legislation on chemical management, mercury is managed as all other heavy	By the end of the project - a leaflet summarizing mercury convention, mercury risks and	Printed leaflet on mercury Reports of outreach	

Results	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
source and release of inventory..	<p>awareness and knowledge on mercury of relevant stakeholders.</p> <p>Number of information outreach workshops conducted to provide information on sources of mercury and mercury alternatives in processes.</p>	<p>metals. No special requirement is existed.</p> <p>Low awareness and knowledge on mercury and its related risks, disposal technologies</p> <p>Awareness campaign on mercury issue limited to few pilot healthcare facilities carried out under the UNDP/GEF global project on healthcare waste management which focused on mercury containing waste, healthcare mercury devices and their alternatives</p>	<p>possible mercury tailored and printed by the project and disseminated national wide.</p> <ul style="list-style-type: none"> - 02 information outreach workshops conducted at two locations to discuss on mercury sources, risks and practice mercury management in Viet Nam and experience in mercury management internationally 	workshops on Mercury	

TOTAL BUDGET AND WORKPLAN

Award ID:	82491	Project ID:	91381
Award Title:	Country Name Project Title: Viet Nam POPS and Sound Harmful Chemicals Management Project		
Business Unit:	VNM10		
Project Title:	Country Name Project Title: Viet Nam POPS and Sound Harmful Chemicals Management Project		
PIMS no.	5154		
Implementing Partner (Executing Agency)	Ministry of Environment and Natural Resources (Viet Nam Environmental Protection Authority) Ministry of Industry and Trade (Viet Nam Chemicals Agency)		

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)	See Budget Note:
OUTCOME 1: Policy framework for sound chemicals management, including POPs/PTS developed and implemented.	VEA (MONRE)	62000	GEF	71200	International Consultants	20000	49500	25500	95000	1
				71300	Local Consultants	32000	52000	36000	120000	2
				72100	Contractual services- Companies	20000	60000	45000	125000	3
				75700	Training workshops	16000	40000	10000	66000	4
				71600	Travel	8000	12000	12000	32000	5
				74500	Miscellaneous	4000	6500	6500	17000	6
					sub-total GEF	100000	220000	135000	455000	
					Total Outcome 1	100000	220000	135000	455000	
OUTCOME 2:				71200	International Consultants	30000	58600	25000	113600	7

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)	See Budget Note:
Institutional Capacity Monitoring and reporting of POPs and PTS strengthened.	VEA (MONRE)	62000	GEF	71300	Local Consultants	33600	72000	38400	144000	8
				72100	Contractual services- Companies	24000	156000	100800	280800	9
				75700	Training Workshops	0	12000	12000	24000	10
				71600	Travel	6000	9600	6000	21600	11
				74500	Miscellaneous	6000	5000	5000	16000	12
					sub-total GEF	99600	313200	187200	600000	
					Total Outcome 2	99600	313200	187200	600000	
OUTCOME 3: Management of POPs contaminated sites	VEA (MONRE)	62000	GEF	71200	International Consultants	45000	70000	70000	185000	13
				71300	Local Consultants	60000	60000	60000	180000	14
				72100	Contractual services- Companies	120000	150000	140000	410000	15
				75700	Training Workshops	30000	45000	45000	120000	16
				71600	Travel	30000	30000	30000	90000	17
				74500	Miscellaneous	5000	5000	5000	15000	18
					sub-total GEF	290000	360000	350000	1000000	
					Total Outcome 3	290000	360000	350000	1000000	
OUTCOME 4: National mercury	VINACHEMIA (MOIT) & VEA (MONRE)	62000	GEF	71200	International Consultants	36600	38000	17900	92500	19
				71300	Local Consultants	31800	33800	16300	81900	20
				72100	Contractual services – Companies	23500	15500	7800	46800	21

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)	See Budget Note:
baseline inventory and release reduction strategy				75700	Training Workshops	8800	20500	10400	39700	22
				71600	Travel	14100	8200	4100	26400	23
				74500	Miscellaneous	5200	4000	3500	12700	24
					sub-total GEF	120000	120000	60000	300000	
					Total Outcome 4	120000	120000	60000	300000	
OUTCOME 5: MONITORING, LEARNING, ADAPTIVE FEEDBACK & EVALUATION	VEA (MONRE)	62000	GEF	71200	International Consultants	11000	18000	18000	47000	25
				71300	Local Consultants	4000	6000	6000	16000	26
				74100	Professional services (Audit)		4000	3000	7000	27
				75700	Training Workshops	0	0	0	0	
				72500	Travel	0	0	0	0	
				74500	Miscellaneous	0	0	0	0	
					sub-total GEF	15000	28000	27000	70000	
					Total Outcome 5	15000	28000	27000	70000	
Project management unit	VEA (MONRE)	62000	GEF	71200	International Consultants	0	0	0	0	
				71300	Local Consultants	30000	30000	30000	90000	28
				71600	Travel	0	0	0	0	

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)	See Budget Note:
	VINACHEMIA (limited to component 4) MOIT UNDP			72500	Office Supplies	10000	5000	5000	20000	29
				74500	UNDP cost recovery charge	5000	5000	5000	15000	30
					sub-total GEF	45000	40000	40000	125000	
					GEF Total	669600	1081200	799200	2550000	
					UNDP Total					
					Project Total	669600	1081200	799200	2550000	

Budget notes:

1. International consultants for assisting in analysis of compliance with SC, provide expertise on international regulation on chemicals (GHS, REACH), development of technical guidelines, development of PRTR and POPs tracking tool and other analysis related to institutional system to support well functioning of LEP and LOC (estimation of 32 weeks at 3000 USD/week)
2. Local consultants to work either in cooperation with international consultants or independent in the analysis of national regulatory, system, to perform gap analysis of regulation on chemicals development of technical guidelines, assist PMU on all technical and regulatory issues, draft regulatory documents, (150 weeks at 800- 900 USD/week)
3. This includes all contracts related to professional time for the development of training materials (30000 USD), drafting dissemination and broadcasting of awareness raising material (35000 USD), study related to technical specification of PRTR systems (30000 USD) and conducting pre ad post- training assessment (36000 USD)
4. Includes renting of conference rooms, interpret services, facilitators in training courses/workshops, etc
5. Travel and accommodation for national and international project staff (8 international travel from / to Viet Nam at an average of 1500 USD/trip, plus 10 weeks accommodation at 160 USD/day, plus an overall budget of 8800 USD for national travel and accommodation as per project needs.
6. Miscellaneous expenses, including communication(Tel, document printing consumables, contingency budget.
7. International consultants for provide technical assistance (knowledge, practical experience and advice) in training/ capacity building for laboratory staff, supervision of activities aimed at the data collection and development of PRTR and POPs tracking tool, environmental modeling, training, analysis of environmental data, strategy or roadmap to develop national monitoring and reporting capacity (37 weeks at 3000 USD/week).
8. Local consultants to work either in cooperation with international consultants or independent in the data collection and analysis for the establishment of POPs tracking tool and PRTR, perform inventory of monitoring capacity, assist PMU on all technical issues related to laboratory methodology and PRTR, draft regulatory documents, (180 weeks at 800 USD/week).
9. This includes contracts related to accreditation of 2 labs for 2 analytical parameter for each lab (130000 USD) contracts related to data collection for the establishment of a PRTR database in the demonstration province (110000 USD), contracts related to the collection and systematization of all POPs monitoring data in Viet Nam (40800 USD), professional time for the development of training materials, conducting pre and post- training assessment
10. Includes renting of conference rooms, interpret services, facilitators in training courses/worshops, etc in training for laboratory staff on certification schemes and accreditation issues

11. Travel and accommodation for national and international project staff (4 international travel to Viet Nam at an average of 1500 USD/trip, plus 5 weeks accommodation at 160 usd /day, plus an overall budget of 10000 USD for national travel and accommodation in the 2 demonstration provinces.
12. Miscellaneous expenses, including sundries, laboratory consumables and standards for calibration purposes, contingency budget.
13. International consultants for the development of provincial inventory guidance and design, provincial plans for cleanup of contaminated sites (61 weeks at 3000 USD/week).
14. Local consultants for the development of provincial plan for cleanup of contaminated sites, provide technical advice to PMU, supervise inventory of contaminated sites in the demonstration provinces (225 weeks at 800 USD/week).
15. This includes contracts for inventory and on site survey of contaminated sites in Nghe An and Binh Duong, professional time for the development of training materials and awareness raising activities
16. Includes interpret professional services, workshop and training event arrangements (including facilitator fee) in the 2 demonstration provinces
17. Travel and accommodation for national and international project staff (6 international travels to Viet Nam at an average of 1500 USD/trip, plus 20 weeks accommodation at 160 usd /day, plus an overall budget of 58600 USD for national travel and accommodation in the 2 demonstration provinces to carry out site visits in around 100 sites per province.
18. Miscellaneous expenses, including communication cost, sundries, consumables, , contingency budget .
19. International consultants to give guidance, design and carry out mercury inventory (excluding health care devices) (31 weeks at 3000 USD/week).
20. Local consultants to carry out mercury inventory plus development of a roadmap for phasing out mercury (102.4 weeks at 800 USD/week).
21. This includes contracts related to professional time for the development of training materials (10000 USD) awareness raising (10000 USD) professional fee for trainers.
22. Includes training and awareness raising on mercury issues, including interpret service, renting of conference rooms, facilitator fees
23. Travel and accommodation for national and international project staff (3 international travel to Viet Nam at an average of 1500 USD/trip, plus 7 weeks accommodation at 160 usd /day, plus an overall budget of 16500 USD for national traveling to conduct site visits nationwide in facilities emitting mercury.
24. Miscellaneous expenses, including, sundries, consumables, renting of office equipment, contingency budget.
25. International consultant to carry out midterm and terminal evaluation.
26. Local consultant to carry out midterm and terminal evaluation in association with an international consultant.
27. This includes contractual services for carrying out external audit
28. This includes the work fee for the PMU staff throughout project duration.
29. This includes supply / rental of computer and office equipment, stationary for the PMU
30. UNDP charge for ISS cost if services requested by PMU/counterparts (letter of agreement attached)

Summary of
Funds:¹⁸

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Total
GEF	669,600	1,081,200	799,200	\$	2,550,000
Co-financing					
JICA	1,500,000	1,500,000	0	\$	3,000,000\$
Government (include MOIT co-financing of 150,000)	2,000,000	4,000,000	2,050,000\$	\$	8,050,000\$
TOTAL	4,169,600\$	6,581,200	2,849,200	\$	13,600,000

¹⁸ Summary table should include all financing of all kinds: GEF financing, co financing, cash, in-kind, etc...

INCREMENTAL COST :

GEF Outcome/Atlas Activity	Baseline project activities	Baseline activities and co-financing (certified by co-financing commitment letters)	Co-financing (USD)	Incremental activities bringing POPs reduction and global benefits	GEF (USD)
Component 1:					
Policy framework for sound chemicals management, including POPs/PTS developed and implemented.	<p>All the activities below are planned with limited integration of SC requirements on POPs, if any:</p> <ul style="list-style-type: none"> • Law on Environmental Protection (LEP) is being revised and is expected to be promulgated in 1st quarter of 2014 to include two new chapters: soil protection and environmental rehabilitation of contaminated sites. • A PRTR circular has been drafted by VEA • Circular on occupational safety in preparation by Department of Occupational Safety (MOLISA) • Technical regulation on environmental limit for PCB under preparation. • Law on chemicals at the preliminary stages of its revision. • National Action Plan for Sound Management on Chemicals (not eligible as co-financing but need to be coordinated) 	<ul style="list-style-type: none"> • MONRE: personnel dedicated to regulatory development and update; (USD 700,000) • MONRE: office space and equipment, workshops, communication. Support to PMU staff; (USD 300,000) 	1,000,000	<ul style="list-style-type: none"> • Gap analysis of LEP and of secondary legislation to integrate POPs requirements • Integration of the "new POPs" amendments into LEP, Chemical Law and all the downstream regulation. • Guidelines for the specific implementation and enforcement of POPs requirements • Strengthening of PRTR circular to ensure proper individuation of POPs and U-POPs sources and its feasible in implementation and sustainability. • Training on risk assessment methods and on BAT/BEP with specific reference to POPs and PTSs. 	455,000
Component 2:					
Institutional Capacity Monitoring and reporting of POPs and PTS strengthened.	<p>All the activities below are scheduled for the period 2015-2020 with no integration of POPs / SC requirements and needs:</p> <ul style="list-style-type: none"> • Project for strengthening Chemicals Management, implemented by VINACHEMIA (MOIT) with JICA funds (limited to the conceptual design for management and database of industrial chemicals and aimed at establishing a risk-assessment approach). • NIP (2006-2010) establishes the need for "Build capacity for POPs monitoring and analysis, initially develop and implement a monitoring program on POPs pollution, including unintentionally produced POPs" • NIP (2010-2015) "Strengthen POPs 	<ul style="list-style-type: none"> • JICA: Design of chemical management system; inventory compilation; conceptual design of the database; survey of industrial chemicals; data analysis and awareness raising (USD3,000,000) • MONRE: will invest (USD 3,000,000) on POPs monitoring in the period 2015-2018 years. • MONRE: will invest (USD 200,000) in parallel activities related to on the development of a PRTR database 	5,450,000	<ul style="list-style-type: none"> • Ambient environment and receptor (human, biota, food) POPs and PTS baseline established ; • Detailed inventory of POPs analytical determination capacity in the country • Updated monitoring program for POPs • Laboratory accreditation procedure for POPs established; • Training and accreditation for 2 labs, an accreditation plan established, a round robin test for POPs carried 	600,000

GEF Outcome/Atlas Activity	Baseline project activities	Baseline activities and co-financing (certified by co-financing commitment letters)	Co-financing (USD)	Incremental activities bringing POPs reduction and global benefits	GEF (USD)
	<p>monitoring activities"</p> <ul style="list-style-type: none"> The Viet Nam Five Year National Action Plan for Sound Management of Chemicals establishes a road map 			<p>out;</p> <ul style="list-style-type: none"> Pilot POPs/PTS PRTR database established in a pilot province. 	
Component 3:					
Management of POPs contaminated sites	<ul style="list-style-type: none"> Activities on contaminated sites do not include specific provision on POPs contaminated sites and are not based on a sound risk based approach. Activities related to the management and treatment contaminated sites already under Decision No.64/2003/QĐ-TTg of April 22, 2003 approving the "Plan for thoroughly handling establishments which cause serious environmental pollution. In December 2010 the government of Viet Nam (4) issued the decision 1946 /QĐ-TTg, "Approving the Plan to treat and prevent environmental pollution caused by pesticides stockpiles all over the nation According to the implementation of that decision, 240 very high priority contaminated sites will be treated by 2015, 95 high priority contaminated sites will be treated by 2020 and the remaining contaminated sites will be treated by 2025. 	<ul style="list-style-type: none"> Activities related to the 95 high priorities contaminated sites to be treated by 2020 in the provinces; (USD 3,300,000) Activities related to the implementation of the circular 43/2013/TT-BTNMT prescribing national cleanup standards for lands contaminated by pesticides (USD 500,000), 	3,800,000	<ul style="list-style-type: none"> Further supporting of development regulation and standards for contaminated sites with specific reference to POPs; Risk assessment procedures and guidelines for POPs contaminated sites developed. Selection of 10 priority sites contaminated by POPs; demonstration of risk based site assessment and cleanup design in 10 sites; technology options recommended with active involvement of local communities. Training and awareness raising on POPs 	1,000,000
Component 4:					
National mercury baseline inventory and release reduction strategy/roadmap	<p>The Vietnamese Agency for Chemicals (VINACHEMIA) established under Ministry of Industry and Trade is the focal point for the implementation of the Minamata convention. Its main role is to participate in the negotiation and COP of the convention. In addition, VINACHEMIA is at the first stage of implementation of the the activities envisaged by the Minamata convention. There is the obvious need of technical support to ensure that these activities will be carried out successfully and in a sustainable way</p>	<ul style="list-style-type: none"> MOIT: Personnel, office space, site visits for the preliminary inventory on Mercury (USD100,000) Participation in international conferences on Minamata Convention (USD50,000) MONRE activities on inventory of mercury sources and environmental monitoring of mercury (USD 100,000) 	250,000	<ul style="list-style-type: none"> Mercury baseline source and release inventory developed. Questionnaire survey, process analysis, site visits for a number of possible mercury release sources Mercury reduction strategy will be drafted and submitted for approval 	300,000
Component 5:					

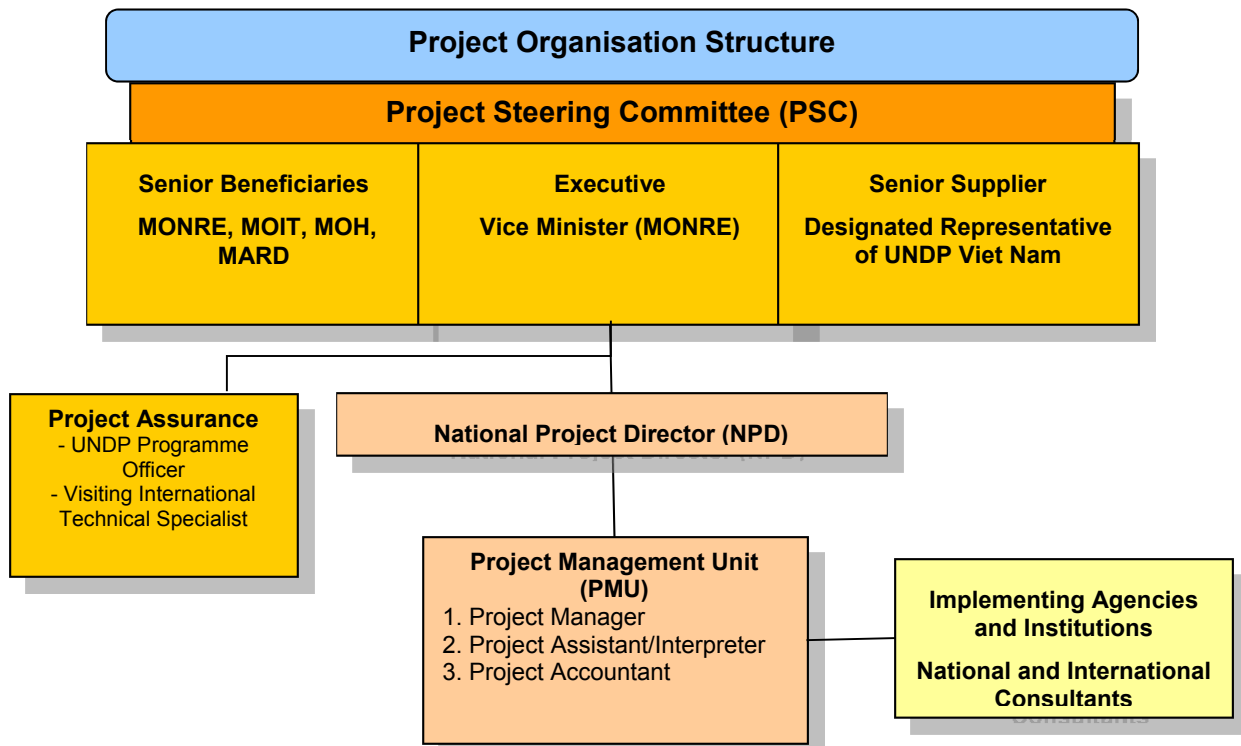
GEF Outcome/Atlas Activity	Baseline project activities	Baseline activities and co-financing (certified by co-financing commitment letters)	Co-financing (USD)	Incremental activities bringing POPs reduction and global benefits	GEF (USD)
MONITORING, LEARNING, ADAPTIVE FEEDBACK & EVALUATION	Not relevant under the baseline project			Mid-term and terminal evaluation conducted by independent national and international evaluation experts	70,000
Project management unit		MONRE: personnel, office space, site visits, arrangement of meetings for facilitating evaluation activities (USD 500000) Personnel, office space, equipment, communications, meetings for the ordinary monitoring of the project (APR, QPR, PIR) (USD 500000)	550,000		125,000
Total			11,050,000		2,550,000

IV. MANAGEMENT ARRANGEMENTS

Project Organization Structure

1. The project is financed with funding from the GEF and UNDP acts as the GEF Implementing Agency. In the context of the UNDP, the project will be executed by MONRE, which will assume the overall responsibility for the achievement of project results as the UNDP's National Implementing Partner (NIP). This NIP will be subject to the micro assessment and subsequent quality assurance activities as per Harmonized Approach to Cash Transfers to Implementing Partners (HACT) framework. UNDP will provide overall management and guidance from its Country Office in Hanoi and the Asia Pacific Regional Centre (APRC) in Bangkok, and will be responsible for monitoring and evaluation of the project as per normal GEF and UNDP requirements.
2. MONRE will designate a senior official as the National Project Director (NPD) for the project. The NPD will be responsible for overall guidance to project management, including adherence to the Annual Work Plan (AWP) and achievement of planned results as outlined in the ProDoc, and for the use of UNDP funds through effective management and well established project review and oversight mechanisms. The NPD also will ensure coordination with various ministries and agencies provide guidance to the project team to coordinate with UNDP, review reports and look after administrative arrangements as required by the Government of Viet Nam and UNDP. The project will be executed according to UNDP's National Implementation Modality (NIM), as per the NIM project management implementation guidelines agreed by UNDP and the Government of Viet Nam.

Figure 2 : Project Organization Structure



3. The Project Steering Committee (PSC) will have oversight of the Project Management Unit (PMU). The PSC will consist of a Chairperson (MONRE Vice Minister); with PSC members from MOIT, , UNDP Viet Nam, MARD, MOH. The primary functions of the PSC will be to provide the necessary direction that allows the Project to function and achieve its policy and technical objectives, and to approve the annual Project plans and M&E reports.
4. The PMU staff will report to the National Project Director (NPD). The NPD assigned by National Implementing Partner _MONRE will be responsible to MONRE, MOIT, the PSC and UNDP for implementing the Project, planning activities and budgets, recruiting specialists, conducting training workshops and other activities to ensure the Project is executed as per approved work plans.
5. As a senior supplier, UNDP also has a role of project assurance. This role will be exercised by the UNDP Programme Officer responsible for the project, based in the UNDP Country Office (CO), and a Visiting International Technical Advisor (VSTA), funded by the project.
6. Both the PMU will implement mechanisms to ensure ongoing stakeholder participation and effectiveness with the commencement of the Project by conducting regular stakeholder meetings, issuing a regular project electronic newsletter, conducting feedback surveys, implementing strong project management practices, and having close involvement with UNDP Viet Nam as the GEF Implementing Agency. A list of the project stakeholders and their projected roles on this project are provided on Table 5.

Table 5: List of main Stakeholders and Proposed Roles on PHCM Project

Stakeholder	Role on PHCM Project
Government Stakeholders	
MONRE	MONRE will be the Project Implementing Partner accountable to the Government of Viet Nam and UNDP for: (i) the successful implementation of the Project; (ii) mobilization of all resources including needed co-financing for the project implementation; (iii) the proper coordination among all related ministries, agencies, provinces and stakeholders involved in the project implementation; MONRE together with MOIT will be responsible for developing policies, technical standards and regulation.
VEA /MONRE	<p>-As National focal point of Stockholm convention on POP, Basel Convention and Montreal Protocol on ODS, VEA will be a key project partner under MONRE in managing the day-to-day operations of the Project implementation as per approved work plans, carrying out and coordinating technical activities, drafting technical norms / guidelines, conducting and supervising inventory of contaminated sites in the demonstration provinces, designing and implementing the PRTR system, carrying out and coordinating training, etc.</p> <p>-Based on detail function and duty of VEA departments (Pollution Control Department and Department of Waste Management and Environmental Improvement), specific project activities during implementation will be allocated accordingly to manage and</p>

Stakeholder	Role on PHCM Project
	coordinate the 2 departments during implementation.
DONREs	The DONREs of the 2 demonstration provinces (Nghe An and Binh Duong) will be involved in all activities related to the updating of inventory and development of provincial cleanup plans, as well as the regulatory work related to management of contaminated sites.
MOIT	MOIT will be involved in component 4 of the project as a Co-Implementing Partner, with specific reference to mercury inventory of added material and product and development of a roadmap for sound mercury management. MOIT will coordinate with UNIDO on related areas under component 4.
VINACHEMIA/MOIT	As National Focal Point of Chemicals Weapon Convention, Rotterdam Convention (industrial sector); Minamata Convention on Mercury, VINACHEMIA will participate in project activities related to mercury and the management of chemicals.
MARD	MARD will be involved in project activities related to the cleanup of POPs pesticide contaminated sites and the development of market based policies related to collection of disposal of empty pesticide containers.
MOH	MOH will be involved in activities related to the implementation of chemical risk assessment procedures.

General

UNDP support service

- MONRE will enter into an agreement with UNDP for support services in the form of procurement of goods and services during the project implementation process. In such a case, appropriate cost recovery will be charged as per UNDP rules and regulations. The support services will be outlined in the form of Letter of Agreement signed between MONRE and UNDP.

Collaborative Arrangements with Related Projects

- The project development team at MONRE will consult and involve the implementers of the relevant ongoing POPs related projects and programmes as well as other chemical management or environmental protection programmes in the country in the design and development of the Project to explore synergies and avoid overlaps.
- With regards to other initiatives in the region, the Project will promote learning and knowledge sharing and forge partnerships between Vietnamese entities and other country partners to replicate best practices and facilitate technology transfer.
- This proposed Project will establish the necessary communication and coordination mechanisms through its PMU and PSC with the Project Management Board to ensure proper coordination between the various projects there under. UNDP Viet Nam will also take the lead in ensuring adequate coordination and exchange of experiences. In addition, the project will seek to coordinate

its actions with other UNDP POPs related activities in Viet Nam. Similarities in the strategy of the proposed project may extend an opportunity to share lessons and exploit synergies, in particular in the areas of harmonization and mutual recognition. Also, the proposed project will also seek to coordinate actions with other existing government commitments and non-government initiatives.

Prior Obligations and Prerequisites

11. There are no prior obligations and prerequisites.

Audit Arrangements

The Government will provide the UNDP Resident Representative with certified periodic financial statements. An annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the programming and finance manuals done by the legally recognized auditor or by a commercial auditor in the country.

The audit will be conducted and arranged according to UNDP financial regulations, rules and audit policies.

Agreement on Intellectual Property Rights and Use of Logo on Project Deliverables

12. To accord proper acknowledgement to GEF for providing funding, a GEF logo should appear on all relevant GEF-supported project publications, including among others, project hardware, if any, purchased with GEF funds. Any citation on publications regarding projects funded by GEF should also accord proper acknowledgement to GEF. Alongside GEF and UNDP logo, a MoST logo may also feature as the Implementing Partner of the proposed project.
13. The project team and the UNDP Office in Hanoi supported by the UNDP-GEF Regional Coordination Unit in Bangkok will be responsible for project monitoring and evaluation conducted in accordance with established UNDP and GEF procedures. The Project Results Framework provides performance and impact indicators for project implementation along with their corresponding means of verification. The GEF CC Tracking Tool will also be used to monitor progress in reducing GHG emissions. The M&E plan includes: inception workshop and report, project implementation reviews, quarterly and annual review reports, independent mid-term evaluation, and independent final evaluation. The following sections outline the principle components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The M& E budget is provided on Table 6.

V. MONITORING FRAMEWORK AND EVALUATION

The project will be monitored through the following M& E activities.

14. ***Project start:*** A Project Inception Workshop will be held within the first 4 months of the project starting with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders will be invited. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan. The Inception Workshop would address a number of key issues including:

- a) Assisting all partners to fully understand and take ownership of the project;
- b) Detailing the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis-à-vis the project team;
- c) Discussing the roles, functions, and responsibilities within the Project's decision-making structure including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference of project staff will be discussed again as required;
- d) Finalization of the first annual work plan based on the project results framework and the relevant GEF Tracking Tool if appropriate. A review and agreement on the indicators, targets and their means of verification will be required as well as a re-check of assumptions and risks;
- e) Providing a detailed overview and reach consensus on reporting, monitoring and evaluation (M&E) requirements, the M&E work plan and budget;
- f) Discussion of financial reporting procedures and obligations, and arrangements for annual audit;
- g) Planning and scheduling Project Board meetings; and,
- h) Clarification of roles and responsibilities of all project organization structures as well as planned dates of meetings where the first PSC meeting should be held within the first 12 months following the inception workshop.

15. An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

16. Quarterly Progress Report: Contents of the QPR include:

- Progress made as reported in the Standard Progress Report (SPR) and monitored in the UNDP Enhanced Results Based Management Platform;

Table 6: M&E Work Plan and Budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time Frame
Inception Workshop and Report	<ul style="list-style-type: none"> ▪ Project Manager ▪ UNDP CO, UNDP GEF 	Indicative cost: 15,000	Within first four months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> ▪ UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. 	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> ▪ Oversight by CTA with support from the Project Manager ▪ Project team 	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO ▪ UNDP RTA ▪ UNDP EEG 	None	Annually by July
Periodic status/ progress reports	<ul style="list-style-type: none"> ▪ Project manager and team 	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO ▪ UNDP RCU ▪ External Consultants (i.e. evaluation team) 	Indicative cost: 24,000	At the mid-point of project implementation.

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time Frame
Final Evaluation	<ul style="list-style-type: none"> ▪ Project manager and team, ▪ UNDP CO ▪ UNDP RCU ▪ External Consultants (i.e. evaluation team) 	Indicative cost : 24,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO 	0	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> ▪ UNDP CO ▪ Project manager and team 	Indicative: 7,000 for 3 years	Yearly
Visits to field sites)	<ul style="list-style-type: none"> ▪ UNDP CO ▪ UNDP RCU (as appropriate) ▪ Government representatives 	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST		70,000	
Excluding project team staff time and UNDP staff and travel expenses		(+/- 5% of total budget)	

- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS (if applicable otherwise outside ATLAS). Risks become critical when the impact and probability are high;
- Project Progress Reports (PPR) as generated in the Executive Snapshot and based on the information recorded in Atlas; and,
- Other ATLAS logs that are used to monitor issues and lessons learned. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

17. Annual Project Review /Project Implementation Reports (APR/PIR): APRs/PIRs are key reports prepared to monitor progress since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements, and includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes, each with indicators, baseline data and end-of-project targets (cumulative);
- Project outputs delivered per project outcome (annual);
- Lesson learned/good practice;
- AWP and other expenditure reports;
- Risk and adaptive management;
- ATLAS QPR; and,
- Portfolio level indicators (i.e. GEF focal area tracking tools) that are used by most focal areas on an annual basis.

18. Periodic Monitoring through site visits: UNDP CO and the UNDP RCU staff will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

19. Mid-term evaluation of project cycle: The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced

implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

20. End of Project: An independent Final/Terminal Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.
21. The Final/Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation. During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.
22. Learning and knowledge sharing: Results from the project will be disseminated within and beyond the Project intervention zone through a number of existing information sharing networks and forums. In addition:
 - The Project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for senior personnel working on projects that share common characteristics;
 - The Project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned; and,
 - The Project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identifying and analyzing lessons learned is an on-going process and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorizing, documenting and reporting the lessons learned. To this end a percentage of project resources will also need to be allocated for these activities;
 - This GEF-funded Project will endeavor to compile and share its development results within a monitoring framework that is designed to meet the goals of the UN One Plan outcomes.

VI. LEGAL CONTEXT

23. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Viet Nam and the United Nations Development Program, signed by the parties on 21 March 1978. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agreement described in that Agreement.

24. Consistent with the Article III of the SBAA, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner. The implementing partner shall:
- Put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
 - Assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.
25. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.
26. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via:
<http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>.
27. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

VII. ANNEXES

Annex I: Risk Analysis

Project Title: Viet Nam POPS and Sound Harmful Chemicals Management Project	Project ID:	Date: 3/07/2014
--	--------------------	------------------------

#	Description	Date Identified	Type	Impact (L, M, H) & Probability (L, M, H)	Countermeasures / Management responses	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
1	Lack of coordination of the relevant institutions and ministries	3/07/2014	Institutional	M/M	Coordination and solution of conflicts among different stakeholders will be solved by involving them in the project steering committee and/or in specific project activities and establishing a well-staffed PMU for project management. A "POPs regulation coordination office" will be established at MONRE which will interact with PMU and will coordinate with all governmental bodies involved in POP regulatory work.	PM GOV	UNDP	3/07/2014	N/A at this stage
2	Conflicting objectives of different ministries / stakeholders which may render difficult the negotiation on an integrated regulation.	3/07/2014	Institutional	M/M	As for #1	PM GOV	UNDP	3/07/2014	N/A at this stage
3	Lack of commitment of relevant stakeholders	3/07/2014	Institutional	L/M	As for #1	PM GOV	UNDP	3/07/2014	N/A at this stage
4	Timing and complexities of procedures for the	3/07/2014	Management	M/H	The selection of the proper procedure and type of regulatory instruments (i.e. decree instead of	PM	UNDP	3/07/2014	N/A at this stage

#	Description	Date Identified	Type	Impact (L, M, H) & Probability (L, M, H)	Countermeasures / Management responses	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
	examination, voting and adoption of new technical regulations.				laws, or official guidance documents annexed to existing laws) for POPs – related legislation will ensure that regulation is adopted within project deadline.				
5	Complexities related to the establishment of a public/private partnership, or no market for services in the POPs sector.	3/07/2014	Management / Financial	L/L	Market based policies will be developed since the very starting of the project, on sectors where the sustainability is more likely (for instance, hazardous waste or sampling/analysis activities where a substantial amount of governmental funding already exist) so that the risk of failure is minimal.	PM	UNDP	3/07/2014	N/A at this stage
6	Agreement among stakeholders on baseline and environmental quality targets not achievable within the project timeframe.	3/07/2014	Institutional / Technical	M/L	The establishment of a PMU with high skilled professionals with experience on environmental monitoring, together with assistance from national and international experts on Environmental Quality Standards, in cooperation with representatives from all the relevant governmental, non-governmental and private stakeholders will ensure that agreement on environmental quality standard may be achieved within project deadline, and that data validation of the existing information is carried out in the proper way.	PM / GOV	UNDP	3/07/2014	N/A at this stage

#	Description	Date Identified	Type	Impact (L, M, H) & Probability (L, M, H)	Countermeasures / Management responses	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
7	Scientific complexity of establishing baseline and environmental standards for monitoring reference is too high to be addressed within the project timeframe.	3/07/2014	Technical	L/L	The work on ambient environment and receptor (human, biota, food) POPs and mercury baseline and environmental quality standard will build on international existing standards already set by authoritative agencies (WHO, USEPA, ECHA), and adapted to Vietnamese specific situation where necessary and feasible. By recruiting international and national experts with outstanding experience in the field, in strict cooperation with relevant stakeholders, it will be possible to identify within project framework a scientific and sustainable set of environmental quality standards for all POPs and for mercury.	PM	UNDP	3/07/2014	N/A at this stage
8	Non-availability of data, or difficulties in data validation due to different sampling and analytical methodologies and lack of information on monitoring condition	3/07/2014	Technical	H/M	Although it is expected that there will be substantial data gaps concerning potential industrial source of pollutants, by starting from areas where monitoring data are more reliable and complete, and relying on existing guidance on POPs, it will be possible to set methodologies and standards for the establishment of a database structure and a reporting system covering all POPs and environmental sectors.	PM	UNDP	3/07/2014	
9	Industries and data owners unwilling to share data and relevant process,	3/07/2014	Technical / Institution	M/L	The drafting, communication, and enforcement of the PRTR decree, linked to permitting and licensing of industrial activities, will ensure	PM	UNDP	3/07/2014	N/A at this stage

#	Description	Date Identified	Type	Impact (L, M, H) & Probability (L, M, H)	Countermeasures / Management responses	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
	storage, and monitoring information.		al		willingness of stakeholder to communicate the relevant information. Data owners are basically governmental institutions or private/public laboratories working within governmental projects; their interest in sharing data will be ensured by directly involving them in project activities.				
10	Laboratories unwilling to participate in accreditation program, and/or unwilling to share data on their capability, equipment, methodology, technical capacity.	3/07/2014	Technical	L/L	By providing assistance and training on accreditation and certification scheme to labs-their interest in joining an accreditation scheme – otherwise missing substantial business opportunities in the future – will be insured		UNDP	3/07/2014	N/A at this stage
11	Scientific complexity of establishing risk assessment methodologies and clean-up standard is too high to be addressed within the project timeframe.	3/07/2014	Technical	M/L	Scientifically sound risk based methodologies and clean-up standards have been developed and extensively tested by a number of authoritative international institutions, and are continuously upgraded. Rather than developing new methodologies and standards, the work on risk assessment and clean-up criteria will build on international existing standards and methodology by establishing cooperation with the relevant international institution who developed these standard. (WHO, USEPA, ECHA, ISO, ASTM), and adapted to Vietnamese specific	PM	UNDP	3/07/2014	N/A at this stage

#	Description	Date Identified	Type	Impact (L, M, H) & Probability (L, M, H)	Countermeasures / Management responses	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
					situation where necessary and feasible. By recruiting international and national experts with outstanding experience in the field, in strict cooperation with relevant stakeholders, it will be possible to identify within project framework a scientific and sustainable set of risk based standards and methodologies for all POPs and for mercury.				
12	There is a substantial risk of overlapping with other site-clean-up related activities with further site-assessment work not providing substantial added value.	3/07/2014	Management	L/L	There is a substantial need of capitalizing the work carried out – sometime with different methodologies -by a number of actors in the framework of previous GEF, international and national activities on contaminated sites. The project will build from success stories and lesson learned, interacting with the main governmental stakeholders (MONRE, MOD, MOH, MARD) for identifying a sustainable strategy of general applicability to be proposed as the national standard for site assessment and technology selection. This standard methodology will be demonstrated and validated in a number of sites contaminated by different POPs.	PM	UNDP	3/07/2014	N/A at this stage
13	There is a substantial risk of overlapping of training activities with previous training	3/07/2014	Management	L/L	There is a substantial need of collating and systematizing the training carried out actors in the course of previous GEF,	PM	UNDP	3/07/2014	N/A at this stage

#	Description	Date Identified	Type	Impact (L, M, H) & Probability (L, M, H)	Countermeasures / Management responses	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
	carried out in other projects.				international and national activities on contaminated sites.				
14	Training effectiveness limited or not properly assessed due to limited participation or limited quality control.	3/07/2014	Management	M/M	The project will build from success stories and lesson learned, interacting with the main governmental stakeholders (MONRE, MOD, MOH, MARD) for identifying an official training package for on site assessment and technology selection..	PM	UNDP	3/07/2014	N/A at this stage
15	Difficulties related to the involvement of proper stakeholders on mercury sources.	3/07/2014	Institutional	L/M	Viet Nam signed the Minamata convention, therefore already demonstrated high commitment in addressing environmental and health problems related to mercury. The project will involve the governmental institutions in charge of Minamata convention which are familiar with the stakeholders involved in mercury reduction.	PM / GOV	UNDP	3/07/2014	N/A at this stage
16	Complexity to address and agree to a release reduction strategy in case it will affect economic interests of private industries.	3/07/2014	Technical	L/M	At this stage, the project will mainly identify a road map which will be elaborated in a strategy after project end. The Minamata convention establishes however a progressive timeframe which will ensure enough time to solve all the economy-related issues associated with mercury reduction. Therefore, a strategy on mercury reduction will build on	PM	UNDP	3/07/2014	N/A at this stage

#	Description	Date Identified	Type	Impact (L, M, H) & Probability (L, M, H)	Countermeasures / Management responses	Owner	Submitted, updated by	Last Update	Status (compared with previous evaluation)
					the Minamata convention requirements and timeframe.				
	Overall Rating		M/L						

Annex II: TOR for key project personnel and technical consultants

I. Key project personnel

1. National Project Director (20-30%)

Assigned by Government/ National Implementing Agency

Duties and responsibilities

Overall, the NPD will be accountable to both the Government and the UNDP. The main duties and responsibilities are:

- Ensures that the expected results of the project are of satisfactory, substantive quality and that they contribute to the achievement of the intended outcome identified in the ONE UN document. This will be discharged through the (i) approval of project work plans, TORs, reports, (ii) follow-up on the implementation of recommendations made by regular project reviews and/or external evaluations, and (iii) conduct of internal reviews and evaluations as/if needed.
- Ensures that project resources, national as well as international, are effectively utilized for their intended purposes through the (i) verification of project budgets and payments, (ii) approval of budget revisions within the agency flexibility limit, (iii) follow-up on the implementation of recommendations made by external audits and (iv) conduct of internal audits as/if needed.
- Ensures that counterpart funds are made available by the Implementing Partner in sufficient quantities and in a timely manner to support project implementation.
- Ensures that project parties, particularly national parties (including the Implementing Partner) fully participate in project implementation, effectively collaborate in project activities and duly benefit from project results.
- Ensures that the results achieved and lessons learned by the project are properly documented, proactively disseminated to and duly shared with all project parties, particularly national parties.
- Selects, arranges for the appointment of and supervises the Project Manager, in consultation with UNDP, to make sure that the PM and other national project staff are empowered to effectively perform their day-to-day project duties.
- Selects, arranges for the appointment of International Consultants, in consultation with UNDP, to make sure that international project personnel contribute expert inputs of the highest quality to the expected outputs of the project.
- Represents the Implementing Partner at major project reviews, evaluations, audits and other important events.
- Provide regular updates to the PSC.

2. Project Manager (Full time – one year renewable up to 3 years.)

Report to National Project Director (NPD)

Duties and responsibilities

Overall, the PM will be responsible for the day-to-day running of the project, including overall coordination, planning, management, implementation, monitoring & evaluation and reporting of all project activities:

- Prepare and update project work plans, and submits these to the NPD and UNDP for clearance.
- Participate in quarterly work planning and progress reporting meetings with the NPD, PMU, and UNDP;
- Ensure that all agreements with implementing agencies are prepared, negotiated and agreed upon.
- Prepare TORs for key inputs (i.e. personnel, sub-contracts, training, and procurement) and submits these to the NPD and UNDP for clearance, and administers the mobilization of such inputs.

With respect to external project implementing agencies/ sub-contractors:

- a. ensuring that these agencies mobilize and deliver the inputs in accordance with their letters of agreement or contracts, and
- b. providing overall supervision and/or coordination of their work to ensure the production of the expected outputs.
- Assume direct responsibility for managing the project budget by ensuring that:
 - a. project funds are made available when needed, and are disbursed properly,
 - b. expenditures are in accordance with the project document and/or existing project work plan,
 - c. accounting records and supporting documents are properly kept,
 - d. required financial reports are prepared,
 - e. financial operations are transparent and financial procedures/regulations for NEX projects are properly applied; and
 - f. S/he is ready to stand up to audits at any time.
- Assume direct responsibility for managing the physical resources (e.g. vehicles, office equipment, and furniture) provided to the project by UNDP.
- Supervise the project staff and local or international short-term experts/consultants working for the project.
- Prepare project progress reports of various types and the Final Project Report as scheduled, and organizes review meetings and evaluation missions in coordination with UNDP.
- Report regularly to and keeps the NPD and UNDP PO up-to-date on project progress and problems.

Required Qualifications

- University degree (preferably post-graduate degree) in environment management, chemicals or related fields;

- Knowledge of Result-based management and at least 5 years of experience in project management and implementation;
- Strong analytical skills, good inter-personal and team building skills – Leading skills;
- Full time availability for project management duties;
- Working level of English language is an absolute necessity;
- Familiarity with technical assistance projects and UNDP programme in Viet Nam is an asset.

3. Accountant cum Secretary (Full time – one year renewable up to 3 years.)

Report to PMU Project Manager and National Project Director (if required)

Duties and responsibilities

This Account Secretary Position has two roles: as an Administrative Assistant and as an Accountant with the following duties:

a. As a Project Administrator

- Provide assistance in the operational management of the project according to the project document and the NEX procedures.
- Undertake all preparation work for procurement of office equipment, stationeries and support facilities as required;
- Provide support in preparing project events, including workshops, meetings (monthly, quarterly and annual), study tours, trainings, etc., as required.
- Take care of project telephone, fax, and email system;
- Assist with preparation of TORs and contracts for consultants for project activities.

b. As a Project Accountant

- Prepare quarterly advance requests to get advance funds from UNDP in the format applicable.
- Assist the PC and NPD in project budget monitoring and project budget revision.
- Set up accounting system, including reporting forms and filling system for the project, in accordance with the project document and the NEX procedures;
- Maintain petty cash transactions. This includes writing of receipts, preparation of payment request form, receipt and disbursement of cash and clearance of advances;
- Prepare cheques and withdraw money from the bank;
- Prepare project financial reports and submit to PC and NPD for clearance and furnish to UNDP as required;
- Enter financial transactions into the computerised accounting system;
- Reconcile all balance sheet accounts and keep a file of all completed reconciliation;
- Check and ensure that all expenditures of projects are in accordance with NEX procedures. This includes ensuring receipts to be obtained for all payments;

- Check budget lines to ensure that all transactions are booked to the correct budget lines;
- Ensure documentation relating to payments are duly approved by the NPD;
- Bring any actual or potential problems to the attention of the NPD;
- Follow up bank transfers. This includes preparing the bank transfer requests, submitting them to the bank and keeping track of the transfers;
- Ensure Petty Cash to be reviewed and updated ensuring that there is up-to-date records;
- To continuously improve system & procedures to enhance internal controls to satisfy audit requirements.
- Ensure that bank statements be collected from the banks on the 2nd working day of each month;
- Ensure that bank accounts should be reconciled and reported on or before 3rd of each month;
- Prepare monthly bank reconciliation statement, including computation of interests gained to be included into reports.
- Maintain the inventory file to support purchases of all equipment/assets.
- Undertake other relevant matters assigned by the NPD.

Required Qualifications

- University degree in accounting, finance or related fields;
- Solid experience of budgeting, planning and reporting on foreign funded projects; and experience with international auditing requirements.
- Good secretarial skills and good organizational capacity;
- Knowledge in administrative and accounting procedures of the Government
- Good computer skills in common word processing (MS Word), spreadsheet (MS Excel), and accounting software.
- Appropriate English language skills, both spoken and written.

4. Project Interpreter cum Secretary (PIS) (Full time – one year renewable up to 3 years

Report to PMU Project Manager and National Project Director (if required)

Duties and responsibilities

Under overall supervision of National Project Director, the PIS will work under the direct supervision of and provide support to the Project Manager in the discharge of his/her responsibilities in the overall management of the day-to-day activities of the project. The PIS will work closely with the NPD, the PM, staff from the PMU and other international and national consultants. The main duties of the PIS are relating to secretarial and Interpretation/translation.

a. Responsibilities of the Project Secretary:

- Provide necessary assistance in the operational management of the project according to the project document and the NEX procedures.
- Draft correspondence on administrative and program matters pertaining to the Project Office responsibilities;

- Provide support in preparing project events, including workshops, meetings (monthly, quarterly and annual), study tours, trainings, etc., as required. This also includes preparation of background materials for use in discussions and briefing sessions on project matter;
- Logistical arrangements. This includes visa, transportation, hotel bookings for project staff, consultants and invited guests coming for project activities;
- Be responsible for project filing system. This includes setting up the filing, numbering and filing all incoming and outgoing correspondence.
- Prepare regular list of events for sharing of information within project staff and outside;
- Assist with project communication activities, including publications;

b. Responsibilities as Project Interpreter:

- Providing interpretation services to the Project activities, including meetings, small-scale workshops, and relevant events;
- Acting as interpreter for NPD and international consultants;
- Translating project documents, materials, papers, letters etc. from Vietnamese into English and vice versa.

Qualifications

- University degree in English language or related fields;
- Good command of both written and spoken English and at least four (03) years of working experience in the positions of secretary or interpreter/ translator.
- Good secretarial skills and good organizational capacity;
- Knowledge in administrative procedures of the Government
- Good computer skills in common word processing (MS Word), spreadsheet (MS Excel), Vietnamese software;
- Knowledge and experience in working with UN agencies and international organizations is an advantage.

II. Key Technical consultants

1. Visiting International Technical Advisor (Part time – 4-6 months over one year period, renewable for upto 3 years)

Report to National Project Director and coordinate with Project Manager on Administrative issue

Duties and responsibilities

This assignment is for a part time PMU International Technical Advisor who will be recruited with the objective to provide PMU with technical assistance, advice and international experience on all the activities to be carried out under the Project, to carry out specific technical activities and training. The ITA will work under overall supervision of Project Manager.

The International Technical Advisor will, in general, be responsible for:

- Assisting in analysis of compliance with SC, provide expertise on international regulation on chemicals (GHS, REACH)
- Development of technical guidelines,
- Supervise the development and data collection for the PRTR and POPs tracking tool
- Coordinate the training for laboratory staff provided by international consultants,
- Carry out environmental modeling and perform relevant training,
- Provide technical assistance and knowledge for the development of provincial plans for cleanup of contaminated sites
- Provide technical assistance to carry out inventory of industrial mercury sources and inventory of mercury added materials
- Review the technical reports produced by the project team and provide advices and comments to ensure quality of the deliverables
- Technical support to PMU in participating in meetings with UNDP and the PSC;
- Technical support to PMU in coordinating the work of international consultants;
- Providing comments on project implementation progress at different stages;
- Assisting PMU in drafting Term of References for all the services and equipment to be procured under the project;
- Assist PMU in drafting minutes of the meetings with special reference to the technical part;
- Perform site visits and inspections at project implementation sites during various implementation stages (site visits and contaminated sites, industrial sites, trainings)
- Timely and proactively provide recommendation for the improvement of all project activities.

Duration of this assignment, duty station and expected places of travel

This is a part time assignment of the duration of 4-6 working months over one year. The contract may be renewed yearly for maximum 3 years (the duration of the Project) on the basis of the satisfactory evaluation of the performance of the work carried out by the International Technical Advisor in the preceding year.

The Technical Officer will work at home (2 months) and at the PMU office to be established in Hanoi (4 months)

The Technical Officer is expected to travel within the country at the implementation sites, to supervise project implementation activities. The exact number of travels will be specified in the course of project implementation based on project needs. Travel and subsistence during travel will be paid by the project.

Deliverables

The following deliverables will be submitted to the PMU by the Technical Officer:

- Short quarterly work-plan of the activities to be carried out under this assignment;
- Draft Inception report of the Project;
- Quarterly reports of the activities carried out under this assignment (three reports per year);
- Comments reports and supervision reports as relevant for the different project activities;
- Draft TORs for the required project activities;
- Draft PIR, APR, QPR, AWP, QWP

Mission report and debriefing for the field visit;
Meeting minutes, with special reference to the technical parts.

Required qualifications

The Technical Officer shall have as a minimum the following qualifications:

Advanced degree (Master of Science as a minimum, PhD is an asset) in Engineering, Industrial Chemistry, Environmental Science, or related fields.

At least 10 years international expert on POPs and Stockholm Convention,

At least 15 year experience in the field of chemical risk assessment or in projects related to the implementation of Stockholm Convention on POPs, or in the management of hazardous chemicals and waste;

Previous experience as international technical advisor in GEF / POPs related projects

In addition, the Technical Officer should be independent and should not have any personal interest related to project activities which may hinder its independency and which may distort or bias his performance.

2. National Technical Officer (Full time or 70% – one year renewable up to 3 years).

Report to Project Manager

Duties and responsibilities

This assignment is for a full time PMU Technical Officer who will be recruited with the objective to provide PMU with technical assistance and advice on all the activities to be carried out under the Project, to help on routine technical coordination and supervision and to prepare or assist in the preparation of relevant project documentation and training materials. The person will work under overall supervision of NPD

The Technical Officer will, in general, be responsible for:

- Assisting PMU in overall technical management and coordination of all project activities;
- Technical support to PMU on the supervision of all the technical activities related to institutional strengthening, policy framework, POPs and PTS cleanup plans, project monitoring and evaluation, and replication program development;
- Technical support to PMU in participating in meetings with UNDP and the PSC;
- Technical support to PMU in coordinating the work of international consultants;
- Providing comments on project implementation progress at different stages;
- Assisting PMU in drafting Term of References for all the services and equipment to be procured under the project;
- Assisting PMU in drafting technical reports and management reports like the Project Implementation Reports, (PIR), Annual and Quarterly Progress Reports (APR, QPR) and Annual and Quarterly Workplans (AWP, QWP);

- Assist PMU in drafting minutes of the meetings with special reference to the technical part;
- Perform site visits and inspections at project implementation sites during various implementation stages (site visits and contaminated sites, industrial sites, trainings)
- Provide comments on the reports related to the technical activities and review the related plan under the Project to ensure their technical feasibility and most appropriate measures and actions taken.
- Supervise the work of service provider to guarantee the quality and consistency of the reports and deliverables, and help them finalize reports before their dissemination to concerned parties;
- Timely and proactively provide recommendation for the improvement of all project activities.

Duration of this assignment, duty station and expected places of travel

This is a full time assignment of the duration of one year. The contract may be renewed yearly for maximum 3 years (the duration of the Project) on the basis of the satisfactory evaluation of the performance of the work carried out by the Technical Officer in the preceding year.

The Technical Officer will work at the PMU office to be established in Hanoi.

The Technical Officer is expected to travel within the country at the implementation sites, to supervise project implementation activities. The exact number of travels will be specified in the course of project implementation based on project needs. Travel and subsistence during travel will be paid by the project.

Deliverables

The following deliverables will be submitted to the PMU by the Technical Officer:

- Draft Inception report of the Project;
- Quarterly reports of the activities carried out under this assignment (three reports per year);
- Comments reports and supervision reports as relevant for the different project activities;
- Draft TORs for the required project activities;
- Draft PIR, APR, QPR, AWP, QWP
- Mission report and debriefing for the field visit;
- Meeting minutes, with special reference to the technical parts.

Required qualifications

The Technical Officer shall have as a minimum the following qualifications:

- Advanced degree (Master of Science as a minimum) in Engineering, Industrial Chemistry, Environmental Science, or related field.
- Sound experience on POPs and Stockholm Convention,
- At least 5 year experience in the field of chemical risk assessment, or in projects related to the implementation of Stockholm Convention on POPs, or in the management of hazardous chemicals and waste;

- Previous experience as supervisor / Technical Officer in projects related to environmental protection or hazardous waste management;
- Previous experience in the implementation or supervision of projects related to the management and disposal of POPs or PCBs is an asset.

In addition, the Technical Officer should be independent and should not have any personal interest related to project activities which may hinder its independency and which may distort or bias his performance.

Annex III: list of industries in Binh Duong related to POPs use or release.

Industrial parks / companies	Address	Manufacturing Sector
I Sóng Thần industrial park 2:		
1. LtdLCo RINORS (VIET NAM) ENTERPRISE	15 DT 743 SÓNG THẦN Industrial Park, DĨ AN dist., BÌNH DƯƠNG	Equipment
2. Aaquatic feed LtdLCo VIỆT THĂNG	16 SÓNG THẦN ₂ Industrial Park, Road 2, DĨ AN town, DĨ AN Dist., BÌNH DƯƠNG	Equipment
3. Trade and service LtdLCo LIÊN PHƯƠNG	B Zone, SÓNG THẦN ₂ Industrial Park , ĐƯỜNG 20, DĨ AN Dist., BÌNH DƯƠNG	Plastic
4. LtdLCo TÂN HIỆP PHONG	12 ĐT 743, SÓNG THẦN ₂ Industrial Park , DĨ AN Dist., BÌNH DƯƠNG	Textile - clothing
5. TÂN THÀNH LtdLCo	26 ĐT 743, SÓNG THẦN ₂ Industrial Park , DĨ AN Dist., BÌNH DƯƠNG	Textile - clothing
6.SIN MEI KUANG (VN) LtdLCo	3 SÓNG THẦN ₂ THỐNG NHẤT Road , DĨ AN Dist., BÌNH DƯƠNG	Chemicals
7. HWA PAO RESINS VIỆT NAM LtdLCo	1 SÓNG THẦN ₂ Industrial Park , THỐNG NHẤT Road, DĨ AN Dist., BÌNH DƯƠNG	Textile - clothing
8. Join-stock Company SHINEX COATINGS	9 SÓNG THẦN ₂ , 26 Road DĨ AN Dist., BÌNH DƯƠNG,	Chemicals
9. KIM ỨC PHONG LtdLCo	8 SÓNG THẦN ₂ Industrial Park , 743 Road, DĨ AN Dist., BÌNH DƯƠNG	Wood
10. DUPONT VIỆT NAM LtdLCo	12 KCN SÓNG THẦN Industrial Park 2, THỐNG NHẤT Road, DĨ AN Dist., BÌNH DƯƠNG	Chemicals
11. LÂM ĐẠT HƯNG LtdLCo	37 SÓNG THẦN ₂ Industrial Park, THỐNG NHẤT Road, DĨ AN Dist., BÌNH DƯƠNG	Wood
12. FRAMAS VIỆT NAM LtdLCo	9 SÓNG THẦN ₂ Industrial Park, 12 Road, DĨ AN Dist., BÌNH DƯƠNG	Textile - clothing
13. LATITUDE TREE VN LtdLCo	29 SÓNG THẦN ₂ Industrial Park , 743 Road, DĨ AN Dist., BÌNH DƯƠNG	Wood
14. THƯỢNG VIỆT wood LtdLCo	6 SÓNG THẦN ₂ Industrial Park, DĨ AN Dist., BÌNH DƯƠNG	Wood
16. GREAT EASTERN RESINS INDUSTRIAL (VN) LtdLCo	8 SÓNG THẦN ₂ Industrial Park, 17 oad, DĨ AN Dist., BÌNH DƯƠNG	Chemicals
17. HƯNG PHƯỚC LtdLCo	26 SÓNG THẦN ₂ Industrial Park , Road 6, DĨ AN Dist., BÌNH DƯƠNG	Chemicals
18. NAN PAO RESINS VN LtdLCo	10 SÓNG THẦN ₂ Industrial Park , Industrial Park , THỐNG NHẤT Road, DĨ AN Dist., BÌNH DƯƠNG	Chemicals
19. O'LEER VN LtdLCo	25 SÓNG THẦN ₂ Industrial Park , 743 road, DĨ AN Dist., BÌNH DƯƠNG	Textile - clothing
20. HSIN MEI KUANG (VN) LtLCo	3 SÓNG THẦN ₂ Industrial Park , THỐNG NHẤT Road, DĨ AN Dist., BÌNH DƯƠNG	Chemicals
21. OVAL VIỆT NAM LtdLCo	26 SÓNG THẦN ₂ Industrial Park , THỐNG NHẤT Road, DĨ AN Dist., BÌNH DƯƠNG	Equipment
22. HƯNG ĐÔNG platstic LtdLCo	LÔ E, SÓNG THẦN ₂ Industrial Park , AN BÌNH ommune, THUẬN AN Dist., BÌNH DƯƠNG	Plastic
II. Việt Hương 1 Industrial Park		
1. ASIA PAINT (VIỆT NAM) LtdLCo	15-16 VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Chemicals
2. QUỐC TẾ VIỆT HOA platstic LtdLCo	LÔ D ₂ , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Plastic
3. WEI SHENG industrial LtdLCo	LÔ G ₂ , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Textile - clothing
4. SPECTRA POLYMERS LtdLCo	LÔ J ₀ , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Plastic
5. KORBLEND 3H LtdLCo	LÔ K ₀ , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN	Plastic

	Dist., BÌNH DƯƠNG	
6. ASIA PAINT (VIỆT NAM) LtdLCo	LÔ I5-I6 , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Chemicals
7. KPACK LtdLCo	KHU C LÔ N , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Plastic
8. DER CHANG RESIN (VN) LtdLCo	LÔ K2 , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Chemicals
9. HAO SI industrial LtdLCo	LÔ I2, VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Chemicals
10. SÀI GÒN plastic, resine,electronic LtdLCo	LÔ C1 1, VIỆT HƯƠNG 1 Industrial Park , THUẬN GIAO Commune, THUẬN AN Dist., BÌNH DƯƠNG	Plastic
11. CHINLI plastic LtdLCo	LÔ H7 , VIỆT HƯƠNG 1 Industrial Park , THUẬN AN Dist., BÌNH DƯƠNG	Plastic
12. NHẢ CHÁNH LtdLCo	LÔ P1, VIỆT HƯƠNG 1 Industrial Park , THUẬN GIAO Commune, THUẬN AN Dist., BÌNH DƯƠNG	Plastic
13. DARYAR SÀI GÒN plastic LtdLCo	LÔ C6 , VIỆT HƯƠNG 1, THUẬN GIAO Commune, THUẬN AN Dist., BÌNH DƯƠNG	Plastic
III. Việt Hương 2 Industrial Park	An Tây Comm., Bến Cát Dist., Bình Dương Prov.	
1. VIỆT HỒNG LtdLCo	LÔ E1-E5 VIỆT HƯƠNG 2 Industrial Park AN TÂY comm., BẾN CÁT Dist., BÌNH DƯƠNG	Chemicals
IV. Tân Đông Hiệp A Industrial Park	Tân Đông Hiệp Comm., Dĩ An Dist., Bình Dương	
1. THÁI DƯƠNG plastic bags LtdLCo	LÔ 74 Tân Đông Hiệp A Industrial Park, Tân Đông Hiệp Comm., Dĩ An Dist., Bình Dương	Plastic
V. Tân Đông Hiệp B industrial Park	Tân Đông Hiệp Comm., Dĩ An Dist., Bình Dương	
1. PHÚ MỸ LtdLCo	1 Tân Đông Hiệp B industrial Park ,4 road, Tân Đông Hiệp Comm., Dĩ An Dist., Bình Dương	
2. DUY HOÀNG Co	KCN TÂN ĐÔNG HIỆP B ĐƯỜNG 2, H. DĨ AN, BÌNH DƯƠNG	Chemicals
VI. Đông An industrial Park	Bình Hòa Comm., Thuận An Dist., Bình Dương	
1. DƯƠNG MÔN LtdLCo	Đông An industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Plastic
2. AN LỘC sport shoes production LtLCo	An Thanh Town, Thuận An Dist., Bình Dương	Textile - clothing
3. FULL IN VIỆT NAM industrial LtLCo	47 Đông An industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Wood
4. BECKER ACROMA VIỆT NAM	Road 2, Đông An industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
5. NAM VIỆT plastic LtLCo	Road 2A, Đông An industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Plastic
VII. Bình Đường industrial Park	An Bình Comm., Dĩ An Dist., Bình Dương	
	Bình Đường industrial Park	Textile - clothing
1. SUNG HYUN VINA LtLCo	An Bình Comm., Dĩ An Dist., Bình Dương	Textile - clothing
VIII. Mỹ Phước 1 industrial Park	Mỹ Phước Town, Bến Cát Dist., Bình Dương	
1. THÁI LONG LtLCo	(Road D15) Road N7, Mỹ Phước 1 industrial Park, Mỹ Phước Town, Bến Cát Dist., Bình Dương	Chemicals
2. GRAND ART VIỆT NAM industrial wood	Road D17 Mỹ Phước 1 industrial Park, Mỹ Phước Town, Bến Cát Dist., Bình Dương	Wood
3. TAI JAAN (VN) plastic LtLCo	Road D9, Mỹ Phước 1 industrial Park, Mỹ Phước Town, Bến Cát Dist., Bình Dương	Equipment
4. KAISER VIỆT NAM industrial wood LtLCo	Road D9, Mỹ Phước 1 industrial Park, Mỹ Phước Town, Bến Cát Dist., Bình Dương	Wood
5. DIING LONG VIỆT NAM LtLCo	Mỹ Phước 1 industrial Park, Mỹ Phước Town, Bến Cát Dist., Bình Dương	Wood
6. CHÁNH DƯƠNG paper interprise LtLCo	Road D15, Mỹ Phước 1 industrial Park, Mỹ Phước Town, Bến Cát Dist., Bình Dương	Paper
IX. Mỹ Phước 2 industrial Park	Mỹ Phước Town, Bến Cát Dist., Bình Dương	
1. CHENGFENG LtLCo	Road NA6, Mỹ Phước 2 industrial Park, Mỹ Phước Town, Bến Cát Dist., Bình Dương	Chemicals

X. Việt Nam - Singapore 2 industrial Park	Hòa Lợi Comm., Bến Cát Dist., Bình Dương	
12. ASIA SHOUWA VIỆT NAM LtLCo	ĐƯỜNG 1, Việt Nam - Singapore 2 industrial Park Hòa Lợi Comm., Bến Cát Dist., Bình Dương	Plastic
XI. Tân Định industrial Park	Hiệp An Comm., Thủ Dầu Một Town, Bình Dương	
1. DUY HỒNG LtLCo	Tân Định industrial Park. TÂN ĐỊNH Comm., BẾN CÁT Dist., BÌNH DƯƠNG	Wood
2. LIÊN THÀNH plastic LtLCo	317/12 .Tân Định industrial Park, TÂN ĐỊNH Comm., BẾN CÁT Dist., BÌNH DƯƠNG	Plastic
XII. Bình Chuẩn industrial Park	Bình Chuẩn Comm., Thuận An Dist., Bình Dương	
1. SAHRA textile LtLCo	Bình Chuẩn industrial Park, Bình Chuẩn Comm., Thuận An Dist., Bình Dương	Textile - clothing
2. VIETHSING international clothing	Bình Chuẩn industrial Park, Bình Chuẩn Comm., Thuận An Dist., Bình Dương	Textile - clothing
3. HÒA GIA LtLCo	Bình Chuẩn industrial Park, Bình Chuẩn Comm., Thuận An Dist., Bình Dương	Plastic
XIII. Việt Nam - Singapore 1 industrial Park	Bình Hòa Comm., Thuận An Dist., Bình Dương	
1. CLARIANT (VIỆT NAM) LtLCo	LÔ 3 Road 2, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
2. production-trade, import and export LtLCo SON THANH ĐANG	D27B Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
3. KOK FENG VIỆT NAM LtLCo	9B Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
4. BIO INT'L LtLCo	70, Road ĐỘC LẬP, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
5. JS PLASTIC PACKAGING	1 HỮU NGHỊ Road, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Plastic
6. SHANG HORNG VIỆT NAM Ink LtLCo	42 ĐỘC LẬP	Chemicals
7. BASF VIỆT NAM construction chemicals LtdLCo	12 TỰ DO Road, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
8. AVON (VIỆT NAM) cosmetics LtdLCo	8 Road 2, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
9. NATIONAL STARCH & CHEMICAL VIỆT NAM LtLCo	23-25 Road 2, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
10. SON PHÂNIX (VN) LtdLCo	16 Road 8, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
11. NEW TOYO VIET NAM LtdLCo	6 Road 8, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Paper
12. SEAMASTER (VIỆT NAM) paint LtdLCo	6 1 Road TỰ DO, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
13. SAKATA INX VIỆT NAM LtdLCo	33 Road TỰ DO, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
14. NITTO DENKO (VIET NAM) adhesive band	MAPLE TREE Storage, C zone, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Textile - clothing
15. VIET NAM PARKERIZING LtdLCo	12 Road ĐỘC LẬP, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
16. SENSHO INDUSTRY VIET NAM LtdLCo	20 Road 2, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Plastic
17. TSUCHIYA TSCO VIỆT NAM LtdLCo	5 Road ĐỘC LẬP, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Textile - clothing
18. JU HYUNG VINA LtdLCo	9 Road 8, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Plastic
19. PHÂNIX PAINT (VN) MANUFACTURING CO, LTD	16 Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Chemicals
20. DERHAO TEXTILE (VIỆT NAM) LtdLCo	3 Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Textile - clothing
21. NATIONAL STARCH & CHEMICAL (VIET	23 Road 2, Việt Nam - Singapore 1 industrial Park, Bình	Chemicals

NAM)	Hòa Comm., Thuận An Dist., Bình Dương	
22. VIET NAM PARKERIZING LtdLCo	12 ĐỘC LẬP Road,	Chemicals
23. DAILY MANY INTERNATIONAL LtdLCo	8B Road 2A Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Plastic
24 DAR MAY VIỆT NAM LtdLCo	38 Road ĐỘC LẬP, Việt Nam - Singapore 1 industrial Park, Bình Hòa Comm., Thuận An Dist., Bình Dương	Textile - clothing
XIV. Sóng Thần 1 industrial Park	Dĩ An Town, Dĩ An Dist., Bình Dương	
1. PLANTATION GROWN TIMBERS (VIET NAM)	9 Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Wood
2. JOTUN PAINTS (VIET NAM) LtdLCo	Zone 145-146, Road 10, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Chemicals
3. SC - JOHNSON & SON VIỆT NAM LtdLCo	Road 9, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Chemicals
4. FCANCOM VIỆT NAM LtdLCo	Zone 10 Road 8, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Wood
5. SRITHAI VIỆT NAM	9 Road 2, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Plastic
6. BÌNH MINH plastic LtdLCo	7 Road 2, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Plastic
7. ASIA POLY TEC LtdLCo	Storage C2, Zone D Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Plastic
8. BÌNH DƯƠNG packaging LtdLCo	Storage 5A, Zone O, Road 10, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Plastic
9. HANSHIN VINA Textile LtdLCo	Zone O, Road 8, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Textile - clothing
10. THÁI DƯƠNG Textile LtdLCo	Zone O, Road 10, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Textile - clothing
11. HƯNG THỊNH paper LtdLCo	Zone O, Road 10, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Paper
12. MINH HIỆP Textile LtdLCo	Zone J2 Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Textile - clothing
13. Chemical technology LtdLCo NANO	7 ĐỘC LẬP, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Chemicals
14. SCANCOM VIỆT NAM LtdLCo	Zone 10, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Wood
15. Industrial CHEMTECH LtdLCo	8 Road 6, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương	Chemicals
16. NHẤT PHẨM LtdLCo	Storage BÌNH AN, Road 10 Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương,	Chemicals
17. HƯNG ĐÔNG plastic LtdLCo	Storage C4, Zone D Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương,	Plastic
18. QUANG MINH furniture LtdLCo	Road 10, Sóng Thần 1 industrial Park, Dĩ An Town, Dĩ An Dist., Bình Dương,	Wood
XV. Bình An textile industrial Park	Bình Thắng Comm., Dĩ An Dist., Bình Dương	
1. Investment & development joint-stock Company THIÊN HƯNG	Bình An textile industrial Park, Bình Thắng Comm., Dĩ An Dist., Bình Dương	Textile - clothing