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**VIET NAM POPS AND SOUND HARMFUL CHEMICALS MANAGEMENT PROJECT**

**PROJECT TERMINAL AND LESSON LEARNT REPORT**

Executive Agency: **Ministry of Natural Resources and Environment**

Project owner: **Vietnam Environment Adminstration**

***Ha Noi, March 2021***

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# 1. General Information

## 1.1. Project information

Project title (Vietnamese): Dự án Quản lý an toàn các chất ô nhiễm hữu cơ khó phân hủy (POP) và hóa chất nguy hại tại Việt Nam

Project title (English): Vietnam POPs and Sound Harmful Chemicals Management Project

Project code: 91381

Place: Nationwide

Donor: Global Environmental Facility (GEF) through the United Nations Development Programme (UNDP)

Executive Agency: Ministry of Natural Resources and Environment

Project owner: Vietnam Environment Adminstration

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

Project duration: 2016 – 2020, in details:

* *Date of investment decision: 20/8/2015 (Decision 1414/QD-TTg dated 20/8/2015 by the Prime Minister)*
* *Date of Project Document approval: 18/12/2015 (Decision 3310/QD-BTNMT dated 18/12/2015 by the Minister of Natural Resources and Environment)*
* *Date of signing of agreement between UNDP and MONRE for project implementing: 29/01/2016*
* *Date of project completion as per Project Document: 2018*
* *Date of project completion as per approval of extension: end of July 2020 (Decision 847/QD-BTNMT dated 8/4/2019 by the Minister of Natural Resources and Environment)*
* *Actual date of completion: end of July 2020*

Funding: Total project budget is 13.600.000 USD, including:

* *GEF/UNDP fund: 2.550.000 USD*
* *Jica project fund: 3.000.000 USD*
* *Total co-funding: 8.050.000 USD, including:*
* *MONRE - in cash: 200.000 USD*
* *Binh Duong Province - in cash: 69.904 USD*
* *MONRE - in kind: 5.700.000 USD*
* *MOIT- in kind: 150.000 USD*
* *Binh Duong Province - in kind: 910.096 USD*
* *Nghe An Province - in kind: 1.020.000 USD*

## 1.2. Project description

### 1.2.1. Objectives and scope of the project

According to the approved Project Document, the overall and specific objectives of the project are as follows:

***Overall objective:*** continued reduction of environmental and health risks through POPs and harmful chemicals release reduction

***Specific objectives:***

a) Develop and supplement an integrated legal and institutional framework to more effectively implement the provisions of the Stockholm Convention on POPs;

b) Develop and pilot the Pollutant Release and Transfer Register System (PRTR) and applicable to at least 20% of industrial waste sources in a selected province for environmental safety management and reporting POPs and mercury;

c) Develop an environmental safety management framework for chemicals, towards strengthening the capacity to manage POP polluted areas and inheriting the results and experience from projects in the GEF4 cycle and national programs and projects.

### 1.2.2. Management Arrangements

***a.*** ***Project Organization Structure***

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 is executed by MONRE, which assume the overall responsibility for the achievement of project results as the UNDP’s National Implementing Partner (NIP). This NIP is subject to the micro assessment and subsequent quality assurance activities as per Harmonized Approach to Cash Transfers to Implementing Partners (HACT) framework. UNDP provide overall management and guidance from its Country Office in Hanoi and the Asia Pacific Regional Centre (APRC) in Bangkok, and is responsible for monitoring and evaluation of the project as per normal GEF and UNDP requirements.

The project is implemented in accordance with  the Harmonized Programme and Project Management Guidelines (HPPMG), which have been agreed and approved by UNDP and the Government of Viet Nam.

***b. Personnel***

The project is related to a number of different ministries and sectors, including two major ministries, namely the Ministry of Natural Resources and Environment and the Ministry of Industry and Trade. Therefore, the project established a Project Steering Committee (PSC) including: PSC Chairperson (Ministry of Natural Resources and Environment) and members from UNDP Vietnam, Ministry of Industry and Trade, and Ministry of Agriculture. and Rural Development, Ministry of Health ... (see list of PSC members in Annex 5). The Project Steering Committee oversee the implementation of the Project Management Unit (PMU). The main function of the Project Steering Committee is to provide the necessary orientations to help the project operate and achieve policy and technical goals, and direct the implementation of the Project Work Plan.

The Ministry of Natural Resources and Environment assigns the Vietnam Environment Adminstration to be the Project Owner, collectively responsible for the project results and manage the project implementation according to the Project Document. In order to ensure the implementation of project ownership and effectiveness in the implementation of project activities, the Vietnam Environment Administration set up a Project Management Unit (PMU), including: the Project Director; Deputy Project Directors; Project Coordinator; Project Chief Accoutant and other members of the Project Management Unit (see the list of PMU members in Annext 6).

The PMU is responsible for project planning and management; carrying out bidding and contract management activities; financial management, assets and disbursement; administrative management and project coordination; monitor, evaluate and report on project implementation.

The National Project Director, the Deputy National Project Directors and the Coordinator are appointed by the Vietnam Environment Administration and are responsible for reporting to the Project Steering Committee. The National Project Director is responsible to the Ministry of Natural Resources and Environment, the Vietnam Environment Administration, the Project Steering Committee and the Donors for the project implementation, and the overall management of all project activities, including the implementation of the Annual Work Plan (AWP) and budget, hiring of experts, organizing training workshops and other activities to ensure the project is implemented in accordance with the approved plan. At the same time, ensure the achievement of the intended results as stated in the Project Document, as well as the financial management and effective use of UNDP-GEF funding and the establishment of a monitoring and supervision mechanism.

The National Project Director implements mechanisms to ensure the continuous, effective and effective participation of stakeholders in the implementation of the project, guides the project team in coordination with UNDP, monitors the implementation of administrative regulations at the request of the Government of Vietnam and UNDP by holding regular meetings with stakeholders, conducting feedback surveys, conducting project management effectively with the close engagement of UNDP Viet Nam.

The Project Deputy Director assists and implements the National Project Director's authorization to guide the project team in coordination with UNDP, monitors the implementation of administrative regulations at the request of the Government of Vietnam and UNDP, conducts project management effectively with the close engagement of UNDP Viet Nam.

The Project Coordinator is responsible for assisting the National Project Director, the National Deputy Project Director in managing the project's technical financial aspects; support the management, monitoring and updating information on project implementation progress; liaise and coordinate with project staff, consultants and other stakeholders to ensure the project is implemented according to the set goals.

Project Chief Accountant helps the National Project Director manage finance, register and manage the portfolio of assets from the funding source and implement the financial reporting, accounting and auditing regimes according to the current financial regulations of Vietnam and Donors.

Other members of the Project Management Unit are responsible for assisting the National Project Director, National Depuy Project Director, Project Coordinator and Project Chief Accountants in carrying out project-related work.

Project management unit (National Project Director, National Depuy Project Director, Project Coordinator and Project Chief Accountants and other members) are appointed and work and receive salary and allowances on part-time basis.

In the first 2 years, 02 technical support staff have been recruited and signed contracts (receive salary from counterpart fund in line with the state regulations), in order to ensure coordination with donors and stakeholders involved in project implementation. 02 technical support staff have the following tasks:

- Collect and synthesize information, support activities of building and implementing the legal framework on POP and PTS management; policies, regulations and technical guidelines for the management of polluted areas; support the preparation of TORs for project activities, review of Vietnamese technical reports ...

- Prepare and update project work plans, prepare monthly, quarterly reports, support the organization and implementation of project events (meetings, seminars, training courses, associations field survey, etc.), facilitating the coordination of technical assistance services related to project preparation, arranging meetings between the PMU and the consultants/consultancy companies, monitor the implementation of planned project activities, support national and international consultants to conduct onsite activities.

From October 2016 to now, the project has recruited and signed contracts for 03 positions, including: 01 Project Manager, 01 Project Accountant and 01 Project Assistant/Interpreter. The salaries of these three staff are paid by the project from ODA fund.

# 2. Results of implementaion

## 2.1. Objective realisation

*(Level of achieving the objectives set out in the approved Project Document)*

The project has achieved its objectives, specifically:

- Integrated environmental management of POP/PTS into the draft Law on Environmental Protection and the Law on Chemicals, and amended and supplemented a number of legal documents (such as Circulars, Decrees, Decisions, QCVN, Technical Guidelines, etc) for the sound management of POP/PTS.

- Developed and piloted the Pollutant Release and Transfer Register System (PRTR) and applied to 20% of industrial waste sources in Binh Duong.

- Developed guidelines for environmental safety management of POP/PTS and strengthened the management capacity of POP contaminated areas for relevant officials of the Department of Natural Resources and Environment of Binh Duong and Nghe An Provinces.

As such the project has helped reduce environmental and human health risks.

## 2.2. Components and outcomes

All outcomes and components already completed, the level of achievement as follow:

| **Results** | **Indicator** | **Level of achievement** |
| --- | --- | --- |
| **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.** | | |
| 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. | * Availability of gap analysis. * Availability of regulatory improvement plans * Number of recommendations from gap analysis reports taken into account in Law/regulatory improvement plans | * Report on reviewing the gap and overlap between the Law on Environmental Protection and the Law on Chemicals in environmental management for chemicals produced * Plan to strengthen legal framework/complete legal documents on environmental safety management for POPs and PTS developed * Proposal on contents of POP / PTS safety management in the draft Decree amending the Decrees guiding the implementation of the Law on Environmental Protection prepared |
| 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. | * The Regulation on response to waste incidents was issued under the Prime Minister's Decision 09/2020/QD-TTg dated March 18, 2020. |
| Output 1.1.3.  Strengthen enforcement of legal instrument in the Laws or Decrees/regulations in place, including amendment of Law and regulation as well as additional tools and sanctions if neccessary, toward harmonization and simplification. | * 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. | * 2 National technical regulations (QCVN 51:2017/BTNMT on steel production gas emissions and QCVN 52: 2017/BTNMT on steel production wastewater are issued under Circular No. 78/2017/TT-BTNMT dated December 29, 2017 by the Minister of Natural Resources and Environment. * The amended Law on Environmental Protection and the Law on Chemicals included the content on environmental management for chemicals |
| Output 1.1.4. Guidelines integrating environmental control of POPs and PTS within the overall chemicals management framework | * Availability of technical guidelines on POPs/PTS developed covering environmental protection and chemical safety following their life cycle management * Availability of an emergency preparedness and prevention operational plan | * 2 technical guidelines drafted for environmental protection plans for the plating and thermal power industries * Draft of environmental protection plan of Uong Bi Thermal Power Plant |
| Output 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 | * Regulatory tool for the implementation and enforcement of POPs / PTS reporting and PRTR established | * Circular on PRTR drafted * 6 PRTR technical guidelines have been drafted for plating, thermal power, metallurgy, rubber, waste and wastewater treatment |
| **Outcome 1.2. Key institutions have knowledge and skills to formulate and implement neccesary chemicals and environment policies, consistent with sound chemicals management principles and international convention requirements** | | |
| Output 1.2.1. Active participation of Vietnam in the International Conference on Chemicals Management. | * Number of government officials who actively participated in ICMMs | * 6 leaders and officials of VINACHEMIA (MOIT) and VEA (MONRE) paid a working visit to the Environmental Protection Agency (EPA) and American Chemistry Council's (ACC) to discuss and exchange experiences on chemical management policy between the US and Vietnam |
| Output 1.2.2.  Conduct an initial survey of GHS implementation in Vietnam, 30 professionals trained in implementation of chemicals classification and labelling in global harmonized system and adaptation of the EU REACH/ROSH approach for application in VN | * Number of company surveyed for GHS implementation * 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. | * 230 enterprises participated in the survey, of which 100 enterprises in the North, 100 enterprises in the South and 30 enterprises in the Central region. * 31 participants, of which 16 were from central ministries and 15 from provincial Departments of Industry and Trade and Departments of Natural Resources and Environment |
| Output 1.2.3.  Facilitate the Implementation of common national procedures for chemicals environmental and health risk assessment. Conduct a Pilot of processes for risk assessment of mercury in a priority sector. | * 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. * Availability of a pilot of processes for risk assessment of mercury in a priority sector. | * The report proposes the content of chemical risk assessment in the Chemical Law and in the incident prevention and response plan. Currently the draft Chemical Law has included this content. * 27 participants from related ministries and departments of Industry and Trade * Report on piloting the Mercury risk assessment process at Rang Dong Thermos Bulb Company |
| Output 1.2.4. Market based policy initiative developed to promote reduction in POPs releases and POPs disposal | * Market based policy initiative in place to promote hazardous chemicals / hazardous waste management. * Established private / public partnership on the matter. | * Drafted the Vietnam Green Label Criteria for clothing products * Piloted the application of the draft criteria at 01 enterprise to assess the feasibility of the draft criteria before issuance |
| **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.** | | |
| Output 2.1.1. Ambient environment and receptor 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. | * Produced a report with basic information about POPs and Mercury in the environment and in receiving sources |
| Output 2.1.2. Comprehensive assessement and inventory of POPs/PTS monitoring capacity, indentify needs of POPs/PTS in key areas. | * Numbers of laboratories assessed * Availability of an inventory report on laboratories capacity, including equipment, procedure, human resourses and others for POPs analysis and monitoring, | * 14 laboratories/monitoring centers under MONRE and 55 laboratories/monitoring centers under DONRE assessed * A report on capacity assessment of laboratories under the Ministry of Natural Resources and Environment and the Department of Natural Resources and Environment was made, which clarifies personnel, equipment and the ability to monitor and analyze POPs and Hg. |
| Output 2.1.3.Contribute to the State of Environment Report on Chemicals/Hazardous Chemical and POP/PTS | * Availability of information/data of POPs/PTS and hazadous chemicals in the Environment for the Status of Environmental Report | * 3 articles produced, 1 on the situation of POP and Hg management in Vietnam; 1 on the situation of Hg emissions from some major industries; and 1 on the status of POP emissions and management. |
| **Outcome 2.2. National POPs/PTS laboratory network for support of ambient environment and receptor monitoring certified/accredited.** | | |
| Output 2.2.1. Up to 2 laboratories accredited to international standards to support POPs/PTS monitoring | * Number of laboratories accredited to international standards | * 2 laboratories accreditedfor ISO/IEC 17025:2017, incluing the Southern Environmental Monitoring Center and the Hai Duong Environmental Monitoring Center |
| 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 and requirements | * Number of laboratory staff successfully trained on POPs / PTS monitoring | * 149 managers and technical staff of 43 monitoring centers had basic knowledge about POP and PTS analysis and monitoring. * 23 managers and technical staff of 15 monitoring centers have in-depth knowledge and skills on PAH analysis and monitoring in waste sludge using gas chromatography coupled to mass spectrometry. * 19 managers and technical staff of 11 monitoring centers have in-depth knowledge and skills in mercury analysis and monitoring in flue gas emissions. * 18 managers and technical staff of 11 monitoring centers have in-depth knowledge and skills on PBDE analysis and monitoring in plastics and wastewater. * 19 technical staff of Hai Duong Environmental Monitoring Center and 11 officers of the Southern Environmental Monitoring Center had knowledge on ISO/IEC 17025:2017 and its 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 * Level of piloting PRTR at provincial level | * POP / PTS emissions database has been completed for Binh Duong province * PRTR reporting system has been developed and tested in Binh Duong province |
| **Outcome 3.1. Key policies, regulations and technical guidlines for management of POPs contaminated sites are in place** | | |
| 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. | - Produced a report on reviewing standards standards related to POP / PTS in soil   * Assessed the implementation of QCVN 45:2012/BTNMT, QCVN 15: 2008/BTNMT and QCVN 54: 2013/BTNMT and proposed revisions * Drafted a new QCVN on residues of pesticides in soil. * Produced a baseline report, proposed a new financial mechanism to implement Decision 1946/QD-TTg dated October 21, 2010 |
| Output 3.1.2. Risk management procedures and guidelines for contaminated sites developed. | * Availability risk management procedures and guidelines for contaminated sites developed | * A technical guidance for sustainable management of residual polluted areas was prepared * A Guide for communities living around the polluted areas was prepared |
| Outcome 3.1.3 National consolidated POPs contaminated sites inventory developed and prioritized. | * Availability Upgraded POPs contaminated sites inventory. | * A report on preliminary survey results of areas contaminated with pesticides along Ho Chi Minh trail was made * A report was made on inventory, quantity, types, storage status, POP pollution at Viet Tri factory and proposed a plan of collection, packaging, transportation and disposed. |
| **Outcome 3.2 Provincial Management Plan for the Demonstration Provinces.** | | |
| Output 3.2.1:  Support POPs/ PTS management plan at the two pilot provinces | * Availability of POPs/PTS management plans in 2 provinces * Volume of UPOPs release reduction estimated * Number of local people safeguarded and benefited | * A plan for sustainable environmental management of polluted areas due to pesticide residues in Nghe An province in the period of 2019-2020 and a vision to 2030 was issued by Nghe An Provincial People's Committee (Plan No.142/KH -UBND dated March 14, 2019). Based on the approved plan, Nghe An has implemented 34 projects, handled more than one thousand tons of POPs waste at 62 contaminated sites in Nghe An. More than 1,000 households benefited from this safe disposal. * 4 drafts of environmental management plans for hazardous chemicals integrated into the environmental management plans of Binh Duong, Ha Tinh, Quang Binh and Quang Tri provinces. |
| Output 3.2.2. 50 technical officers and decision makers from ministries 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. | * Number of national and provincial staff successfully trained on contaminated sites management | * 100 delegates, of which 61 were officials from departments and 39 and officials from enterprises and consulting units nationwide were trained on technical guidance for sustainable management of residual polluted areas. |
| Output 3.2.3. Public awareness raising on 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 residents. | * 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 * Number of local people safeguarded and benefited | * 80% of population living around polluted areas in Quang Binh are knowledgeable about issues related to residual POPs pollution and have participated in developing a sustainable management plan for polluted areas. * 100% of households living in polluted areas in Nghe An have received leaflets and Q&A brochures on sustainable management of residual polluted areas. * 1176 people of 96 households living near contaminated sites in Lam Hoa commune, Quang Binh district benefited from contaminated sites being treated |
| Output 3.2.4. Clean up of the Lam Hoa site in Quang Binh. | * Availability of detailed Environmental Assessment and Environmental Management Plan for the site. * Availabulity of EA and EMP report. * Amount of POPs stockpile destroyed. * Level of safety of the sity after remediation * Amount of POPs pesticide and POPs contaminated soil destroyed and safeguarded * Number of local people safeguarded | * Activities of evaluating and formulating environmental management plan for polluted areas in Lam Hoa and Quang Binh have been implemented * A report on assessment and environmental management plan for polluted areas in Lam Hoa, Quang Binh was produced * 11 hotspots have been zoned, more than 50 tons of POP waste have been collected and treated, more than 280 tons of contaminated soil have been isolated and managed sustainably. * More than 1,000 people living around the contaminated area are safe |
| **Outcome 4.1. Mercury baseline source and release inventory developed.** | | |
| 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. | * - A report on inventory of sources and the amount of mercury released from major industries has been produced |
| Output / Activity 4.1.2 Questionnaire survey, process analysis, site visits for a number of possible mercury release sources | * Completion of questionnaire survey and site visits to mercury release sources * Number of sectors selected for the mercury inventory | * - Survey questionnaires have been developed and used to investigate the amount of Hg emissions from a number of industries. * - 4 industries have been selected for Hg emissions inventory |
| Output / Activity 4.1.3 Identification of main manufacturing products which may contain mercury. | * Availability of a database of mercury containing products developed. | * A database on Hg in light bulbs, medical devices and cosmetics has been created |
| Output / Activity 4.1.4 Road Map on sound mercury management and the reduction of mercury release | * Availability of a preliminary roadmap for the reduction of mercury release and replacement of mercury containing product drafted | - A strategy/plan on Hg emission reduction and elimination of products containing Hg has been developed |
| **Outcome 4.2. Increased knowledge and awareness of mercury source and releases** | | |
| Output / Activity 4.2.1. Information outreach workshops (2 nos) conducted to provide information on source and release of inventory. | * Number of information outreach workshops conducted to provide information on sources of mercury and mercury alternatives in processes. | * Three rounds of communication workshop were held in Hanoi, Nghe An and Binh Duong |

(Annex 1: Logical framework)

## 2.3. Financial performance

The total disbursed amount to 30/6/2020 is 295,890.2 million Vietnamese Dong, accounting for 100% of the total signed budget as per the Project Document, of which:

* The disbursed ODA fund is 2,459,296 US Dollar, equivalent to 56,071.96 million Vietnamese Dong, accounting for 96% of the total ODA fund signed under the Project Document.
* The disbursed counterpart fund from the state budget is 239,818.89 million Vietnamese Dong, accounting for 101% of the total co-funding budget committed under the Project Document.

(Annex 2: Final report of project disbursement)

## 2.4. Factors affecting the implementation of the project

# The objective of the project is consistent with the national environmental protection strategy and plan for chemicals and in accordance with the laws, so the project receives the attention and direction of the leaders of relevant government agencies, such as: Ministry of Natural Resources and Environment, Vietnam Environment Administration, Ministry of Industry and Trade, Vietnam Chemicals Agency, Department of Environmental Quality Management, Department of Waste Management, etc. The project objectives are in line with the strategic goals of GEF and UNDP on chemicals, therefore, the donors have paid great attention to the project.

# Besides the beneficial effects, the project also faces many difficulties, namely:

* The project establishment and recruitment of project manager, project accountant and project assistant cum intepreter lasted nearly a year, which affected the project progress.
* The preparation, evaluation and appraisal of Annual Workplan, Quarterly Workplan, Procurement Plan had to follow the regulations and guidelines from the donor and the Government of Vietnam, which consumed more time on adminstrative procedures, especially the procurement process and selection of contractors must strictly follow the regulations of the GoV, thus prolonged. Each bidding package needed at least 1 to 4 months from TOR preparation to signing contract.
* The project extension also faces certain difficulties both from donors (due to new policies) and from state agencies, causing challenges to the project implementation in 2018
* It was difficult to find knowledgable experts since there were new issues and concepts.

# 3. Analysis of socio-economic efficiency

## 3.1. Analysis against project objectives and design

(*Analyze the project implementation towards achieving the project goals and contribute to the implementation of the Government's 5-year Socio-Economic Development Plan goals and tasks*)

Among the “Primary objective and solutions” listed in the Five Year Socio Economic Development plan (2016 to 2020), N°6 concerns “Actively cope with climate change, prevent and cope with natural disasters, enhance the management of natural resources and environment protection”

In the table below, an analysis of the goals ad tasks identified by the SEDP 2016-2020 and the corresponding project achievement is provided.

|  |  |
| --- | --- |
| **SEDP 2016-2020 Overall goals relevant to the project** | |
| ***Goals*** | ***Project achievements*** |
| Develop culture, exercise democracy, progress, social justice, social security, ensure social welfare and improve people’s lives. | The main objectives of the project is the “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”. The project therefore undertaken a number of activities aimed at improving the regulation on Persistent Organic Pollutants and Mercury, dispose and destroy POPs, establish a modern system for monitoring industrial emissions and enhance the capacity of the country in the technical field of environmental sampling and analysis, as well as monitoring of industrial effluents. Based on Article 25, of the UN Human Right Declaration “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family….”. A healthy environment should be considered as a pre-condition for the full enjoyment of human right. The project was effective at reducing the risk for the environment and human health through the control and prevention of the use and release of very toxic substances (persistent organic pollutants and mercury) in the environment. |
| Actively respond to climate change, effectively manage resources and protect the environment. | All the project outcomes are all oriented toward the protection of the environment. Component 1 of the project mainly dealt with the establishment of a regulatory policy framework: **“Project Component 1. Policy framework for sound chemicals management, including POPs/PTS developed and implemented**”. Under this component, the development of the regulatory framework of POPs, mercury and circular economy where undertaken. In 2018, the project supported the review of the Environmental Protection Law and the Chemical Law and made recommendations to adjust these laws. In 2019, these two laws have been amended. Currently, further revisions are being undertaken with support from the project staff concerning the management of chemicals, integration of new POPs in the legislation, inclusion of circular economy principle in the LEP. Provinces (Binh Duong, Nghe An, Ha Tinh, Quang Binh and Quang Tri) have also paid attention to integrating the sound management of contaminated areas in the provincial environmental protection plan  Component 2 of the project “**Monitoring and report of POPs and PTS”** has envisaged the development of the Pollutant Release and Transfer Register (PRTR) in one demonstration province (Binh Duong), with the direct sampling and analysis of POPs and mercury in several industrial plants, the development of a PRTR software integrated with the Binh Duong environmental management software, the development of roadmaps for the elimination of POPs and mercury, the certification and training of laboratories to undertake environmental sampling of POPs and mercury. In This component, 2 laboratories under 2 Enviromental Monitoring Central with support from the project also got International Certificate on organization and operation conform with the requirements of ISO/IEC 17011:2017. Component 3 of the project “**Management of POPs contaminated sites**” ensured the final disposal of around 50 tonnes DDT and 280 tonnes of DDT contaminated soil in the Lâm Hóa commune, Tuyên Hóa district, Quảng Bình province, as well as the completion of the environmental management plan for areas contaminated with pesticides residue in Nghe An province and the drafting of environmental management plans for areas contaminated with pesticides residue in Ha Tinh, Quang Binh and Quang Tri.  Through the implementation of component 4 of the project “**National mercury baseline inventory and release reduction strategy”,** analysis of mercury emission from industrial effluents, compilation of the updated inventory of mercury releases in line with the Minamata convention, inventory of products containing mercury in Vietnam, and the development of a roadmap for the phasing out of mercury products and the reduction of mercury releases have been achieved. |
| Striving to basically grow our country into a modernized industrial country. | A modernized industrial country is a country where manufacturing and industrial activities are not undertaken at the expenses of the environment and the society, but instead contribute to the social and economic development of the society. The externalization of environmental costs is unacceptable in a country where the development is expected to follow a socialist model. The project, therefore, endeavored to modernize the industry in the sense that the quality of services related to the environmental monitoring and reporting were certified and enhanced: The capacity of 43 centers of environmental monitoring under MONRE and DONREs was strengthened. Secondly, industries participated in the implementation of the PRTR system and in the Binh Duong province, allowed for the sampling and monitoring of POPs and heavy metals in their effluents and to enter relevant pollutant release data into the PRTR database. The scaling up of the PRTR, which is being ensured after project closure through international cooperation with UNITAR and US-EPA and with support from the government, is a key step undertaken under the project to ensure the modernization of enterprises. |

|  |  |
| --- | --- |
| **SEDP 2016-2020 Tasks and Solutions** | |
| ***Tasks and Solutions N°8*** | ***Associated project outputs and project achievements*** |
| Actively responding to climate change, preventing natural disasters, enhancing natural resource management and environmental protection” | All project outcome and outputs are devoted to environmental protection. Climate change is directly considered in the project through the inclusion of GHGs in the PRTR list of chemicals. |
| Enhancing the State’s governance, improving the legal system, mechanisms, policies and synchronously implementing solutions to actively respond and adapt to climate change, preventing natural disasters, managing natural resources and protecting the environment. | Component 1 of the project “**Policy framework for sound chemicals management, including POPs/PTS developed and implemented.”** Mainly dealt with the improvement of the regulatory framework of Vietnam in the field of mercury and POPs. Under this component, revision of the LEP, drafting of a circular on PRTR, environmental provincial plans have been developed. |
| Focusing on the inspection and strictly handling violations; also enhancing information and communication with the people to raise awareness, consciousness and responsibilities. | Component 2 of the project ensured a better capacity of the government laboratories in undertaking sampling and analysis, a better control and sharing of environmental information through the development of the PRTR system, and awareness raising through a massive training activity. |
| Enhancing the capability to forecast and warn of natural disasters, monitoring climate change. | The project activity is not related to the forecast of natural disaster, although the improvement of climate change monitoring would be achieved through the inclusion of GHGs among the parameter to be reported through the PRTR system (project component 2). |
| Highlighting the roles of line industries, authorities and the armed forces; promoting the roles of the community, enterprises and enhancing international cooperation, effectively implementing prevention of natural disasters, responding to climate change and improving the efficiency of search and rescue missions. | Except the enhancing of international cooperation, these tasks are not relevant for the project as the project objectives and outcomes are not related to the prevention of natural disaster. On a side note, however, it has to be considered that the disposal of 50 tonnes DDT and 280 tonnes of DDT contaminated soil which otherwise would be exposed to flooding events, will go in the direction of preventing environmental the secondary contamination resulting from natural disasters. |
| Improving environmental quality and the living conditions of the people. Implementing socialization in environmental protection and remediation. Strictly controlling sources of pollution. | The project has been effective in improving the environmental quality and hence the living condition of the people in the following ways:   * By decontaminating areas polluted by pesticides (the DDT hot spots in the Lâm Hóa commune, Tuyên Hóa district), the risk for the residents has been reduced; * By piloting the PRTR in the Binh Duong, with potential for scaling up the PRTR countrywide, a stricter control of pollution sources is being ensured; * By ensuring the certification of one laboratory in undertaking POP sampling and analysis, and increasing the capacity of 43 DONRE laboratories through practical training, the capacity to strictly controlling the source of pollution has been enhanced. |
| Planning and building waste treatment facilities in regions and villages. Limiting and gradually preventing pollution in craft villages, river basins, economic zones and clusters, urban areas and highly populated rural areas. Focusing on thoroughly handling establishments that cause serious pollution. | The project, through the completion of component 3, beside ensuring the cleaning up of a DDT contaminated area, has completed the environmental management plan for areas contaminated with pesticides residue in Nghe An province and the drafting of environmental management plans for areas contaminated with pesticides residue in Ha Tinh, Quang Binh and Quang Tri. The project has also ensured support to the environmental management plan of the Binh Duong province. The environmental management plans aims at anticipating solutions related to polluted areas and establishment causing serious pollution. However, these management plans will need implementation of practical measures and availability of governmental budget to be put in practice. |
| Controlling the air quality in highly populated urban areas. Implementing emission regulations and standards and technologies following appropriate roadmaps. | PRTR, implemented and piloted under Component 2 of the project, is an important step toward the regulation and control of emission of industrial sources. |
| In the process of establishing, evaluating and approving programs and projects using State Budget’s capital, there is a need to ensure the integration of considerations for sustainable development, climate change and green growth. | The project has provided substantial technical assistance through the inclusion of Circular Economy and POPs in the LEP as well as in the Vietnam Social and Economic Development Strategy 2021-2030 currently under approval. |

## 3.2. Impacts on the sector and region

*(Analyze the implementation of the project affecting the relevant industries and regions: economy, science and technology, environment, socio-culture, etc.)*

The main goal of the project does not concern the economic development, but instead the improvement of the environmental protection and control in Vietnam. However, a more effective environmental protection cannot be achieved if the impact on the economy is too high. The model pursued by this project has been to reverse the externalization of the environmental cost associated with industrial manufacturing and the use of chemicals – and specifically mercury – for specific products. Industries have been requested to enhance – through the PRTR reporting – the control and sharing of information related to the emission of pollutants. Alternative to specific mercury products (lighting, medical devices) have been already identified and are available in the market. The remediation of contaminated area brought back to the community the safe use of previously contaminated land, with both social and economical benefit.

The main social and cultural impact associated to the project are associated with the massive awareness raising and training performed under the project, and in the extensive cooperation it has established with academy, international experts, bilateral donors.

The project has also improved the technological capacity of the country in term of monitoring capacity. The capacity of 43 centers of environmental monitoring under MONRE and DONREs was strengthened through surveys, a round-robin test to verify their performance, certification of one lab to undertake analysis of POPs. and thirdly, class and laboratory training.

The direct environmental impact of the project has been mainly associated to the remediation of the contaminated site in the Lâm Hóa commune, where 200m3 of contaminated soil have been safely disposed of. The environmental impact of the project will however be sustained through the further development and scaling up of the PRTR system and through the approval of the proposed amendments to the Laws on Environmental Protection and on Chemicals.

## 3.3. Sustainability

*(Identify the factors that ensure sustainability and promote the effectiveness of the project)*

As reported in the project document, several ways were envisaged to ensure the sustainability of the project. The analysis of the planned sustainability actions and the achievement of sustainability of results is reported in the table below.

|  |  |
| --- | --- |
| **Sustainability pillars for the project and project achievements** | |
| ***Pillar 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.* | ***Achievements and sustainability plans.***  *As explained in the previous sections, the regulation effort under the project has been substantial. The project has contributed to the revision of the Law of Environmental Protection of Vietnam, and has provided additional assistance for the further amendment of that regulation. Furthermore, under the project several draft regulations have been completed: A Vietnam Green Label for clothing products in Vietnam has been drafted and piloted in one enterprise to assess the feasibility of the criteria.*  *A new QCVN on residues of plant protection chemicals in soil has been drafted.*  *A detailed guidance on the implementation of the "Chemical risk assessment process" was completed and included in the draft Chemical Law and integrated into the Prevention and Control Plan on chemical incident response. The guidance was based on the pilot risk assessment conducted on two mercury enterprises.*  *A POPs and Hazardous Chemicals Management Plan in Binh Duong province has been completed and endorsed.*  *The environmental management plan for areas contaminated with pesticides residue in Nghe An province as been completed and endorsed, whilst environmental management plans for areas contaminated with pesticides residue in Ha Tinh, Quang Binh and Quang Tri have been drafted.*  *A draft PRTR circular has been prepared. The PRTR system has been integrated with the environmental management software of the Binh Duon province which committed for its scaling up and continuation.* |
| ***Pillar 2) Enforcement and data availability.***  *In Vietnam, 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.* | ***Achievements and sustainability plans.***  *As explained in previous sections of this report, the activity related to the PRTR development and demonstration has been one of the main achievements of the project. That envisaged the sampling and analysis of POPs in industrial effluents, the development of guidance documents for key sectors (power plants, chrome plating, and more recently, incineration, rubber manufacturing, water treatment plant, and iron and steel), the development of a PRTR software; the piloting of the PRTR software with 20 industries in Binh Duong; the development of a PRTR excel database containing information of 400 enterprises in Binh Duong.*  *The following actions are ongoing to ensure the sustainability of the PRTR in Vietnam:*  *The Binh Duong province has integrated the PRTR software into their environmental management software, and is therefore supportive to facilitate the further improvement and scaling up of PRTR activities;*  *The circular on PRTR is currently under revision to be endorsed at national level*  *A cooperation with US-EPA and UNITAR on the further development of the PRTR system to ensure its compliance with international standards (i.e the UNECE protocol on PRTR) has been launched.* |
| ***Pillar 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.* | ***Achievements and sustainability plans.***  *The project is already the third project in the country related to the remediation of POPs contaminated sites, confirming the commitment of the government on this topic.*  *The guidance on site assessment and remediation for POPs pesticide established with the clean-up target regulation developed during the previous UNDP/GEF project “Building capacity to eliminate POPs pesticides stockpiles in Vietnam” (QCVN 54:2013/BTNMT) has been further demonstrated in this project through the remediation of the DDT contaminated site in Lâm Hóa and the development of provincial management plan for contaminated sites, to which a governmental budget of ……. has been assigned by the government. A detailed guidance on the implementation of the "Chemical risk assessment process" has been integrated into the draft Chemical Law and in the Prevention and Control Plan on chemical incident response* |
| ***Pillar 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.* | ***Achievements and sustainability plans.***  *The roadmap for mercury phase out developed under the project has been integrated into the recently approved project “Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel” (GEF 10519). Component 3 of the new project*  *“Mercury lifecycle management of mercury containing products” has seen an allocation of 1,450,000 USD from the GEF and a co-financing of 11,750,000 USD, therefore ensuring the sustainability of the actions on mercury prevention and phase-out.* |
| ***Pillar 5) Sustainability through awareness:***  *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, 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 activities.* | ***Achievements and sustainability plans.***  *The project has raised awareness for people in Lam Hoa, Quang Binh on management and prevention of environmental pollution due to pesticides residue.*  *A Technical Guideline on environmental pollution management of pesticides residue contaminated sites and Instruction for communities residing in vicinity of contaminated sites has been developed;*  *100 participants (61 government officials and 39 from industries and consultancy firms) have been trained and enriched their understanding of environmental pollution management in residue contaminated areas.*  *Communication materials related to Hg and POPs has been developed;*  *70 health workers in Hanoi Geriatric Hospital have been training on the impact of Hg and how to handle broken Hg thermometers.*  *Training and awareness raising on industrial POPs has been carried out in the Binh Duong province* |
| ***Pillar 6) Financial and governance sustainability.***  *The continued commitment of the Government of Vietnam is a key to ensure the sustainability of actions aimed at reducing and phasing out POPs.* | ***Achievements and sustainability plans.***  *To support the recently approved “Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel” (GEF 10519), the government of Vietnam committed a co-financing of 28,550,000 USD, most of which as grant, out of which 14,000,000 USD from private enterprises and the rest from government agencies. The GEF in turn will support that project with a grant of 4,600,000 USD. That project, which has been drafted taking into account the results and outcomes generated by the current project, will sustain with concrete actions several activities launched by the current project.*  *In addition to the above, the following budget have been allocated by the government n support of the National Target Program for the disposal of obsolete pesticides…* |

# 4. Lessons learned

*(Outline lessons learned and recommendations (if any) to promote the effectiveness, sustainability or overcome the limitations of the program / project)*

The project activities covered a number of different sectors, like soil contaminated by pesticides, assessment of alternatives to mercury, sampling and analysis of the effluent from industrial facilities, laboratory analysis, development of PRTR databases.

If, from one side, carrying out simultaneously parallel activities resulted in a reduced management risk for the project, from the other side the identification, recruitment and deployment of teams and experts with different competencies and expertise represented a significant challenge for the project. It may however be affirmed that the cooperation and exchange of knowledge between national experts, technical teams and international experts worked well to ensure the achievement of required quality of the outputs.

The project has attracted attention from stakeholders on the importance and benefit of its action. Therefore, the close guidance and timely cooperation between different parties (MONRE, VEA, VINACHEMIA, Binh Duong and Nghe An DONREs, UNDP) have boosted the progress and quality of the project activities.

However, much of the constraint hindering the speed and timeliness of project activities still remain. For instance, the lengthy appraisal process within VEA and MONRE in terms of procurement process, planning and reporting created several pauses of weeks or months. Moreover, the co-funding resources for the project have not been updated regularly from stakeholders as required, which resulted in unsatisfactory figures in the consolidated report in 2019.

The following are the lesson learnt ad recommendations from specific sectors.

1. Laboratory capacity. From the survey and round-robin test carried out on several laboratories, beside the capacity to analyze POPs and mercury, which is one of the aspect being implemented by the project, it resulted evident that effort will be needed, beyond project ends, to improve the reliability of laboratory analysis, in term of repeatability and accuracy.
2. PRTR software and regulation. The implementation of PRTR related activity showed that this topic is very new for Vietnam and will likely require more time for a full implementation. More specifically, industries lack the basic understanding on how to calculate release of pollutants based on emission factors. The project provide training to industries on the use of the PRTR software, however further effort would be needed, even after project end, to increase the capability and willingness of industries to report on this aspect. The need to improve the software was also ascertained, and further activity will be carried out on this aspect.
3. Mercury management. The project carried out the assessment of mercury use and alternatives in Vietnam, as well as awareness raising for common people and hospital staff. Based on the inventory of the project and the feedback gathered during the awareness raising activity, it resulted evident that further efforts will be needed in the country to effectively phase out mercury.
4. Risk assessment. Although a pilot risk assessment was undertaken in two mercury manufacturing plants, the assessment did not include the possible occurrence of major accidents and its consequences outside the perimeter of the plant. Unfortunately, one of the 2 plants assessed (The Rang Dong Light Bulb manufacturing company) experienced a major fire accident on August 28, 2019. The fire destroyed the warehouse, located 4km far from the center of Hanoi. From this event it is clear that risk assessment should be undertaken to cover industries who are processing hazardous chemicals in the country, and that it should cover the occurrence of major accident and the consequences on the environment and the population.
5. Terminal evaluation was started at the peak time of COVID, but they Project were successful in adapting flexible working mechanism, where international consultant was working remotely and local consultant was working in persion and carrying out mission. This resulted in successful terminal evaluation.
6. The Project has provided a number of recommendation to policy and legal framework, especially to the revised Law on Environmental Protection, which later was approved by National Assembly in November 2020. The lesson from this is that the Project was taking advantage of law revising process, therefore the Project was able to provide timely recommendation.

# 5. Annexes

Annex 1: Logical framework

Annex 2: Final report of project disbursement

Annex 3: List of important technical reports prepared by the project

Annex 4: List of Project Steering Committee members

Annex 5: List of Project Management Unit members

**Annex 1**

Executive Agency: **Ministry of Natural Resources and Environment**

Project owner: **Vietnam Environment Adminstration**

**LOGICAL FRAMEWORK**

| **Results** | **Indicator** | **Baseline** | **Targets  End of Project** | **Source of verification** | **Risks and Assumptions** |
| --- | --- | --- | --- | --- | --- |
| **Project Objective**  **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** | 1. Progress of POP/PTS regulations developed and integrated into the newly established legal framework in Vietnam, and in compliance with requirement of the Stockholm and other relevant international conventions 2. Level of institutional capacity strengthened to manage, monitor, and remediate POP/PTS, including Mercury 3. Level of environmental and health risks reduction.   -Volume of POPs contaminated soil treated and safeguarded  -Number of local people benefited from reduced exposure to POPs  -Ratio of women/men benefited | SC requirements are not yet completely integrated in the existing regulation on chemicals/POP management.  Lacking of a comprehensive POPs/PTS Management Information System following a PRTR Scheme which prevent good planning and reportin  Limited national capacity and knowledge on industrial contaminated site management.  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. | 1. 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. 2. National Monitoring capacity improved to track POPs/PTS including mercury 3. A POPs tracking tool, database and PRTR system established and demonstrated in at least one province 4. Establishment of provincial – level planning for the clean-up of POPs contaminated sites in two provinces. 5. At least 40 tons of pure DDT in Quang Binh are treated properly follow international environmental standard | Documents of the developed regulations/guidelines  Monitoring related documents  PRTR database system at the two piloted provinces  Mercury inventory and related reports | The project steering committee which comprises the representative of various ministries/state agencies helps to addressing project problems  Well established PMU will ensure effective implementation of the project activities on schedule  Experienced and professional experts are engaged in the implementation of the project activities |
| **Project Component 1.Policy framework for sound chemicals management, including POPs/PTS developed and implemented.** | | | | | |
| **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.** | Availability of regulations in Vietnam integrated to take into account in a consistent way the requirements of the Stockholm Convention on POPs  Availability of a regulatory framework to ensure monitoring and reporting of POPs is established | The existing national regulations on chemicals is based on the GHS and includes provisions of international conventions. However the existing regulations are not fully compliant with the SC requirement, still fragmented and not fully 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 | The key regulations in Vietnam are integrated to take into account in a consistent way the requirements of the Stockholm Convention on POPs.  A regulatory framework to ensure monitoring and reporting of POPs is established | Regulatory improvement plan report and related approval documents.  Text of proposed and adopted regulatory instruments on POPs an mercury,  Text of proposed and adopted regulatory instrument on PRTR.  Minute of meetings, conferences and workshop. | Risks:  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 stakeholders.  4) Timing and complexities of procedures for the examination, voting and adoption of new technical regulations.  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 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.  . |
| **Outputs for outcome 1** |  |  |  |  |
| 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. | - Availability of gap analysis.  - Availability of regulatory improvement plans  - Number of recommendations from gap analysis reports taken into account in Law/regulatory improvement plans | 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 20 months from project starting.  Regulatory improvement plan completed and submitted within 24 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 |
| 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.  Minutes of meetings, consultation workshops  Formal acts related to the approval / submission of regulatory instruments. |
| Output 1.1.3.  Strengthen enforcement of legal instrument in the Laws or Decrees/regulations in place, including amendment of Law and regulation as well as additional tools and sanctions if neccessary, toward harmonization and simplification. | Same as for output 1.1.2 | Regulations from different sectors are not integrated each other and there is the 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 | By the end of the project, an integrated legal document in the form of decree or circular developed/amended to coordinate the enforcement of SC provisions among different Ministries. | Text of new or amended regulatory instruments.  Minutes of meetings, 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.v) Integration of monitoring requirement for specific industrial sectors | Availability of technical guidelines on POPs/PTS developed covering environmental protection and chemical safety following their life cycle management  Availability of an emergency preparedness and prevention operational plan | 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 only requirement for “Environmental emergency preparedness and response to chemical incidents” for industrial sector exists. 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  v) monitoring plans and obligation for industrial sectors potentially emitting POPs. | 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 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 | Regulatory tool for the implementation and enforcement of POPs / PTS reporting and PRTR established | Poor data on chemicals and POPs/PTS hindering proper management planning and reporting. POPs/PTS policieare not consistent among state management agencies  Database systems for POPs/PTS management is in general very limited or absent and local level. | By the end of the project, a circular drafted and submitted to GoV for approval related to implementation and enforcement of POPs monitoring and PRTR system to ensure sustainability of the PRTR related activities  Demonstration of an Information Management System to support PRTR. | Meeting minutes on the POS/PTS monitoring and PRTR circular.  Text of the drafted circular  Information Management System on PRTR |  |
| **Outcome 1.2**  **Key institutions have knowledge and skills to formulate and implement neccesary chemicals and environment policies, consistent with sound chemicals management principles and international convention requirements** | Achievement of active participation of Vietnam 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 Vietnam 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 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) 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  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 |
| **Outputs for Outcome 1.2** |  |  |  |  |
| Output 1.2.1 Active participation of Vietnam in the International Conference on Chemicals Management. | Number of government officials who actively participated in ICMMs | GoV has limited opportunities to participate into ICCM conference. | By the end of the project 2 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. | Speeches/ presentations/ articles prepared by the Vietnamese participants.  BTORs (Back to Office Reports) of the delegation. |
| Output 1.2.2  Conduct an initial survey of GHS implementation in Vietnam, 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 | Number of company surveyed for GHS implementation  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 Vietnam chemical management with international regulation performed. | By the end of the project, a survey on GHS implementation in Vietnam is compleded.  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. | Survey report on GHS implementation in Vietnam.  Training reports (pre-selection, training material, training feedbacks, final tests) |
| Output 1.2.3.  Facilitate the Implementation of common national procedures for chemicals environmental and health risk assessment. Conduct a Pilot of processes for risk assessment of mercury in a priority sector. | 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.  Availability of a pilot of processes for risk assessment of mercury in a priority sector. | 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.  Procedures for risk assessment in mercury sectors have never been piloted | By the end of the project:  A sector related to mercury for piloting risk assessment selected.  A risk assessment pilot activity in the selected mercury sector conducted. Risk assessment report drafted and disseminated.  At least 30 professional from VEA, VINACHEMIA and Ministry of Health trained on risk assessment with specific focus on POPsand mercury. | Report on the pilot Risk assessment in a mercury related sector.  Training reports (pre-selection, pre- and post- training evaluation, training material, training feedbacks, final tests)  Training minutes. |
| Output 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 | Market based policy initiative in place to promote hazardous chemicals / hazardous waste management.  Established private / public partnership on the matter. | Weak compliance and enforcement of legislation on environmentally sound chemical and hazardous waste management leading 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 | Within the first two years of the project a market based policy initiative aimed at ensuring sustainability of hazardous waste and hazardous chemicals management developed and approved,  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. | Draft and final text of the market based policy instrument on waste and/or chemical management.  Signed public private 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. | * 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 | POPs/PTS baseline reports  Reports assessed abilities of labs able to monitor and analyse POPs/PTS  Document of upgraded POPs/PTS monitoring programme | Risks  1) Agreement among stakeholders on baseline and environmental quality targets not achievable within the project timeframe.  2) Scientific complexity of establishing baseline and environmental standards for monitoring reference is too high to be addressed within the project timeframe.  Assumptions.  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.  2) The work on ambient environment and receptor 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 Vietnam. 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. |
| **Outputs for Outcome 2.1** |  |  |  |  |
| 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. |
| Output 2.1.2. Comprehensive assessement and inventory of POPs/PTS monitoring capacity, indentify needs of POPs/PTS in key areas. | Numbers of laboratories assessed  Numbers of POP, PTS inventoried  Availability of an inventory report on laboratories capacity, including equipment, procedure, human resourses and others for POPs analysis and monitoring, | A detailed survey of laboratory capacity on POPs monitoring is missing.  Existing POPs laboratories are mainly dedicated to sampling and analysis of  dioxin contaminated sites, POP pesticides and sampling/analysis of PCBs. | A list of laboratories under MONRE / DONRE which are able to monitor and analyse various POPs and PTS formulated to provide information on:   * Sampling capacity and equipment for both environmental media and industrial sources; * List of POPs that can be analyzedwith 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. * Others | Database containing survey of POPs / PTS monitoring capability in Vietnam.  Draft and final POPs / PTS survey reports of monitoring capability of Vietnam |
| Output 2.1.3.Contribute to the State of Environment Report on Chemicals/Hazardous Chemical and POP/PTS | Availability of information/data of PÓP/PTS and haazadous chemicals in the Environment for the Status of Environmental Report | The Report on the Status of Environment in Vietnam never contained a specific section on PÓP/PTS and hazadourse chemicals releasing and esxisting in the environment | Since 2018, the report on the Status of Environment in Vietnam will always include a section on Chemicals in the Environment. | 2018 report on the Status of Environment in Vietnam, containing for the first time a section on Chemicals in the Environment |  |
| **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. | 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.  3) Laboratories unwilling to participate in accreditation program, and/or unwilling to share data on their capability, equipment, methodology, technical capacity.  Assumptioms  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.  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.  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. |
| 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 and requirements | 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. |
| 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  Level of piloting PRTR at provincial level | 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. | A PRTR reporting system and associated database covering:   * 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 inventorised contaminated sites. | POPs/PTS tracking tool;  PRTR reporting system and associated database;  Preliminary and final activity reports |
| **Component 3. Management of POPs contaminated sites** | | | | | |
| **Outcome 3.1**  **Key policies, regulations and technical guidlines for management of POPs contaminated sites are in place** | Availability of policies and guidelines on POPs contaminated sites management developed and enforced, | In the country a number of separate initiatives on the management of contaminated sites are being carried out by governmental institutions, international donors, or under GEF projects.  These efforts are however still fragmented (project base) and not yet capitalized into an harmonized system of laws and guidance.  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 | A broad policy and guidelines, established to support the implementation of legal and regulatory framework developed in component 1 for contaminated sites management. | Text of adopted regulations for contaminated site management.  Text of risk assessment procedures and guidelines.  Consolidated inventory of POPs contaminated sites. |  |
| **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. | Technical regulations have been adopted by the GOV for soil contaminated by dioxin and POP pesticide under GEF4 projects’ support  No standardized reporting system existed in the country for POP contaminated sites  Guidelines for contaminated sites management available to specific sites contaminated by pesticides. | Technical regulation for industrial POPs for which cleanup target levels in soil are needed will be established. | Draft and final text of supporting guideline and standards,  Official acts related to the adoption of such regulations. | Risks:  1) Scientific complexity of establishing risk management methodologies and cleanup standard is too high to be addressed within the project timeframe.  Assumptions  1) Scientifically sound risk based methodologies and cleanupstandards 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 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 | 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.  A guideline for POPs contaminated sites developed to cover:   * Clean-up requirements for specific land –uses; * Technology selection criteria; * Reporting requirements; * Care/custody and liability requirement | Draft and final text of risk management procedures for contaminated sites. |
| Outcome 3.1.3 National consolidated POPs contaminated sites inventory developed and prioritized. | Availability Upgraded POPs contaminated sites inventory. | Currently an inventory data base of POP pesticide contaminated sites (for about 1,300 sites) have been established with support from UNDP/GEF4 POP pesticide project.  Inventories of POP dioxin, PCB and U-POPs are party done by GEF and other bilateral supporting projects.  Inventories of contaminated sites from industries and craft villages are not yet done. | 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. |
| **Outcome 3.2 Provincial Management Plan for the Demonstration Provinces.** | Increased capacity of national and local staff measurable by outcome of trainings and number of staff trained.  Increased awareness of the local communities on POPs contaminated sites measurable by interviews and questionnaires.  Developed plan for POPs contaminated sites management in 2 provinces.  Amount of POPs release to the environment which will be prevented by the implementation of provincial level plan.  Number of people benefited from reduced exposure to POPs | A limited training of staff trained on disposal technology and site 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  Experience on contaminated sites gathered from the 2 GEF/UNDP projects: the Dioxin hotspots (3 large military sites at airbases) and several pesticidal POPs sites.  . | A site management plan for the provinces of Nghe An and Binh Duong developed, addressing an estimated amount of 300 POPs pesticide sites and 50 industrial contaminated sites, representing an amount of several thousands 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;  POPs release to the environment significantly reduced as a result of plan implementation after project completion.  At least 50 staff trained on the management of POPs contaminated sites | Training material, training minute, outcome of pre and post assessment of the participants.  Questionnaire surveys  Awareness raising and workshop minutes, interviews with relevant stakeholders.  Documents of Nghe An and Binh Duong site management plans | **Risks**  a) The main risks are likely related 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.  b) In addition, improper prioritisation may lead to decisions not ensuring the highest global environmental benefit achievable with the available resources.  c) awareness raising activities incomplete or not effective due to improper identification of targets  Assumptions.  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.  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.  c) Awareness raising activities will be preceded by a sound awareness raising plans aimed at properly identifying target and the best communication media. |
| **Outputs for outcome 3.2** |  |  |  |  |
| Output 3.2.1:  Support POPs/ PTS management plan at the two pilot provinces | Availability of POPs/PTS management plans in 2 provinces  Volume of UPOPs release reduction estimated  Number of local people safeguarded and benefited | POPs/PTS management plan are missing either at national or provincial level | Within two year after project starting, two detailed POPs/PTS management plans developed for the 2 selected provinces (one for each province), i.e. Nghe An and Binh Duong Province which include: risk-based site prioritization; estimation of POPs/PTS amount, reduction and clean-up/disposal cost; logistic planning; GIS database; criteria for technology selection; financial plan, etc.  Nghe An strategic plan replicated to another province to be selected on the basis of availability of data (candidate may be Quang Binh, Ha Tinh, Quang Tri) | Draft and final POPs/PTS management plans in 2 provinces  Report of consultation workshop.. |
| Output 3.2.2. 50 technical officers and decision makers from ministries 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. | Number of national and provincial staff successfully trained on contaminated sites management | Limited trainings provided to government staff on contaminated site management including site assessment, disposal 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 | 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 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). | Training materials  Training reports (pre- and post- training evaluation, training contents, final test, feedbacks from trainees, certificating, etc.) |
| Output 3.2.3 Public awareness raising on 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 residents. | 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  Number of local people safeguarded and benefited | 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  POPs exposure reduction actions carried out with the involvement of the community after implementation of awareness raising initiatives | Reports of knowledge, attitude and practice (KAP) analysis  Awareness raising programme  Awareness raising materials  Report of implemented communication campaigns including post KAP evaluation. |
| Output 3.2.4. Clean up of the Lam Hoa site in Quang Binh. | Availability of detailed Environmental Assessment and Environmental Management Plan for the site.  Availabulity of EA and EMP report.  Amount of POPs stockpile destroyed.  Level of safety of the sity after remediation  Amount of POPs pesticide and POPs contaminated soil destroyed and safeguarded  Number of local people safeguarded | The Lam Hoa site is currently contaminated by large amount of DDT. No safeguarding or risk-prevention measures in place.  The Phase 1 “Preliminary site assessment “Lam Hoa commune, Tuyen Hoa district, QuangBinh province already developed under the GEF/UNDP/FAO project “Building capacity to eliminate POPs pesticides stockpiles in Vietnam”  Around 50t of pure DDT stockpile and 100t of contaminated soil at the Lam Hoa site. The site is a former war storage. Further monitoring necessary | 50t of pure DDT destroyed plus 100 t of highly DDT contaminated soil treated on site.)  Site surveys completed.  Phase 2 Site Assessment , Phase 3 Site Remediation Assessment, Phase 4; Site Remediation Management completed  Disposal of 50 t of POPs pesticide (DDT) and safeguarding / remediation of around 100 t of contaminated material  POPs pesticide (DDT) safely transported and destroyed in compliance with Stockholm and Basel Convention  Phase 5; Site Monitoring and Aftercare completed | EA and EMP reports  Analytical reports  Hazardous waste manifests  Analytical reports.  EA and EMP final reports (Phase 2 to Phase 4)  Site remediation report.  Hazardous waste manifest.  Phase 5 report | Risks  1) Intervention to the site is delayed, therefore the pesticide found will be further dispersed in the environment.  2) Logistic difficult to access the site hinder safe operations.  3) the site is a previous war zone where UXO (Unexploded Ordinances) have been found.  3) Limited information on the site made the budget estimate unreliable.  Assumptions  1) Activities can start immediately after approval of the inception report as the budget is already allocated.  2) The preliminary assessment report has been drafted by outstanding national and international expert and can be considered highly reliable.  3) Previous cooperation with NGOs in charge of UXO detection and inactivation can be extended |
| **Component 4. National mercury baseline inventory and release reduction strategy.** | | | | | |
| **Outcome 4.1. Mercury baseline source and release inventory developed.** | Availability of a national baseline mercury source and release inventory, and national mercury release reduction strategy adopted**.**  Number of communication activities carried out and communication products disseminated. | Vietnam is signatory of the Minamata convention on mercury.  Limited demonstration of alternatives to mercury carried out under a GEF global project on 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  Legislation on mercury product limited to replacement of Hg containing light bulbs. | 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 mercury | Report on Mercury baseline source and release inventory.  A Mercury database  Communication materials and reports of communication activities | Risks  1) Difficulties related to the involvement of proper stakeholders on mercury sources.  3) Limited participation in workshops.  Assumptions.  1) Vietnam 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 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 | - Completion of questionnaire survey and site visits to mercury release sources  -Number of sectors selected for the mercury inventory | 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 containing lamps | 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 to share information on mercury concentration in products.  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 has the largest potential to gather information on commercial products and to involve industrial partners.  The Minamataconvention establish 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. |
| Output 4.1.4 Road Map on sound mercury management and the reduction of mercury release | Availability of a preliminary roadmap for the reduction of mercury release and replacement of mercury containing product drafted | A strategy for the reduction of mercury emission and replacement of mercury containing products is missing. | Roadmap/strategy and recommendation for the management and reduction of mercury emission and replacement of mercury containing products will be developed, 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/roadmap documents. |
| **Outcome 4.2**  **Increased knowledge and awareness of mercury source and releases.** | Number of communication materials developed and disseminated to increase awareness and knowledge on mercury of relevant stakeholders. | Under the GoV’s legislation on chemical management, mercury is managed as all other heavy metals. No special requirement is existed.  Low awareness and knowledge on mercury and its related risks, disposal technologies | By the end of the project, leaflet summarizing mercury convention, mercury risks and possible mercury tailored and printed by the project and disseminated national wide. | Printed leaflet on mercury | The communication materials are developed before carrying out the information outreach workshops |
| **Outputs for Outcome 4.2** |  |  |  |  |  |
| Output 4.2.1. Information outreach workshops (2 nos) conducted to provide information on source and release of inventory. | Number of information outreach workshops conducted to provide information on sources of mercury and mercury alternatives in processes. | 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 | 02 information outreach workshops conducted at two locations to discuss on mercury sources, risks and practice mercury management in Vietnam and experience in mercury management internationally | Reports of outreach workshops on Mercury |  |

**Annex 2**

Executive Agency: **Ministry of Natural Resources and Environment**

Project owner: **Vietnam Environment Adminstration**

**FINAL REPORT OF PROJECT DISBURSEMENT up to 30/06/2020**

| **No** | **Item** | **Total initially approved budget** | | **Total disbursement** | | | | | | | | **Disbursement rate (%)** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Original currency (USD)** | **Converted into million VND (ex. rate: 21.890)** | **ODA (original currency - USD)** | | **ODA (converted into million VND with ex. rate: 22.800)** | | **Co-funding**  **(million VND)** | | **Total amount**  **(million VND)** | | **ODA** | **Co-funding** | **Overall** |
| **Planned amount** | **Actual expenditure** | **Planned amount** | **Actual expenditure** | **Planned amount** | **Actual expenditure** | **Planned amount** | **Actual expenditure** |  |  |  |
|  | *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* | *(7)* | *(8)* | *(9)* | *(10) = (4)+(8)* | *(11) = (5)+(9)* | *(12) = (5)/(4)* | *(13) = (9)/(8)* | *(14) = (11)/(10)* |
| **I** | **ODA** | **2,550,000** | **55,819.50** | **2,550,000** | **2,459,296** | **58,140.00** | **56,071.96** |  |  | **58,140.00** | **56,071.96** |  |  |  |
| 1 | Component 1 | 455,000 | 9,959.95 | 455,000 | 461,553 | 10,374.00 | 10,523.41 |  |  | 10,374.00 | 10,523.41 | 101% |  | 101% |
| 2 | Component 2 | 600,000 | 13,134.00 | 600,000 | 740,478 | 13,680.00 | 16,882.90 |  |  | 13,680.00 | 16,882.90 | 123% |  | 123% |
| 3 | Component 3 | 1,000,000 | 21,890.00 | 1,000,000 | 843,343 | 22,800.00 | 19,228.22 |  |  | 22,800.00 | 19,228.22 | 84% |  | 84% |
| 4 | Component 4 | 300,000 | 6,567.00 | 300,000 | 254,629 | 6,840.00 | 5,805.54 |  |  | 6,840.00 | 5,805.54 | 85% |  | 85% |
| 5 | Project M&E | 70,000 | 1,532.30 | 70,000 | 48,594 | 1,596.00 | 1,107.94 |  |  | 1,596.00 | 1,107.94 | 69% |  | 69% |
| 6 | Project management | 125,000 | 2,736.25 | 125,000 | 110,700 | 2,850.00 | 2,523.95 |  |  | 2,850.00 | 2,523.95 | 89% |  | 89% |
| **II** | **CO-FINANCING** |  |  |  |  |  |  | **236,474.90** | **239,818.28** | **236,474.90** | **239,818.28** |  |  |  |
|  | National Government – MONRE in cash |  |  |  |  |  |  | 4,291.60 | 1,544.92 | 4,291.6 | 1,544.92 |  | 36% |  |
|  | National Government – MONRE in kind |  |  |  |  |  |  | 122,310.60 | 126,233.58 | 122,310.6 | 126,233.58 |  | 103% |  |
|  | National Government – DONRE |  |  |  |  |  |  | 42,916.00 | 38,706.10 | 42,916.0 | 38,706.10 |  | 90% |  |
|  | National Government - MOIT |  |  |  |  |  |  | 3,218.70 | 3,285.69 | 3,218.7 | 3,285.69 |  | 102% |  |
|  | Other - JICA |  |  |  |  |  |  | 63,738.00 | 70,048.00 | 63,738.0 | 70,048.00 |  | 110% |  |
|  | **Total** | **2,550,000** | **55,819.50** | **2,550,000** | **2,459,296** | **58,140.00** | **56,071.96** | **236,474.90** | **239,818.28** | **294,614.9** | **295,890.2** | **96%** | **101%** | **100%** |