

# Midterm Review of Project “Environmental Sound Life-Cycle Management of Mercury Containing Products and their Wastes”

Jorge Leiva Valenzuela

Montevideo, August 2018

## Project summary sheet

| Project Name                    | "Environmental Sound Life-Cycle Management of Mercury Containing Products and their Wastes"                                                                                               |                                                                                                                          |                           |                                     |                               |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------|-------------------------------|
| GEF Project ID number           | 4998                                                                                                                                                                                      | Financial Summary                                                                                                        | as per approval (USD) [1] | status at mid-term review (USD) [2] | status at mid-term review (%) |
|                                 |                                                                                                                                                                                           | In Cash                                                                                                                  |                           |                                     |                               |
| UNDP project Id number:         | 5084                                                                                                                                                                                      | GEF                                                                                                                      | 1.237.800                 | 564.176                             | 45,6%                         |
| Country                         | Uruguay                                                                                                                                                                                   | Scientific and Technological Park of Pando (PCTP)                                                                        | 301.200                   | 9.193                               | 3,1%                          |
|                                 |                                                                                                                                                                                           | Ministry of Public Health (MSP)                                                                                          | 65.000                    | 19.834                              | 30,5%                         |
|                                 |                                                                                                                                                                                           | Basel Convention Coordinating Centre for Training and Technology Transfer for Latin America and the Caribbean (BCCC-LAC) | 10.000                    | 11.836                              | 118,4%                        |
|                                 |                                                                                                                                                                                           | MVOTMA/DINAMA                                                                                                            | 90.000                    | 89.207                              | 99,1%                         |
|                                 |                                                                                                                                                                                           | National Administration of Power Plants and Energy Submission (UTE)                                                      | 1.290.000                 | 180.921                             | 14,0%                         |
|                                 |                                                                                                                                                                                           | Total in cash                                                                                                            | 2.994.000                 | 875.167                             | 29,2%                         |
| Region                          | Latin America                                                                                                                                                                             | In kind                                                                                                                  |                           |                                     |                               |
|                                 |                                                                                                                                                                                           | Ministry of Public Health (MSP)                                                                                          | 245.000                   | 7.475                               | 3,1%                          |
|                                 |                                                                                                                                                                                           | Scientific and Technological Park of Pando (PCTP)                                                                        | 481.560                   | 7.500                               | 1,6%                          |
|                                 |                                                                                                                                                                                           | Basel Convention Coordinating Centre for Training and Technology Transfer for Latin America and the Caribbean (BCCC-LAC) | 30.000                    | 28.380                              | 94,6%                         |
| Interest area:                  | Persistent Organic Pollutants                                                                                                                                                             | MVOTMA/DINAMA                                                                                                            | 260.000                   | 16.262                              | 6,3%                          |
|                                 |                                                                                                                                                                                           | UNDP                                                                                                                     | 175.000                   | 4.700                               | 2,7%                          |
| Focal Area's objectives (OP/SP) | CHEM-3: Outcome 3.1: Country capacity built to effectively manage mercury in priority sectors. // Indicator 3.1.1: Countries implement pilot mercury management and reduction activities. | Total in kind                                                                                                            | 1.191.560                 | 64.317                              | 5,4%                          |
| Executing partners              | National Environment Directorate (DINAMA)                                                                                                                                                 | Total co-financing                                                                                                       | 2.947.760                 | 939.484                             | 31,9%                         |
|                                 | Ministry of Public Health (MSP)                                                                                                                                                           | Project budget                                                                                                           | 4.185.560                 | 1.814.651                           | 43%                           |
|                                 | PCTP (Scientific and Technological Park of Pando)                                                                                                                                         |                                                                                                                          |                           |                                     |                               |
| Other partners involved         | BCCC; CIAT; En. lighten Initiative; UTE; LATU; National Dental Association; ASSE.                                                                                                         | prodoc signature date                                                                                                    | 15-01-2014                | Project starting date as per prodoc | 26-02-2014                    |
| MTR date as per prodoc          | 26-08-2015                                                                                                                                                                                | project closure date (operational)                                                                                       |                           | actual starting date                | 30-10-2014                    |
|                                 |                                                                                                                                                                                           | Proposed                                                                                                                 | 26-02-2017                |                                     |                               |
| MTR's Actual date               | 30-5-2018                                                                                                                                                                                 | Actual                                                                                                                   | 31-12-2018                | tentative project closure date      | N/A                           |

[1] According to prodoc (Project document).

[2] Expenditures until 31/5/2018, as per data from UNDP's ATLAS system. Cofinanced amounts reported as dec 2016.

## *Table of Contents*

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| <i>Table of Contents</i> .....                                                                               |     |
| <i>Acknowledgments</i> .....                                                                                 |     |
| <i>List of Acronyms and Abbr.</i> .....                                                                      |     |
| <i>Executive Summary</i> .....                                                                               |     |
| <i>Project Description</i> .....                                                                             | i   |
| <i>Findings</i> .....                                                                                        | iii |
| <i>Project strategy</i> .....                                                                                | iii |
| <i>Logic framework analysis</i> .....                                                                        | iii |
| <i>Indicators</i> .....                                                                                      | iii |
| <i>Progress Towards Results</i> .....                                                                        | iv  |
| <i>Main Conclusions</i> .....                                                                                | v   |
| <i>Implementation</i> .....                                                                                  | v   |
| <i>Project design</i> .....                                                                                  | vi  |
| <i>Reporting</i> .....                                                                                       | vi  |
| <i>Main Recommendations</i> .....                                                                            | vi  |
| <i>Implementation</i> .....                                                                                  | vi  |
| <i>Project Design</i> .....                                                                                  | vi  |
| <i>Project Ratings</i> .....                                                                                 | vii |
| <b>1. Introduction</b> .....                                                                                 | 8   |
| <i>MTR purpose and objectives</i> .....                                                                      | 8   |
| <i>Scope and methodology</i> .....                                                                           | 9   |
| <i>Methods and procedures for data collection</i> .....                                                      | 13  |
| <i>Activities</i> .....                                                                                      | 14  |
| <i>Mission Planning</i> .....                                                                                | 15  |
| <i>Limitations of the Methodology</i> .....                                                                  | 15  |
| <i>Evaluation report structure</i> .....                                                                     | 16  |
| <b>2. Project description and its development context</b> .....                                              | 16  |
| <i>Development Context</i> .....                                                                             | 16  |
| <i>Mercury &amp;Environment</i> .....                                                                        | 17  |
| <i>Institutionality and Regulations</i> .....                                                                | 17  |
| <i>Problems that the project intended to address</i> .....                                                   | 19  |
| <i>Extent to which lessons from other relevant projects were incorporated into the project design.</i> ..... | 20  |
| <i>Project Description</i> .....                                                                             | 21  |
| <i>Relevance</i> .....                                                                                       | 22  |
| <i>Sustainability</i> .....                                                                                  | 23  |

|                                                                  |    |
|------------------------------------------------------------------|----|
| <i>Social and environmental risks</i> .....                      | 23 |
| <i>Stakeholder participation</i> .....                           | 24 |
| <i>Gender Considerations</i> .....                               | 24 |
| <i>Project implementation arrangements</i> .....                 | 24 |
| <i>Main Stakeholders</i> .....                                   | 26 |
| <b>3. Findings</b> .....                                         | 27 |
| <i>Project strategy</i> .....                                    | 27 |
| <i>Logic framework analysis</i> .....                            | 27 |
| <i>Indicators</i> .....                                          | 27 |
| <i>Progress Towards Results</i> .....                            | 32 |
| <i>Implementation arrangements and Adaptive management</i> ..... | 42 |
| <i>Work Planning</i> .....                                       | 43 |
| <i>Financing and Co-financing</i> .....                          | 43 |
| <i>Monitoring and Evaluation</i> .....                           | 45 |
| <i>Reporting</i> .....                                           | 46 |
| <i>Stakeholder Involvement</i> .....                             | 47 |
| <i>Sustainability</i> .....                                      | 47 |
| <i>Financial</i> .....                                           | 47 |
| <i>Socio-economic Risks</i> .....                                | 48 |
| <b>4. Conclusions</b> .....                                      | 48 |
| <i>Implementation</i> .....                                      | 48 |
| <i>Project design</i> .....                                      | 49 |
| <i>Reporting</i> .....                                           | 49 |
| <b>4. Recommendations</b> .....                                  | 49 |
| <i>Implementation</i> .....                                      | 49 |
| <i>Project Design</i> .....                                      | 50 |
| <i>Reports</i> .....                                             | 50 |
| <b>5. Project Ratings</b> .....                                  | 51 |
| <b>Annexes</b> .....                                             | 52 |
| Annex 1: TDR .....                                               | 53 |
| <b>Annex 2: Project Results Matrix</b> .....                     | 54 |
| <b>Annex 3: Mission Agenda</b> .....                             | 55 |
| <b>Annex 4: List of Interviewees</b> .....                       | 56 |
| <b>Annex 5: Evaluation Questions Matrix</b> .....                | 57 |
| <b>Annex 6: List of Documents Reviewed</b> .....                 | 58 |
| <b>Annex 7: Evaluation Trail</b> .....                           | 59 |
| <b>Annex 8: Indicative list of main project indicators</b> ..... | 60 |

## Acknowledgments

I would like to express my gratitude to officials from UNDP CO of Uruguay and to the project's team for its support - logistical, organizational and share of information- that was provided during this MTR process.

I would also mention the good willingness from the different stakeholders interviewed who shared their views about the project design and implementation.

Without any doubt, the present work, and its conclusions and recommendations would not be possible without the collaboration provided by the different actors involved in the project.

Montevideo, Uruguay, August 2018.

### *List of Acronyms and Abbr.*

|                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------|
| ASSE Administration of the State Health Services                                                                       |
| BC Basel Convention                                                                                                    |
| BCCC LAC Basel Convention Coordinating Centre for Training and Technology Transfer for Latin America and the Caribbean |
| CFL Compact Fluorescent Lamp                                                                                           |
| CIAT Center of Advising and Information on Toxicology                                                                  |
| CIU Uruguayan Industry Chamber                                                                                         |
| CRA Cost Recovery Arrangements DINAMA National Environment Directorate                                                 |
| EPR Extended Producer Responsibility                                                                                   |
| GEF Global Environment Facility                                                                                        |
| HCF Health Care Facility                                                                                               |
| Hg Mercury                                                                                                             |
| GoU Government of Uruguay                                                                                              |
| LATU Meteorological Technology Laboratory of Uruguay                                                                   |
| LCM Life-Cycle Management                                                                                              |
| LL Lessons-Learned                                                                                                     |
| MIEM Ministry of Industry, Energy and Mining                                                                           |
| MS Ministry of Public Health                                                                                           |
| MSP Medium Sized Project                                                                                               |
| MVOTMA Ministry of Housing, Land Use Planning and Environment                                                          |
| NDA National Dentist Association                                                                                       |
| PCTP Scientific and Technological Park of Pando                                                                        |
| UNDP United Nations Development Programme                                                                              |
| UNEP United Nations Environment Programme                                                                              |
| UNIDO United Nations Industrial Development Organization                                                               |
| UTE National Administration of Power Plants and Energy Transmission                                                    |

## Executive Summary

UNDP country office of Uruguay requested the midterm evaluation for the project “Environmental Sound Life-Cycle Management of Mercury Containing Products and their Wastes”, in which UNDP is the GEF implementing agency.

According to TOR, the objective of the present evaluation is to assess the performance and attainment of the project expected results. In the same way, it is desired to analyze the project strategy, lessons learnt, risks for sustainability of project achievements, and make recommendations to improve project performance.

Evaluation period covers from February 2014 through June 1st, 2018, although project activities started on October 2014 since there were delays in appointing the coordinator of the project. To accomplish the MTR, a documentary revision on project strategy and activities was made, and a field mission in Montevideo was carried-out between May 28 through June 1<sup>st</sup> 2018, where 33 interviews with DINAMA officials, LATU, project team, UNDP, UTE and other key stakeholders were made.

## Project Description

The country has important challenges to tackle to address sound management of mercury containing products and wastes. The most significant are lack of legislation, absence of national plans/strategies related to waste management for Hg containing products, low level of awareness, absence of financially sustainable business models for Hg LCM, and a lack of storage, pretreatment, decontamination and disposal options.

The project under evaluation is part of country efforts to comply with the Minamata Convention which aim is to protect human health and the environment from the adverse effects of mercury. Uruguay ratified this convention on September 24, 2014. Therefore, the objective of the project is to protect human health and the environment from Mercury releases originating from the intentional use of mercury in products and the unsound management and disposal of such products through the implementation of the following concomitant actions:

i) Strengthening the regulatory and policy framework for the sound Life-Cycle Management (LCM) of mercury containing products and their wastes and make LCM technically and economically feasible; ii) Phasing-out and phasing-down mercury containing devices and products by introducing mercury-free alternatives or products with a lower Mercury content and, **iii)** improve national awareness among decision makers, on risks of mercury releases to the environment.

Among the several activities that the project should carry out, the most important are the following:

i) elaboration and approval by DINAMA of regulations and technical standards aimed at diminishing or phase out imports of mercury containing products and sound management for its wastes, including extended producer responsibility (EPR);

ii) introduce a sustainable business model for storage, transport, recycling and disposal of mercury wastes based on the payment for unit of mercury containing product sold or imported;

iii) training for public and private sector staff from target sector, to implement good practices for management and disposal of products containing mercury;

iv) Implementation of a model facility for recovering, recycling and disposal of containing mercury products.

As a result of the above actions, 330 kg of mercury would be recovered, and additional 217.5 kg reduced by introduction of good practices.

The project was designed to last for 3 years and its total budget is US\$ 4.27 million, from which GEF provided a funding of US\$ 1.238 million in cash and US\$ 2.948 million is contributed by the government (DINAMA, MS, UTE), UNDP and the Scientific and Technological Park of Pando (PCTP).

Project implementation modality chosen is national implementation, being MVTOMA (through DINAMA) the national executing agency and MS is the main DINAMA's executing partner. The project also included two committees: i) a project steering committee (PSC) headed by MVTOMA and composed by representatives of the Ministry of Public Health (MS), UNDP-CO and AUCI; and ii) a Technical Advisory Committee (TAC) including some important sector stakeholders like, among others, MSP/ASSE, UTE, MIEM, PCTP/Pando, LATU, BCCC LAC, CIAT, CIU, en-lighten initiative, NDA, representatives from project model facilities, private sector operators, efficient lighting distributors, local municipalities, waste and hazardous waste disposal facilities and CSO/NGO representatives. As it will be seen later in this report, the project management decided to implement small specific technical discussion groups to maintain the interest of different stakeholders, instead of having just one large technical committee.

The role of the PSC is to provide strategic guidelines and a follow-up for the project to attain project desired results, whereas the technical discussion groups contributed with technical and operational knowledge to implement project activities in the best possible manner to achieve desired project outcomes.

Project activities started on October 2014 (although the inception workshop was held on July 2014) and should finish on Feb. 2017, but significant changes in the country's regulatory framework for mercury management proposed by DINAMA, resulted in a project extension for almost 2 years more, thus establishing December 2018 as the new project finalization date.

Estimations on national mercury releases to environment were made in 2011 and resulted to be in the range of 2,201 - 3,616 ton/year. Sources of national mercury releases in Uruguay are multiple, but estimations indicated that most significant were: i) products with intentional use of mercury (thermometers; sphygmomanometers; batteries; light sources; switches; contacts and relays; polyurethanes with Mercury catalyst; pharmaceuticals, etc.) accounted for 36%; ii) industrial processes (mainly chlor-alkali industry) makes another 31% and others (mainly dental amalgams) are responsible for other 19%.

The national inventory for Uruguay noted that 56% of annual mercury releases (2,033 kg) came from mercury containing products. 40% of the above emissions came from widely used products like thermometers (physicians or clinical), sphygmomanometers, dental amalgam, florescent lights (tubes) and energy efficient light bulbs (CFLs).

The other important sector emitting mercury was the chlor-alkali industry, which was being already covered by an UNEP project implementing good practices for this industry.

Therefore, it was decided to include in the project mercury containing products, specifically those covering 40% of total products estimated emissions (813 kg/year). Reasons for this approach are various, but main ones are the easy for its recovering and recycling in a cost-effective manner, its wide use by the public and its potential impacts on public health.



## Findings

### *Project strategy*

Project strategy is based on cooperation from several actors involved in mercury issues, thus its approach is of a wide participation and inclusion of these actors. The above has been a key factor for maintaining project activities running in despite of government's changes in policy approaches, such as the dismissal of regulations for taxation of imported products containing mercury, and the slow process for approval of the general waste law (currently in discussion at parliament).

As implementation of import taxes for mercury containing products was a critical point to become sustainable their further treatment and disposal options, the project is in a difficult scenario, since the country does not count with sufficient amounts of wastes to sustain a treatment plant as a viable business, without subsidies needed to operate such a facility. This situation constitutes a weakness in the project strategy due to that implementation of the treatment facility accounts for nearly 50% of the project total budget. Thus, allocation of a high amount of resources in a single activity is always a substantial risk for any project. This issue was envisaged during the project preparation phase and it was rated as "High" for issues related with technology costs higher than available project budget, and high risks for approval of regulations containing taxes as financial mechanism to support operation of the treatment plant.<sup>22</sup>

### Logic framework analysis

The project logic is the result of lessons learnt from several mercury related past activities carried out by the country. Thus, the project intends to avoid high public expectations derived from mass awareness campaigns without the support of proper infrastructure for collection, transport, storage, treatment and disposal of wastes containing products.

Thus, project strategy for development of a business model for treatment of wastes from mercury products was heavily tax-based on production and imports of this type of products that would finance treatment and disposal when their life cycle is ended. As risks when attempting to set taxes on any economic activity are high, this component of the project was deemed as of "High Risk", since a new law was necessary to finance operation of a treatment facility. The settlement of a treatment facility was analyzed in the prodoc, and several benefits for the environment and human health were envisaged, as well as business opportunities and job creation from this new activity.

### Indicators

Project indicators are related to expected performance achievements and on fulfillment of desired outcomes that lead project goals and objectives in reference to: a) Strengthen the regulatory and policy framework to allow for LCM of Hg containing products and their wastes, b) Development of environmentally sound schemes and business models for the collection, treatment and disposal of mercury wastes, c) Strengthening technical capacity and infrastructure for the (pre-) treatment/decontamination and storage (medium and long-term) of Hg containing wastes and d) Strengthening national and regional awareness on the Sound LCM of Hg containing products as well as associated health hazards resulting from their mismanagement.

---

<sup>22</sup>Prodoc: Project Results and Matrix Framework.

As one of the first mercury projects funded by GEF, no cost effectiveness indicators for the decontamination of Hg containing devices are established at this time.

Project indicators and targets are shown in Annex 2 (Results Matrix). There are no midterm targets for each indicator, making difficult to assess real progress to end results (in theory, final project targets would be attained a day before of project end). On the other hand, some indicators are defined wrong. As an example, for the indicator “No. Of Hg-containing products...” the target is defined in terms of Kg, making no direct correlation with the number of products, thus this would lead to a misleading concept for this indicator, even if all agree that “kg of something” is an indirect measure of “number of something”.

Regarding gender indicators, there is none specific for this issue (although number of blood tests for pregnant women would be an option), since there is any activity that would lead to establish conclusions for women’s specific issues, nor guidance/strategy to tackle these issues.

Target statements to be reached at the project end also need more clarity, since most of them included in the results matrix seems activities rather than targets. Some examples are “waste management committees operationalized in each model facility” would be better described as follows: indicator: Number of committees installed and applying LCM best practices....”, target: 12. The same logic would be applied to private sector. It is worth mention that training is not an indicator by itself, it is just an activity that should lead to a result (hospitals implementing LCM best practices, for instance).

### Progress Towards Results

The project aimed to attain 5 results through 53 activities, which are shown in Table No.10 of this report. The project depends on the work and commitment of several institutions that are difficult to coordinate, thus the overall responsibility for project delays cannot be born to the executing team alone. DINAMA has supported the project in several initiatives, such as the elaboration and approval of the decree on mercury management, but an additional effort is needed to finish the activities with MS and ASSE.

Some important activities are underway but delayed, such as the bidding process to implement the Hg waste treatment plant, collection of Hg wastes stocks from public hospitals, universities, LATU and UTE, study on Hg contents in pregnant women and neonates.

As reported during the field mission, settlement of committees for ASSE’s hospital wastes is completed, and management of these wastes are supervised by the Ministry of Health. However, it would be advisable that more information about specific management and storage conditions at these centers would be available to corroborate if management of Hg equipment and wastes are in line with project goals.

The project has substantive progress in the approval of a decree that will rule mercury containing lamps and medical devices. The project has also strengthened technical capacities of public hospitals, universities and DINAMA; and had supported UTE’s program for withdrawing Hg containing lamps from its clients.

The evaluator estimates that project objectives of decreasing existing stocks of Hg wastes will be attained after project completion and once the decree enters into force and implemented.

The main barrier that remains is the inexistent financial mechanisms to support operations of a treatment facility, since the country does not count on scale economy to make this a viable business. The decree, once approved, would bring a framework to become Hg wastes treatment and disposal, a

sustainable economic activity. However, given the small amount of Hg wastes and their dispersion, this is still a question.

## Main Conclusions

### Implementation

The project is delayed and needs an additional extension to fulfill its results. There are several reasons for this situation, but the most important is the change in the business model and type of regulation needed to tackle Hg wastes in the country. Other factor is the county's small market and difficulties to implement efficient and cost-effective technologies to treat and dispose such lesser amounts of material. Most private companies dealing with hazardous waste management are of middle size that need technological upgrade, being this one of the factors that made the first bidding process failed, since none of the local bidders could fulfill the financial requirements established in the terms of reference of the bidding.

Regarding project expenditures, disbursements rates have been slow because of the concentration of 54% of resources in a single outcome, thus at May 2018, only 46% of GEF total resources were spent, leading to a remaining balance of US\$ 674,000. According to data provided by the project coordinator, US\$ 11,000 are salaries for the project team and making a quick projection for the next 19 months (project closure by Dec 2019, considering as usual scenario), maximum disbursements for project staff dealing with different project technical components would account for US\$ 209,000, leaving a remaining of approx. US\$ 465,000 for implementation of activities, where approx. US\$ 300,000 would be allocated to the treatment plant.

Working with ASSE's hospitals needs more follow-up for activities of the waste committees and implementation of their Hg management systems, and these would be very important for supporting ASSE's efforts to implement its own guidelines to deal with these wastes in each hospital.

The Hg analyzer stored and with not use in the MS has delayed the implementation of Hg content analysis of samples collected for the pregnant women and neonate study, overloading the work in PCTP and stocking a considerable number of samples in CIAT. One result from this delay is that the strengthening of capacity of the MS to make surveillance of Hg levels in different matrices could not become operational.

Good practices were detected during the MTR. The first one is the settling of thematic committees working in specific topics of interest for the project. Another good practice detected was the issue of a monthly short newsletters to all stakeholders that maintained them informed and provided a wide view on project progress. In addition, the project implemented an accounting system with a standard format for reporting co-financing activities of the project partners.

The possibility that the proposed decree is approved by the different ministries involved is high, but there is no clear schedule on when this will happen. At the time of this MTR report, 5 ministries have already signed the decree, just remaining the signature from presidency. The same applies for the bidding process, which is underway, but no schedule has been yet set.

Reduction targets of Hg wastes disposed will probably not be attained during the project implementation timeframe (even with project extension), but they will be met once regulations enter into force and the treatment plan is commissioned.

Currently, some key activities are pending, and they should be implemented during the project extension period: i) project exit strategy; ii) a gender approach and plan (a call for hiring a consultant is in process); iii) a report on lessons learnt and, iv) a replication strategy for project results.

### Project design

It would be advisable that indicators should measure results and do not indicate activities or confusing units of measurements.

When designing a project, a balanced budget should be elaborated, and it should not rely on a single activity, to decrease project risks. Allocation of 54% of project resources seems a weakness in its design. On the other hand, indicators are confusing sometimes, and they resemble activities rather than measurement of results.

In any case, the process was very participative and the prodoc shows well the situation of Hg wastes, knowledge, regulations and institutional capacity existent at that time.

### Reporting

The project complied with UNDP and GEF requirements on reporting project progress in a timely manner.

### Main Recommendations

#### Implementation

- An extension for an additional year is recommended to allow project to meet its desired results.
- It is recommended to intend further work with ASSE and MS in terms of strengthening hospitals' waste committees, support the elaboration and implementation of their waste management plans (specially for Hg wastes), and their evaluation and follow up. In case of this not being possible, the selection of new model institutions (military and police hospitals for example) is recommended to set-up Hg management systems in these institutions.
- Support MS with one or two consultants to implement the clinical study for mercury-free thermometers and blood pressure devices. It is recommended to locate these consultants at MS offices, but with a clear mandate and ToR delineating their responsibilities, tasks and schedules. It is also recommended to hire a professional in the same conditions as above, responsible for elaboration and implementation of waste management plans for each model institution
- More work with private hospitals is advisable. The project would communicate its will of working with this type of hospitals and invite MS and ASSE to participate in the activities.
- Release of the Hg analyzer from MS is a need for the project. It is recommended to set a deadline to MSP to start-up and operate the analyzer (2 months would be a reasonable time), otherwise the equipment should be allocated to another institution with capacity to put it in service.
- Support UTE's lamp retrieval program in terms of promoting more collection points with private companies (e.g., lamp importers, supermarkets, hospitals, etc.).
- To resolve the problem of wastes stored at LATU and the Faculty of Odontology of UDELAR by - for example- supporting them to hire a licensed company for disposal of these wastes.
- Elaborate a project exit strategy, lessons learnt document, a project gender strategy /plan and the strategy for replication.
- Start providing support to departmental governments to decentralize waste management and enforcement of Hg regulations, and at the same time to disseminate the new decree.

#### Project Design

- Revision of project indicators to define more clear targets is recommended, since they resemble activities rather than a description of a progress of a result.

## Project Ratings

| Parameter                                             | MTR rating                                             |     | Description of achievement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------|--------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project strategy</b>                               |                                                        | N/A |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Progress towards attainment of results</b>         | Level of achievement of global environmental objective | MS  | As Hg treatment plant is not in place and there are uncertainties on when bidding procedures would be approved and launched by DINAMA, there is a high probability that this target would be attained in 2018. It has also low probability that the treatment facility would be operational by 2019, since its implementation will depend on environmental permits that should be issued by DINAMA. Possibility that this goal would be achieved after project completion thanks to the new decree's provisions regarding post-consumption plans and disposal requirements included in it. |
|                                                       | Level of attainment of development objective           | S   | The project has strengthened DINAMA, MS, ASSE, LATU, CIAT, Faculty of Odontology from UDLAR and PCTP in proper management of Hg wastes and provided technical support to identify best available technologies and practices.                                                                                                                                                                                                                                                                                                                                                               |
|                                                       | Level of attainment of Result 1                        | S   | Although some project activities are delayed, a decree for regulating Hg is ready for approval by 5 ministries. At the time of this revision, the decree is ready for president's signature.                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                       | Level of attainment of Result 2                        | S   | Identification of sound technologies for treatment of Hg wastes was achieved and development of a business model for sound management of these wastes was elaborated.                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                       | Level of attainment of Result 3                        | MS  | Technical specifications for the treatment facility was elaborated, but bidding process failed mainly because some bidders did not meet requirements regarding financial capacity and other procurement standards. A second call for bidding is being elaborated by DINAMA, but no schedule is available at this time.                                                                                                                                                                                                                                                                     |
|                                                       | Level of attainment of Result 4                        | MS  | Analysis of samples for the study of Hg contents in pregnant women and neonates is delayed and bio-monitoring at the new Hg waste treatment facility enters operation.                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                       | Level of attainment of Result 5                        | S   | The project team has developed a M&E system, and effective technical working groups of committed stakeholders that are providing valuable inputs to decision makers. Good practices were detected                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project implementation and adaptive management</b> |                                                        | S   | IDEM outcome 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Sustainability</b>                                 |                                                        | ML  | Project results would be attained provided that decree is approved, and the Hg waste treatment plant is commissioned.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

N/A: not applicable

## 1. Introduction

### *MTR purpose and objectives*

The UNDP country office of Uruguay requested to carry out a midterm review (MTR) of the GEF project "Environmental Sound Life-Cycle Management of Mercury Containing Products and their Wastes (URU/13/G32)". According the ToR of the MTR, the main objective is to assess performance and attainment of both project objectives and outcomes. In the same manner, it is also desired to analyze project strategy and its risks for sustainability. The evaluation period covers October 2014 through May 2018 (4 years and 3 months).

The MTR should include the following project aspects:

- I) Design;
- li) Logic framework analysis;
- lii) assess progress towards results;
- Iv) Sustainability issues;
- V) project implementation and adaptive management;
- Vi) project risks

Points ii) throughout iv) were rated according to the scale used in the guidelines for MTR elaborated by UNDP and shown in Table No 4. Besides, recommendations and conclusions regarding the project experience were elaborated.

Contents for the different points evaluated have been already described in the TOR, but as a summary, the following may be mentioned:

- a) It was desired to assess if the project was relevant and if the requirement of participation of key actors during the project elaboration was met, as well as to analyze the results framework to verify if these are correctly elaborated and in line with the SMART criteria.
- b) It was needed to know the development of the project regarding the progress indicators and its contribution to UNDP, GEF and government policies and programs;
- c) Regarding project implementation, management arrangements used, quality of implementation of the executing institution, adaptive management, M&E and adjustments made, participation of actors, as well as financial management, should be noted.
- d) There should also be analyzed the risks for sustainability (financial, technical, socio-economic, institutional and political) of the actions made during this period;
- e) It was expected that the MTR would cover the criteria of relevance, effectiveness, efficiency, sustainability and impact described in the guideline developed by UNDP for MTR for GEF financed projects.

Thus, it was expected that the MTR distills the lessons learnt and provides recommendations that improve the project viability regarding its aspects of implementation, results and future sustainability. In the same way, it is expected that this MTR allows UNDP and its partners to identify signals for project

implementation success or failure, in such a way to make the changes needed to put the project on track towards the attainment of its results.

Distilling lessons learnt, provision of recommendations to improve project performance and viability regarding implementation, outcomes and sustainability.

### Scope and methodology

The methodology for evaluating UNDP/GEF projects was used.<sup>5</sup> In this case, it is a methodology based on results and cause-effect, where it is attempted to show a direct link between inputs and results obtained, as well as to identify the contribution of the intervention on the improvement in the systems intervened by the project in terms of environment, financial, regulations and control, strengthening, etc.

Main involved parties are government bodies (DINAMA, MS, AUCI, ASSE, UTE), UNDP, the Scientific and Technological Park of Pando (PCTP) and LATU. To obtain actors' statements, semi-structured interviews for each relevant actor were used, which covered the criteria of relevance, effectiveness, quality of implementation and use of resources, as well as the use of workplans and M&E tools (including the tracking tools). With the participative evaluation, it was expected that all actors involved in the process would be able to provide their perspectives on project design and its implementation, as well as to identify areas for improvement. To ensure reliability for actors' statements, these interviews were made in private to protect the sources.

To attain the objective of this MTR, an evaluation questions matrix was elaborated (see Annex 5). Thus, different project stages were analyzed, as well as adaptive and financial management according to criteria depicted in the following Table No 1.

*Table No1: Analysis plan.*

| Stage  | Criteria                    | Item to review                                                                                                                                                                                                                 |
|--------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Design | Relevance                   | It will try to verify if the project is included among priorities and programs from GEF, UNDP, national and local government agencies, besides of priorities of project's beneficiary actors.                                  |
|        |                             | Verify if products and expected results from the project are in line with the problem scale, level of financing, implementation time, institutional capacities and economic, social and political facts, and project location. |
|        | Project indicators          | Check if indicators established on the prodoc comply with the SMART criterion.                                                                                                                                                 |
|        | Implementation arrangements | Assessment for agreement and consultations made with relevant actors, before the project was approved by GEF. Besides, verify if responsibilities for each actor are specified "a priori" in the project document.             |
|        | Assumptions and risks       | Assessment of main information sources and its accuracy to verify that main project assumptions and risks had a factual basis. In this aspect, baselines, stakeholder and development context analysis are essential.          |
|        | Institutional capacities    | Verify if project design analysis properly assesses the implementation capabilities of each relevant actor. Besides, it                                                                                                        |

<sup>5</sup>"Guidance for Conducting Midterm Reviews of UNDP- Supported, GEF-Financed projects", UNDP-GEF Directorate, 2014, United Nations Development Programme.



| Stage     | Criteria                            | Item to review                                                                                                                                                                                                                                                                                                         |
|-----------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                                     | will also be verified the project contribution to institutional strengthening of actors involved (government, companies from energy sector, communities involved, etc.).                                                                                                                                               |
|           | Gender approach                     | Verify if the project includes this approach for women participation, equal opportunities and if the project beneficiaries are equitable for men and women. In case of no gender approach is not included in the project, make recommendations to integrate this issue in this kind of projects.                       |
|           | Integration                         | Verify if the project took advantage of experience from similar projects implemented earlier.                                                                                                                                                                                                                          |
| Execution | Use of M&E tools                    | Verify if the project logic framework matrix was used as management tool, if there was a systematic mechanism of M&E to make the necessary project adjustments and if there were proper and checkable annual work plans.                                                                                               |
|           | Financing                           | Check if project resource and co-financing are suitable to the current situation and if commitments for financing are being complied. Besides, verify the elaboration of annual budgets and if procurement complies UNDP standards and there was monitoring for expenses, audits and leverage of additional resources. |
|           |                                     | Verify if the M&E system had the necessary resources to accomplish its work. Analyze effectiveness and efficiency of expenditures. Indicate weakness and strengths and make recommendations to improve weaknesses found.                                                                                               |
|           | Quality of UNDP support             | Verify if there is a results-oriented approach, type of support provided and appropriateness (technical, management, facilitation), quality of risk management and annual reports, national ownership.                                                                                                                 |
|           | Project's national executing agency | Verify if there are contingency plans, M&E, proper risk management, quality of annual reports, national empowerment.                                                                                                                                                                                                   |
|           | Interaction with stakeholders       | Verify if what planned has relation with the real during project implementation.                                                                                                                                                                                                                                       |
|           |                                     | Verify the work of the directive committee, type of decisions taken and activity of actors.                                                                                                                                                                                                                            |
|           | Adaptive management                 | Verify if project management adapts to the real context of implementation. Probable causes would be improper indicators, change of economic, political and social contexts, very ambitious objectives, new actors, etc.                                                                                                |
|           |                                     | Verify if exists a project revision and if proposed changes are being implemented and if these are affecting project results.                                                                                                                                                                                          |
|           | Attainment of results               | Verify if project objectives were achieved (global and development) or are on track.                                                                                                                                                                                                                                   |
|           |                                     | Verify if activities and products are being implemented according to was planned.                                                                                                                                                                                                                                      |
|           |                                     | Verify if impacts will be attained both, once the project is finished and in the long term.                                                                                                                                                                                                                            |
|           | National ownership                  | Verify if project results, its activities or objectives are in the plans, programs, policies, regulations from government and stakeholders.                                                                                                                                                                            |
|           | Mainstreaming                       | Level of involvement of actors in project implementation.                                                                                                                                                                                                                                                              |
|           |                                     | Verify if results are in line with priorities from UNDP, GEF,                                                                                                                                                                                                                                                          |



| Stage | Criteria       | Item to review                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                | national government, local authorities and actors. Income generation as project result, decrease in poverty, improved governance in areas intervened by the project.                                                                                                                                                                                                                                                                                                                                                                         |
|       | Integration    | Verify how the project coordinated with other similar and/or complementary to the project, being UNDP or not and may being implemented in areas intervened by the project. It will also check if there is an approach for gender and minority groups (for instance, equal access to opportunities, benefits and information). In the same way, it will check if there is a human rights approach (for instance, promotion of civil organizations, transparency, effective participation on decision making processes and freedom of speech). |
|       | Sustainability | Verify if there are conditions of regulatory, financing and policies to sustain project results in the future.                                                                                                                                                                                                                                                                                                                                                                                                                               |
|       |                | Verify if there exist social, political, environmental, governance and financing risks that would prevent sustainability of project results.                                                                                                                                                                                                                                                                                                                                                                                                 |
|       | Replication    | Chances to replicate the project experience in other sectors and locations, dissemination of lessons learnt.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|       | Impacts        | Verify if there is progress in development objectives and if reductions towards environmental stress targeted by the project are on track.                                                                                                                                                                                                                                                                                                                                                                                                   |
|       |                | Analyze cause -effect of project impacts and their likely term.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

For analyzing attainment of results, a matrix with indicators and targets for project midterm and final was elaborated and rated as described in the UNDP's MTR guidelines, and it is shown in Table No2.

*Table No2: Evaluation matrix for attainment of results.*

| Target/obj/result | Indicator | Baseline | Level at 1st PIR (self-reported) | Midterm target | Level and evaluation for midterm period | Rating for achievements | Explanation for the rating |
|-------------------|-----------|----------|----------------------------------|----------------|-----------------------------------------|-------------------------|----------------------------|
| Objective         |           |          |                                  |                |                                         |                         |                            |
| Result 1          |           |          |                                  |                |                                         |                         |                            |
| Result 2          |           |          |                                  |                |                                         |                         |                            |
| Result 3          |           |          |                                  |                |                                         |                         |                            |
| Result 4          |           |          |                                  |                |                                         |                         |                            |

Lastly, ratings were made for each project stage (design, implementation, results, sustainability) using the scheme shown in Table No 3. Concepts utilized to rate each project stage can be seen in Tables No 4,5 and 6.

Table No3: Project's rate scale used by GEF<sup>6</sup>.

| Item                                                  | MTR rating                           |  | Description of achievement |
|-------------------------------------------------------|--------------------------------------|--|----------------------------|
| <b>Project strategy</b>                               | N/A                                  |  |                            |
| <b>Progress towards results</b>                       | Level of attainment of the objective |  |                            |
|                                                       | Level of attainment of Result 1      |  |                            |
|                                                       | Level of attainment of Result 2      |  |                            |
|                                                       | Level of attainment of Result 3      |  |                            |
| <b>Project implementation and Adaptive management</b> |                                      |  |                            |
| <b>Sustainability</b>                                 |                                      |  |                            |

Table No4: rating scale used for progress towards attainment of project objectives and results.

| Rating                           | Abbr | Concept                                                                                                                                                                                            |
|----------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Highly Satisfactory</b>       | HS   | The objective/outcome is expected to achieve or exceed all its end-of-project targets, without major shortcomings. The progress towards the objective/outcome can be presented as "good practice". |
| <b>Satisfactory</b>              | S    | The objective/outcome is expected to achieve most of its end-of-project targets, with only minor shortcomings.                                                                                     |
| <b>Moderately Satisfactory</b>   | MS   | The objective/outcome is expected to achieve most of its end-of-project targets but with significant shortcomings. .                                                                               |
| <b>Moderately Unsatisfactory</b> | MU   | The objective/outcome is expected to achieve its end-of-project targets with major shortcomings.                                                                                                   |
| <b>Unsatisfactory</b>            | U    | The objective/outcome is expected not to achieve most of its end-of-project targets.                                                                                                               |
| <b>Highly Unsatisfactory</b>     | HU   | The objective/outcome has failed to achieve its midterm targets and is not expected to achieve any of its end-of-project targets.                                                                  |

<sup>6</sup>IDEM 2, page. 19

*Table No5: Rating scale used for project implementation and adaptive management*

| Rating                    | Abbr | Concept                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Highly Satisfactory       | HS   | Implementation of all seven components (management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications) is leading to efficient and effective project implementation and adaptive management. The project can be presented as “good practice”. |
| Satisfactory              | S    | Implementation of most of the seven components is leading to efficient and effective project implementation and adaptive management except for only few that are subject to remedial action.                                                                                                                                                           |
| Moderately Satisfactory   | MS   | Implementation of some of the seven components is leading to efficient and effective project implementation and adaptive management, with some components requiring remedial action.                                                                                                                                                                   |
| Moderately Unsatisfactory | MU   | Implementation of some of the seven components is not leading to efficient and effective project implementation and adaptive, with most components requiring remedial action                                                                                                                                                                           |
| Unsatisfactory            | U    | Implementation of most of the seven components is not leading to efficient and effective project implementation and adaptive management.                                                                                                                                                                                                               |
| Highly Unsatisfactory     | HU   | Implementation of none of the seven components is leading to efficient and effective project implementation and adaptive management.                                                                                                                                                                                                                   |

*Table No 6: Rating scale used for project sustainability*

| Rating              | Abbr | Concept                                                                                                                                                      |
|---------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Likely              | L    | Negligible risks to sustainability, with key outcomes on track to be achieved by the project’s closure and expected to continue into the foreseeable future. |
| Moderately Likely   | ML   | Moderate risks, but expectations that at least some outcomes will be sustained due to the progress towards results on outcomes at the Midterm Review.        |
| Moderately Unlikely | MU   | Significant risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on.                            |
| Unlikely            | U    | Severe risks that project outcomes as well as key outputs will not be sustained.                                                                             |

### Methods and procedures for data collection

Data collection was made according the standard practice for this type of evaluations, this is:

- ✓ That provided from the project team (Reports, studies made, interviews);
- ✓ Contextual (government policies and plans, plans from municipalities, socio-economic, agriculture and industry studies, interviews);
- ✓ Integration with other activities and policies (complementary and similar projects under implementation, UNDP and government policies, municipal plans, budgets from organizations, municipalities and ministries);
- ✓ Baseline information and project status;
- ✓ The methodology used to collect and analyze the information was the following:

- ✓ **Documentary review:** project document analysis, as well as project progress reports and other publications from project activities (consultancies, baseline studies, technical papers, publications from media, etc.);
- ✓ **Interviews to key actors:** interviews were made to project team, UNDP officials, DINAMA, UTE, importers and universities (see point 8: Agenda);
- ✓ **Serie of open ended and semi-structured questions** to key persons related directly or indirectly with the project, implementing in-deep interviews;
- ✓ **Interviews with focus groups:** due to that the project includes many local beneficiaries, group interviews were carried-out to have a view on the project's work modality with different actors;
- ✓ **Onsite observation:** in addition to interviews, documents, etc., a field mission to Montevideo was made.

The evaluation questions matrix was elaborated according to TDR and other sources of information such as prodoc, progress reports, PIR, contextual information, etc. The methodology and evaluation questions matrix were approved in the evaluation inception report. This matrix (Annex 5) provides a view on the type of information needed and its sources.

Cross-checking of information is made by verification of key context situations for project implementation with that provided by interviewees, progress reports and other publications, in such a way that conclusions obtained would be as impartial and objective as possible to avoid "informant' bias".

To assess project adaptive management, the prodoc and its assumptions, risks, indicators, results, etc. were corroborated with project's actual progress to verify that adjustments needed to attain its objectives and results were made. Main information sources were interviews and progress reports made by the project to UNDP.

Financial analysis was based on expenditures and co-financing figures provided by the project and from UNDP's ATLAS system. This exercise had the aim to assess general aspects on budget implementation, such as the weight of expenditures in project personnel as compared with the total budget, progress of annual expenditures and products' category, expenses on consultants, etc. The annual audits made to UNDP projects were also reviewed as a reference. In the same way, it was verified that UNDP standards for procurement were complied, through interviews to both UNDP procurement officials and project personnel.

### Activities

The first activity was a video conference through Skype, where a discussion with officials from UNDP Uruguay and the project coordinator about key issues tackled during project implementation was made, as well as identification of main actors involved and activities of the evaluation. A mission to Uruguay from May 28 through June 1st, 2018 was agreed in this meeting. Coordination of the mission agenda was responsibility of the project executing team (See Annex 3).

The first one day and a half of the evaluation mission, a work with the project executing team and UNDP was made. Issues such as the status of the project indicators, financial execution, M&E system and activities made for each project component and objective were discussed during these sessions. In this way, the evaluator obtained an idea on how project implementation was approached, as well as the strong and weak points from project elaboration, sustainability of its activities and results.

During the mission, 33 key stakeholders from different companies and institutions were interviewed. The range was wide, including lamp importers, the dentist association, UTE, DINAMA, PCTP, ASSE, RAPAL and University of La República among the most relevant ones (see Annex 4). These interviews provided alternative information and opinions to that supplied by the project team and UNDP and were made to the largest number possible of actors to compensate, in same way, subjectivities and informant's bias. In addition, opinions given by informants were verified with other sources of information such as reports from other institutions, contextual and differences found with other informers. It is worth mentioning that interviews made to key actors (individuals and in group) were confidential and did not count with the presence of project personnel nor UNDP, to protect the confidentiality of the source.

### Mission Planning.

The evaluator selected several possible stakeholders to be interviewed during the evaluation mission and considered of importance for this review. Selected actors are shown in Table No7. Issues discussed – in general terms- were the following: i) level of institutional strengthening; ii) level of appropriation from key actors; iii) level of coordination and participation of actors during project elaboration and implementation; iv) prospective for project implementation activities; vi) level coordination among the institutions participant from the project (DINAMA, LATU, UDELAR, MS, RAPAL and ASSE); vii) project M&E system; viii) understanding on project objectives and its implementation.

*Table No7: Map of key stakeholders*

| Institution                                                                         | Role in project                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| UNDP Uruguay/ Program Analyst                                                       | Technical and financial supervision and advice                                                                                                     |
| UNDP Panama /RTA                                                                    | Supervision and technical advice.                                                                                                                  |
| DINAMA                                                                              | National executing agency                                                                                                                          |
| Scientific and Technological Park of Pando                                          | Project partner responsible for implementing a pilot mercury management and treatment facility                                                     |
| National Administration of Power Plants and Energy Transmission                     | Project partner, PSC member                                                                                                                        |
| Ministry of Public Health (MS)                                                      | Development of policies/programs on public health                                                                                                  |
| LATU                                                                                | Development of technical standards and trials                                                                                                      |
| AUCI                                                                                | Uruguay's International Cooperation Agency                                                                                                         |
| Administration of the State Health Services (ASSE)                                  | Largest public health service provider.                                                                                                            |
| FIVISA                                                                              | Importer of Mercury containing lamps                                                                                                               |
| University of la República                                                          | Faculty of Odontology, introduction of new free mercury materials among dentist students.                                                          |
| Dentist Association                                                                 | Awareness on use of mercury containing amalgams                                                                                                    |
| Center of Advising and Information on Toxicology (CIAT), University of La República | Faculty of medicine, biological studies on mercury exposure and health effects from Hg emissions. Toxicological studies of mercury on human health |
| Action Network on Pesticides and their alternatives for Latin-America (RAPAL)       | NGO participating in project's mercury phase out activities                                                                                        |

### Limitations of the Methodology

The strength of this methodology lies on its participatory aspect, where all stakeholders involved can provide their views about the project and its prospective and challenges. However, in despite of that several documentary sources were consulted, there still is a certain bias from project's informants, since some of them, mainly project beneficiaries, supply views focused with their particular situation.

## Evaluation report structure

The present report **has 6 sections** clearly defined. On its cover, a general project information (funding, Id codes, implementing and executing agencies, deadlines, etc.) is shown; followed by a glossary and an executive summary where the reader will find a brief project description, main findings, recommendations, lessons learnt and conclusions, along with the project rating.

**Section No1: Introduction**, shows MTR scope and objectives, as well as details about the methodology used and main milestones for this evaluation work.

**Further on Section No2**, a country's development context analysis is made, referred to the subject addressed by the project and the approach used, giving details on expected deadlines for project implementation, its immediate objectives, expected results and key indicators, as well as coordination arrangements and partnerships with key actors involved.

**Section 3 deals with findings** of the evaluation which cover design, implementation (financing and activities), and results obtained and its sustainability.

**Section N°4 contains the project rating**, whereas **Section N°5 focuses on conclusions**, recommendations and lessons learnt. Lastly, **Section N6 corresponds to annexes**, where information is shown on mission agenda, ToR, logic frame matrix, list of documents revised, etc.

## 2. Project description and its development context

### Development Context

Uruguay stands out in Latin America for being an egalitarian society and for its high per capita income, low level of inequality and poverty and the almost complete absence of extreme poverty. In relative terms, its middle class is the largest in America, and represents 60% of its population. Uruguay occupies the top spots in the region in terms of various measures of well-being, such as the Human Development Index, the Human Opportunity Index and the Economic Freedom Index. Institutional stability and low levels of corruption are reflected in the high level of confidence that citizens have on the government. According to the World Bank's Human Opportunity Index, Uruguay has managed to attain an important level of equality of opportunity in terms of access to basic services such as education, running water, electricity and sanitation.

In July of 2013, the World Bank placed Uruguay as a high-income country. By 2016, the PPA gross NATIONAL per capita income stood at US\$21,625. Two main characteristics —a solid social contract and economic openness— paved the way to the reduction in poverty and the promotion of shared prosperity that Uruguay successfully followed in the last decade.

With an annual average growth rate of 4.54% between 2003 and 2016, Uruguay's robust economic performance has given it a greater economic resilience to external shocks.

Moderate poverty went from 32.5% in 2006 to 9.4% in 2016, while extreme poverty has practically disappeared: it went down from 2.5% to 0.2% in the same period. In terms of equity, income levels among the poorest 40% of the Uruguayan population increased much faster than the average growth rate of income levels for the entire population. Inclusive social policies have focused on expanding program coverage; for example, around 87% of the over-65 population is covered by the pension system: this is one of the highest coefficients in Latin America and the Caribbean alongside Argentina and Brazil.

Its robust macroeconomic performance was also reflected in the labor market, which registered historically low unemployment levels in 2014 (6.6%), although in view of a marked slowdown in growth, the latter has increased to 7.8% in July of 2017. Concerning export markets, these have been diversified with the aim of reducing the country's dependency on its main trade partners; currently, 77% of exports go to 15 different destinations.

Uruguay continues to maintain an adequate macroeconomic framework although in a much more complicated external environment.<sup>8</sup>

### Mercury & Environment

The three most common forms of mercury (elemental, inorganic and methyl mercury) are all detrimental to human health because of its toxicity to nervous systems (brain and spinal cord), especially in fetuses and young children. In addition, mercury can also cause severe damage to the ecosystem and biodiversity, both at national and global level. As Mercury can be remitted into the atmosphere several times after being deposited from the atmosphere, it can be transported long distances by air and water, thus making Mercury a significant global pollutant.

Recent studies on metal contents in some fishes (Whitemouth croaker and mullet) present in the Montevideo's coastal zone detected Hg average muscle concentrations for Whitemouth croaker below the maximum permitted levels for human consumption (0.5 mg kg<sup>-1</sup> W.W.; CODEX-STAN 193-1995, 2010; MERCOSUR, 2011)<sup>7</sup>, thus becoming important to sustain these low Hg levels in the country by a sound management of mercury wastes. Estimations on national mercury releases to environment were made in 2011<sup>1</sup> and resulted to be in the range of 2,201 - 3,616 kg/year.

Sources of national mercury releases in Uruguay are multiple, but results indicated that most significant were: i) products with intentional use of mercury (thermometers; sphygmomanometers; batteries; light sources; switches; contacts and relays; polyurethanes with Mercury catalyst; pharmaceuticals, etc.) accounted for 36%; ii) industrial processes (mainly chlor-alkali industry) makes another 31% and others (mainly dental amalgam) are responsible for other 19%.

Mercury emissions from the chlor-alkali industry was already covered by an UNEP project implementing good practices for this industry<sup>2</sup>.

The national inventory for Uruguay noted that 56% of annual mercury releases (2,033 kg) came from mercury containing products. 40% of the above emissions came from widely used products like thermometers (physicians or clinical), sphygmomanometers, dental amalgam, florescent lights (tubes) and energy efficient light bulbs (CFLs).

### Institutionality and Regulations

Regarding regulations, Uruguay was the second country in the world that ratified the Minamata Convention, through the Law No. 19.267/2014 approved by the Uruguayan parliament. By ratifying this

---

<sup>8</sup><http://www.worldbank.org/en/country/uruguay/overview>

<sup>7</sup>"Copper, zinc, mercury and arsenic content in *Micropogonias furnieri* and *Mugil platanus* of the Montevideo coastal zone, Río de la Plata"; Diego Corrales, Alicia Acuña, María Salhi, Gustavo Saona, Ernesto Brugnoli; BRAZILIAN JOURNAL OF OCEANOGRAPHY, 64(1):57-66;2016

<sup>1</sup>Inventory elaborated with the UNEP methodology "Toolkit for Identification and Quantification of Mercury Releases – 2010"

<sup>2</sup>See UNEP/BCCC LAC initiative "Guidance on Best Industrial Practice in the Chloralkali sector".

convention, the country commits to comply with its provisions related to the entire life cycle of mercury, including controls and reductions across a range of products, processes and industries where mercury is used, released or emitted. The treaty also addresses the direct mining of mercury, its export and import, its safe storage and its disposal once as waste. Identifying populations at risk, boosting medical care and better training of health-care professionals in identifying and treating mercury-related effects will also contribute to implementing the Convention.<sup>9</sup> Annex A to this convention lists the phase-out of mercury containing products by 2020 (with some exemptions) and Annex B establishes elimination of mercury in Chlor-alkali production by 2025.

Uruguay has a general law for protection the environment (Law N° 17.283/Dec 2,000) that includes the ability of the MVOTMA to enact regulations for protecting the environment from adverse effects of chemicals use (art20). However, specific regulations to control inventories, characterization, handling, storage and final disposal of mercury containing equipment are missing.

Decree No. 373/003 is the regulation that addresses “Extended Producer Responsibility” (EPR) for management of acid lead batteries only, where producers/importers must elaborate master plans for recovering, recycling and disposal of this type of batteries once its lifecycle is over.

Other relevant regulations include the “Law on Transboundary Movement of Hazardous Wastes” (1999) and the “Law for Packaging and Package Waste” (2004). The Decree 182/2013 on solid industrial wastes regulates waste management in several industrial sectors, but unfortunately, it has no application for consumers products and equipment containing mercury. Chlor-alkali industry, solid waste recycling and treatment facilities, and mining industry are some of the economic activities regulated by this decree, thus they must submit to DINAMA their waste management plans for approval.

A draft law on comprehensive waste management is in discussion at the parliament since December 2017. This draft includes Basel Convention issues (arts 68 and 69: waste exports and imports, and art. 70: regarding radioactive wastes), solid waste inventories and register (art. 58). Lastly, once approved by the parliament, the government will have to elaborate a decree for ruling this law, and that process would take long time.

There are also some complementary regulations for hazardous chemical substances, such as that from the Internal Affairs Ministry- through the Firemen Service- which deals with chemical emergencies and the decree No. 307/009 dealing with safety and health risks from use of chemicals in industry. On the other hand, mercury thermometers and sphygmomanometers must comply with technical standards set out in decrees Nos. 357/001 and 520/996, respectively, which are tested by LATU. As Hospitals are involved in the project, decree No. 135/99 “Comprehensive Management of Hospitals Wastes: generation, classification, transport, treatment and disposal” is of importance since it rules management of this type of wastes.

Uruguay has been working on Mercury products and wastes from several years now and it was a very active country that advocated for worldwide restrictions to the use and disposal of these type of products and wastes.

---

<sup>9</sup>Minamata Convention on Mercury Fact Sheet; UNEP; page 2; [www.mercuryconvention.org](http://www.mercuryconvention.org)



### Problems that the project intended to address

Uruguay started activities in 2006 assessing mercury levels in workers exposed<sup>10</sup>, and elaboration of national inventories in 2011<sup>11</sup>. Earlier experiences collecting mercury from some hospitals and universities (Faculty of Odontology of Universidad de La República), produced a stock of wastes that still are improperly stored in these institutions. At the same time, LATU also has a stock of mercury wastes from thermometers and sphygmomanometers testing, amounting for approximately 230 kg of mercury containing wastes stored at LATU.

UTE (power distributor and generator state company) started in 2008 a plan called “at full lights”, aimed to decrease electric consumption by 3% compared with 2007. 2.3 million CFLs were distributed free of charge to UTE’s clients<sup>12</sup>. A second phase of this plan was launched in 2013 and another 2.3 million of CFLs were distributed, and according UTE’s estimates, at May 2018, these 4.6 million of CFLs amount for approximately 23 Kg of mercury.<sup>13</sup>

UTE has also a program for recovering CFLs out of order and set a target of 30% of all CFLs distributed (approx. 1.4 million bulbs). To do so, between 2013 and 2018, 940 containers has been located at several collection points along the country, and approximately 30,000 bulbs have been recovered up to now, being this very far from the desired target. These bulbs are sent to a hazardous waste treatment facility where they are cracked, immobilized into a concrete matrix, and then disposed in an authorized hazardous disposal site.

One of the main problems to settle a sound management system for dealing with mercury wastes are the lack of regulations in the country regarding the either control or banning imports of mercury containing products, its storage, treatment and disposal. There is a proposal of a law for solid wastes submitted by DINAMA for discussion in the parliament since late 2017, but even in case of being approved quickly, it still needs a decree for ruling this law that should be elaborated by DINAMA, thus this process would be very time consuming. Current regulations on solid wastes from industry activities (decree 182/013) include control for hazardous wastes from chloralkali facilities.

Another issue to address was the low awareness about mercury impacts on human health and environment among Uruguayan population, product users and stakeholders. The government carried out several studies on mercury uses and impacts in hospitals, academia and industry, being most remarkable the training activities on good mercury management practices, storage and disposal for hospital personnel exposed to mercury releases when repairing instruments containing this metal. Tests on mercury levels in blood for some of these exposed workers were also made and results showed Hg contents above international standards. Regulations in Uruguay require that all public hospitals set a permanent committee to implement proper management for these wastes. The University of La República (UDELAR) withdrawn technics for application of mercury-based amalgams from its curricula

---

<sup>10</sup>As part of the USAID/USEPA (2006) support to Hospital de Clinicas – biological samples of hospital staff were analyzed.

<sup>11</sup>Inventory of Mercury Waste in the Industrial Sector (June 2011).

- Inventory of Mercury Releases from its Intentional Use in Consumer Products (2011)

- Pilot Inventory of Mercury Waste in the Health Care Sector (September 2011)

<sup>12</sup><https://www.aduanas.gub.uy/innovaportal/file/3381/1/noticia-2008-08-22.pdf>:

UTE comenzará la distribución de 2.300.000 lámparas de bajo consumo ;21 de agosto, 2008; presidencia.

<sup>13</sup>UTE, Gerencia Sector Medio Ambiente: report “Plan Junta Lámparas”; 22 de mayo de 2018

since 2009, and consultations are currently being made to confirm if other universities followed UDELAR's example.

Consumers of CFLs and thermometers were not aware about impacts from misuse and proper disposal of these devices, especially when they break, and mercury contents are spilled or lost. Even if end users would implement good mercury management practices, no suitable temporary storage facilities existed, thus forcing users to keep these wastes at home or at improper storage solutions in the case of hospitals, universities and companies.

As a small country, Uruguay does not have technical and cost-effective technologies and business models to collect, transport, store, treat and locally dispose mercury wastes, since quantities of these wastes do not attain scale economies to become a viable business activity. Thus, adaptation of technology and development of a business model suitable for the country reality was a must, to settle an in-country mercury's sound management and disposal system.

Another challenge to face is the lack of a national strategy for phasing -down and application of good practices of mercury containing products. As stated earlier in this report, the country implemented an important number of pilot activities dealing with both, mercury containing products and wastes, but these experiences have not been systematized and no lessons learnt were distilled to obtain its robust replication at national level and elaboration of proposals for regulating this issue.

#### *Extent to which lessons from other relevant projects were incorporated into the project design.*

Previous country's experience for eliminating mercury containing products provided useful lessons. Firstly, early public awareness about mercury impacts on health and environment brought a massive response from the public and stakeholders, in the way of discarding thermometers, lamps, amalgams and other mercury containing products. The main issue in this regard was the lack of safe interim storage to stockpile these wastes, thus most of institutions founded themselves forced to accumulate their wastes by extemporizing places to store them until definitive disposal options are available. This situation led to a disappointed public opinion.

The above point is strongly linked with the search and development of a viable business model for collecting, treating and disposing this type of wastes, that considers the country's specific situation of low waste volumes and therefore its small size market.

The experience also showed that incentives such as imposing taxes to facilitate waste treatments, regulations and technical standards to control imports of these products, are needed to create a suitable environment for promoting good practices and settling of a stable market for recovering and recycling of discarded mercury products. One of the most important regulatory options was the establishment of the extended producer responsibility (EPR) for mercury products' importers, in which Uruguay has previous experience implementing this approach for lead batteries wastes.

Other important lesson learnt was the need for the elaboration of a national plan to phase out mercury containing devices and development of guidelines for green procurement, management and interim storage for the health sector. To attain this purpose, the project incorporated institutional strengthening by providing training and assessment of technical options for storage, transport, treatment and disposal for these wastes.

## Project Description

The country has important challenges to tackle to address sound management of mercury containing products and wastes. The most significant are lack of legislation, absence of national plans/strategies related to waste management for Hg containing products, low level of awareness, absence of financially sustainable business models for Hg LCM, and a lack of storage, pretreatment, decontamination and disposal options.

As shown before in this report, annual mercury emissions in Uruguay are in the range of 2,201 -3,316 kg/year. The contribution to total mercury releases from products containing mercury amounts to 2,033 Hg kg/yr. (56%) and considering that a UNEP/BCCC LAC project entitled “Guidance on Best Industrial Practices in the Chloralkali sector” is exclusively focusing on improving management and operating practices at the national chlor-alkali industry, the project is focused in reducing mercury emissions from mercury containing products.

Among all products containing mercury, the most widely used by the population were chosen and are listed below:

- ✓ Thermometers (physicians or clinical)
- ✓ Sphygmomanometers
- ✓ Dental Amalgam
- ✓ Florescent lights (tubes)
- ✓ Energy efficient light bulbs (CFLs)

The project under evaluation is part of country efforts to comply with the Minamata Convention which aim is to protect human health and the environment from the adverse effects of mercury. Uruguay ratified this convention on September 24, 2014.

The objective of the project is to protect human health and the environment from Mercury releases originating from the intentional use of mercury in products and the unsound management and disposal of such products through the implementation of the following concomitant actions:

- i. Strengthening the regulatory and policy framework for the sound Life-Cycle Management (LCM) of mercury containing products and their wastes;
- ii. Phasing-out and phasing-down mercury containing devices and products by introducing mercury-free alternatives or products with a lower Mercury content and,
- iii. Improving national (regulatory, policy, technical, financial, etc.) capacity to make LCM of Mercury containing products technically and economically feasible.

Therefore, the project was designed having 5 components as follows:

- ✓ Component 1: Strengthen the regulatory and policy framework to allow for LCM of mercury containing products and their wastes
- ✓ Component 2: Develop environmentally sound schemes and business models for the collection, treatment and disposal of mercury wastes
- ✓ Component 3: Strengthen technical capacity and infrastructure for the pre-treatment, decontamination and storage (medium- and long- term) of Mercury containing wastes
- ✓ Component 4: Strengthen national and regional awareness on the Sound LCM of Mercury containing products as well as associated health hazards resulting from their mismanagement
- ✓ Component 5: Provide monitoring, learning opportunities, adaptive feedback and evaluation

Among the several activities that the project should carry out, the most important are the following:

- i. elaboration and approval by DINAMA of regulations and technical standards aimed at diminishing or phase out imports of mercury containing products and sound management for its wastes, including extended producer responsibility (EPR);
- ii. introduction of a sustainable business model for storage, transport, recycling and disposal of mercury wastes based on the payment for unit of mercury containing product sold or imported;
- iii. training for public and private sector staff from target sector, to implement good practices for management and disposal of products containing mercury;
- iv. Implementation of a model facility for recovering, recycling and disposal of containing mercury products.

Because of the above actions, 330 kg of mercury would be recovered, and additional 217.5 kg reduced by introduction of good practices.

The project was designed to last for 3 years and its total budget is US\$ 4.27 million, from which GEF provided a funding of US\$ 1.238 million in cash and US\$ 2.948 million is contributed by the government (DINAMA, MSP, UTE), UNDP and the Scientific and Technological Park of Pando (PCTP).

Project implementation modality chosen is national implementation, being MVTOMA (through DINAMA) the national executing agency and MSP is the main DINAMA's executing partner. The project also included two committees: i) a project steering committee (PSC) headed by MVTOMA and composed by representatives of the Ministry of Public Health (MSP)/Administration of the State Health Services (ASSE), National Administration of Power Plants and Energy Transmission (UTE), and UNDP-Uruguay and ii) a Technical Advisory Committee (TAC) including some important sector stakeholders like, among others, MSP/ASSE, UTE, MIEM, PCTP/Pando, LATU, BCCC LAC, CIAT, CIU, en-lighten initiative, NDA, representatives from project model facilities, private sector operators, efficient lighting distributors, local municipalities, waste and hazardous waste disposal facilities and CSO/NGO representatives.

The role of the PSC is to provide strategic guidelines and a follow-up for the project to attain project desired results, whereas the different discussion groups contributed with technical and operational knowledge to implement project activities in the best possible manner to achieve desired project outcomes.

Project activities started on Feb. 2014 and should finish on Feb. 2017, but significant changes in the country's regulatory framework for mercury management proposed by DINAMA resulted in a project extension for almost 2 years more, thus establishing December 2018 as the new project finalization date.

### Relevance

The project is in line with provisions from the Minamata Convention that Uruguay ratified in 2014 (second country ratifying this convention). The project is also relevant to national policies and programs dealing with hazardous wastes (law 17,220/1999), the current discussions on the general waste law, and the country efforts to improve its current management and disposal of mercury containing products expressed in several projects dealing with these issues, implemented since 2006.

It is worth mention that Uruguay has been active in advocating a binding international agreement for controlling and phase out mercury containing products and wastes, thus it chaired all international negotiations committees elaborating the Minamata Convention and hosted the 4th session of the

intergovernmental negotiating committee in 2012. Therefore, Uruguay is clearly committed to phase-out pollution from mercury products.

Regarding GEF priorities, the project is included in the Focal Area Objective CHEM-3: Outcome 3.1: “Country capacity built to effectively manage mercury in priority sectors”, and Indicator 3.1.1: “Countries implement pilot mercury management and reduction activities”.

As UNDP is concerned, the project is included in its CPD 2016-2020<sup>16</sup> corresponding to the Strategic Plan Outcome 1: “Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded”, output 3: “National and local (department) institutions with strengthened capacities to implement instruments to improve environmental management and reduce pollution especially focusing on most vulnerable populations” (it includes two indicators relevant to this project: i) Number of mechanisms that provide sustainable management solutions for chemicals and wastes, and ii) kg of mercury recovered from medical devices and lighting devices with an appropriate final disposal).

### Sustainability

The project document clearly delineates main actions that will provide sustainability to phase-out of mercury products and wastes. In the first place, regulations and technical standards for preventing imports and production of high mercury content products is in the center of this issue. Secondly, development of a viable business model for managing wastes from this type of products is critical to implement a coherent chain for the life cycle management of mercury products. Sustainability would be ensured if available treatment and disposal technologies are properly adapted to a national context of small flows of mercury products and wastes.

In the third place, the introduction of EPR and a tax that would be imposed to imports of mercury containing products to finance its further treatment and disposal was considered as a key aspect that a new regulation for these products should contain to attain sustainability in the long term. However, at the moment of the evaluation, taxation for mercury products imports was dismissed by the government.

### Social and environmental risks

From the social and political point of view, the project does not present high risks for sustainability, since Uruguay is considered a country of high income with a wide middle class, strong institutions and high economic and political stability, therefore no risks are envisaged at this time.

In terms of environment, Uruguay has been a key player in the Minamata Convention and it has taken several actions in the past to control and reduce mercury emissions in the country and introduced good mercury management practices in some public hospitals to reduce health risks for mercury exposed personnel. DINAMA is also controlling the chloroalkali facility to ensure proper treatment and disposal of its waste sludges.

With regards of the use of the UNDP “Environmental and Social screening procedure and adequate mitigation”, it worth mention that this specific tool was not available at the time of project preparation, at least as it is known today (2010-2012), but risks were identified according to standard risk assessments made at that time and estimates assigned a probability of 2 (not likely) of having an event

---

<sup>16</sup>[http://www.latinamerica.undp.org/content/dam/rblac/docs/Country%20Programme%20Documents/URY%20CDP%202016\\_2020.pdf](http://www.latinamerica.undp.org/content/dam/rblac/docs/Country%20Programme%20Documents/URY%20CDP%202016_2020.pdf)

of impact level 5 (critical). These risks were mainly associated to personnel involved in maintenance and repair of mercury containing products in hospitals, and nurses using thermometers and other medical devices depending on this metal.<sup>17</sup> This group of exposed workers also includes those from the PCTP's waste treatment model facility that will be developed during project implementation.

Mitigation measures identified were training on good practices, implementation of safety protocols, blood tests for workers and monitoring of ambient mercury levels at the pilot waste's treatment plant.

### Stakeholder participation

The project document lists a series of key stakeholders like DINAMA, MSP, academia and PCTP among the most important, that will participate in the project implementation<sup>18</sup>. According interviews and other documentation revised, an intensive consultation process was carried-out during the PPG phase, to collect information, views and discuss different approaches to phase-out mercury containing products.<sup>19</sup> Meetings and a workshop were implemented to discuss approaches, roles and commitments with all partners involved in this topic.

### Gender Considerations

Although gender issues are not specifically included in the prodoc, there are some activities addressing this topic, such as blood test for workers exposed to mercury releases. It is worth noting that most of mercury products' users in hospitals are nurses, thus training for good practices in mercury management is a direct output benefiting women. On the other hand, the prodoc considers implementation of a nationwide blood tests analysis for pregnant women with the aim to determine the scope of impacts from pollution with mercury at different country locations. The same toxicological tests for neonates are also included in the project.

However, a more defined strategy for identification and approaching women specific issues is needed, since this subject is mentioned in the PIF by stating that the project will "assess gender aspects of mercury waste management"<sup>20</sup>, noting MDG 3: "Promote gender equality and empower women" as one relevant indicator applied to the project.

The MTR should assess the extent to which broader development effects (i.e. income generation, gender equality and women's empowerment, improved governance, livelihood benefits, etc.) of the project were factored into project design. The MTR team should develop new indicators to cover these broader development impacts if they were not included in the logframe, and should also recommend sex-disaggregated indicators, as necessary, to ensure that the development benefits of the project are fully and adequately included in the project results framework and monitored on an annual basis. See Annex 9 for further guidelines on assessing gender.

### Project implementation arrangements

The project is nationally executed (NIM), being MVOTMA-through DINAMA- the responsible national executing agency. Other key partners are MS and PCTP.

---

<sup>17</sup>Prodoc: ANNEX I: RISK ANALYSIS AND RISK MONITORING

<sup>18</sup>See prodoc Annex II: Responsibilities of National Project Partners

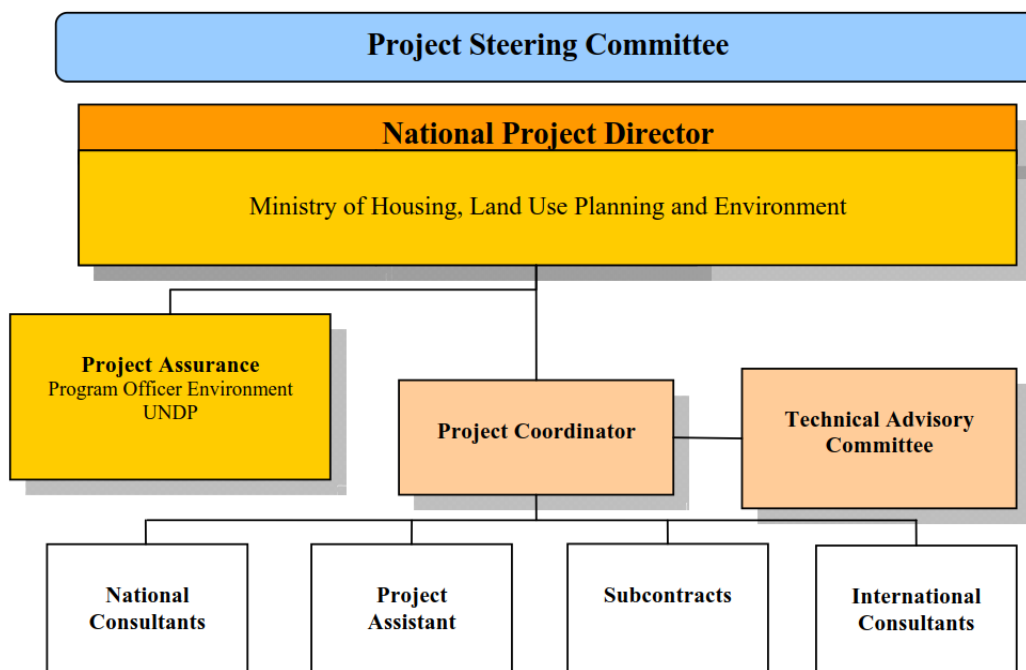
<sup>19</sup>See PPG Section 6: Project Co-finance scheme Project definition

<sup>20</sup>See PIF page 5 and 19.

A project steering committee and a technical advisory group are designated to allow smooth implementation of the project. The steering committee has the responsibility of providing strategic guidance and participants are DINAMA (chair), UNDP Uruguay, UTE, MS and ASSE. The technical advisory group is composed by representatives from important sectoral stakeholders like MSP, ASSE, UTE, MIEM, PCTP/Pando, LATU, BCCC LAC, CIAT, CIU, en-lighten initiative, NDA, representatives from project model facilities, private sector operators, efficient lighting distributors, local municipalities, waste and hazardous waste disposal facilities, CSO/NGO representatives.

The project has a project team composed by a coordinator (who reports directly to MVOTMA Director), an administrative assistant and technical staff. This core team is assisted by national and international consultants appointed according specific project requirements. Fig. No.1 shows how the project is organized.

*Fig. No.1: Project implementation structure.*



UNDP country office provides project management services and it would provide services for procurement of goods and services specific to project inputs according to UNDP rules and procedures. UNDP country office will ensure that all contracts for consultants, purchase orders and contracts for services companies, comply with UNDP rules and procedures.



## Main Stakeholders

Table No.8 shows a summary of main sectoral stakeholders involved in the project

*Table No.8; Main stakeholders involved in the project.*

| No. | Stakeholder                       | Role                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | MVOTMA /DINAMA                    | Project executing agency and chair of the PSC. It is the national environmental authority and is responsible for the development and implementation of policies and regulations pertaining to the environment                                                                                                                                                                                                                                                                                                                                                                  |
| 2   | MS                                | Responsible for the development and implementation of health policies and assumes responsibilities related to monitoring, control, regulation and standardization. MSP also registers medical devices and monitors companies that import, manufacture, distribute and / or store medical equipment and devices.                                                                                                                                                                                                                                                                |
| 3   | ASSE                              | State provider of public health care at national level, through a network of comprehensive health care services throughout the country. ASSE is also the responsible authority for mercury waste management in public health centers.                                                                                                                                                                                                                                                                                                                                          |
| 4   | PCTP                              | It is a joint initiative of the Faculty of Chemistry, National University (Universidad de la República-UdelaR); MIEM (Ministry of Industry, Energy and Mining), the Canelones Municipality (Intendencia de Canelones) and the CIU (Uruguayan Industry Chamber). PCTP will host the treatment facility and be involved in the bio-monitoring of population groups at risk while PCTP's business incubator will provide technical advice to the private sector entities operating the treatment facility and support the development of a financially sustainable business plan. |
| 5   | BCC-LAC                           | It is extensively involved in awareness raising on risks related to mercury exposure, mercury waste segregation and storage campaigns and has been involved in all national and regional projects and programs which have a bearing on the sound management of Hg and other hazardous wastes and substances.                                                                                                                                                                                                                                                                   |
| 6   | CIAT                              | In partnership with PCTP, it will be involved in the bio-monitoring of population groups at risk as well as in conducting the baseline assessments and training at model healthcare and dentist facilities <sup>3</sup> .                                                                                                                                                                                                                                                                                                                                                      |
| 7   | En. Lighten Initiative            | This partnership through AmbiLamp, will be a key partner for technology advise.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8   | UTE                               | UTE will support the project by providing cash co-financing for the treatment of the CFLs they put in the market and will provide collection points for CFLs/tubes through their branch locations and conduct awareness raising making use of their monthly billing system.                                                                                                                                                                                                                                                                                                    |
| 9   | LATU                              | It currently holds 230,000 Hg containing thermometers, which are expected to be treated during the start-up phase of the treatment facility. LATU already has information available on Mercury-free medical devices which have already be approved for use in Uruguay and have passed LATU certification.                                                                                                                                                                                                                                                                      |
| 10  | National Dental Association (NDA) | It is a key partner in supporting the development of guidelines for best practices for Hg- dental amalgam management, disposal practices and awareness among dental association members. It will also play a key role in encouraging a ban on the mixing of dental amalgam at dental offices and promoting a shift towards pre-mixed capsules or preferably alternative restorative materials.                                                                                                                                                                                 |
| 11  | Private sector companies          | It is Involved in various important aspects of the proposed project: i) Large institutions producing mercury containing wastes; ii) Services providers involved in waste collection, disposal and treatment c. Distributors and retailers of Mercury containing consumer products and Mercury-free devices; iii) distributors such as Philips, Osram, GE, etc.; iv) Laboratories for testing and certification                                                                                                                                                                 |

<sup>3</sup> See Prodoc, page 9



### **3. Findings**

#### **Project strategy**

Project strategy is based on cooperation from several actors involved in mercury issues, thus its approach is of a wide participation and inclusion of these actors. The above has been a key factor for maintaining project activities running in despite of government's changes in policy approaches, such as the dismissal of regulations for taxation of imported products containing mercury, and the slow process for approval of the general waste law (currently in discussion at parliament).

As implementation of import taxes for mercury containing products was a critical point to become sustainable their further treatment and disposal options, the project is in a difficult scenario, since the country does not count with amounts of wastes needed to sustain a treatment plant as a viable business, without subsidies needed to operate such a facility. This situation constitutes a weakness in the project strategy due to that implementation of the treatment facility accounts for nearly 50% of the project total budget. Thus, allocation of a high amount of resources in a single activity is always a substantial risk for any project.

This issue was envisaged during the project preparation phase and it was rated as "High" for issues related with technology costs higher than available project budget, and high risks for approval of regulations containing taxes as financial mechanism to support operation of the treatment plant.<sup>22</sup>

#### **Logic framework analysis**

The project logic is the result of lessons learnt from several mercury related past activities carried out by the country. Thus, the project intends to avoid high public expectations derived from mass awareness campaigns without the support of proper infrastructure for collection, transport, storage, treatment and disposal of wastes and mercury containing products.

Therefore, the project main priorities are the development of a viable business model to operate a treatment facility for mercury containing wastes, establishment of a regulatory network for imports and safe disposal of mercury wastes, and capacity strengthening for public and private institutions for sound management and disposal of products containing mercury.

Thus, project strategy for development of a business model for treatment of wastes from mercury products was heavily tax-based on production and imports of this type of products that would finance treatment and disposal when their life cycle is ended. As risks when attempting to set taxes on any economic activity are high, this component of the project was deemed as of "High Risk", since a new law was necessary to finance operation of a treatment plant.

The settlement of a treatment facility was analyzed in the prodoc, and several benefits for the environment and human health were envisaged, as well as business opportunities and job creation from this new activity.

#### **Indicators**

Project indicators are related to expected performance achievements and on fulfillment of desired outcomes that lead project goals and objectives in reference to:

---

<sup>22</sup>Prodoc: Project Results and Matrix Framework.

- a) Strengthen the regulatory and policy framework to allow for LCM of Hg containing products and their wastes,
- b) Development of environmentally sound schemes and business models for the collection, treatment and disposal of mercury wastes,
- c) Strengthening technical capacity and infrastructure for the (pre- treatment/decontamination and storage (medium and long-term) of Hg containing wastes and,
- d) Strengthening national and regional awareness on the Sound LCM of Hg containing products as well as associated health hazards resulting from their mismanagement.

As one of the first mercury projects funded by GEF, no cost effectiveness indicators for the decontamination of Hg containing devices are established at this time. However, the prodoc states that the project will help to determine costs/Kg of mercury recovered and stored. Besides the above, the project would intend to assess average costs for the environmentally sound disposal of Hg containing medical devices and the average costs for environmentally sound disposal of Hg containing lamps (tubes & CFLs) and it will compare these with known costs from developed countries where decontamination programs are already working<sup>21</sup>. Project indicators and targets are shown in Annex 2 (Results Matrix). The first comment to make is that there are no midterm targets for each indicator, making difficult to assess real progress to end results (in theory, final project targets would be attained a day before of project end).

On the other hand, some indicators are defined wrong. As an example, for the indicator “No. Of Hg-containing products...” the target is defined in terms of Kg, making no direct correlation with the number of products, thus this would lead to a misleading concept for this indicator, even if all agree that “kg of something” is an indirect measure of “number of something”.

In the case of outcome 1: (establishment of EPR and other regulations), the indicator is confusing, since financial mechanisms for waste treatment does not only depend on EPR. As it will be discussed later in this report, EPR decree does not contain taxes for financing recovery and recycling operations, thus it leaves the market to find-out the financial mechanism to allow sustainable operation for the Hg treatment facility.

In the same line, indicators and targets for the outcome 1, for example, next to “strengthened policy....” Indicator, the statement of “there is no restriction to imports of Hg.....” Is followed by the statement of “national plans .....elaborated” as a final project target. However, to elaborate national plans does not necessarily needs a regulation, thus a more suitable statement for this target would be “decree with provisions for phasing -out Hg containing.....” or “technical standards for lamps” would be more appropriate in this case.

Regarding gender indicators, there is none specific for this issue (although number of blood tests for pregnant women would be an option), since there is any activity that would lead to establish conclusions for women’s specific issues, nor guidance/strategy to tackle these issues.

Target statements to be reached at the project end also need more clarity, since most of them included in the results matrix seems activities rather than targets. Some examples are “waste management committees operationalized in each model facility” would be better described as follows: indicator: Number of committees installed and applying LCM best practices....”, target: 12. The same logic would be applied to private sector. It is worth mention that training is not an indicator by itself, it is just an activity that should lead to a result (hospitals implementing LCM best practices, for instance).

---

<sup>21</sup>Prodoc: Key indicators, risks and assumptions

A summary of the project indicators and their targets as described in the prodoc is shown in Table No. 9. A indicative list elaborated by the evaluator for the main project indicators can be found in Annex 8, as an example of possible indicators according project objectives and intended results.

Table No.9: project indicators and targets

| Project Objective/Component                                    | Indicator                                                                                                                                                                                                                                                                                                          | Baseline Value | Final target                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protect human health and the environment from Mercury releases | No. of Hg-containing medical devices and energy saving light sources decontaminated and disposed of within the project period (2014 – 2017).                                                                                                                                                                       | 0              | 330 Kg of mercury from existing stored wastes+ 217.5 Kg thanks to good practices.                                                                                                                                                                                                                                                                                                                                  |
|                                                                | Quantity (kg) of elemental Hg safeguarded which has been recovered from the decontamination process.                                                                                                                                                                                                               | 0              | N/A                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                | Safe decontamination options for Mercury containing products established.                                                                                                                                                                                                                                          | 0              | 1                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                | Safe interim storage (to serve decontamination facility) for Mercury containing products established.                                                                                                                                                                                                              | 0              | 1                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                | Environmental and bio-monitoring program developed.                                                                                                                                                                                                                                                                | 0              | 1                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Outcome 1                                                      | National Extended Producer Responsibility (EPR) policy and regulations for mercury containing products adopted and introduced.                                                                                                                                                                                     | 0              | 1                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                | Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg-free or lower level Hg products                                                                                                                                                          | 0              | 1 national plan for Hg management<br>1 national workshop<br>1 guideline<br>EU RoHS directives for lighting products transposed into national regulations.<br>MSP degree prescribing a phased approach/total phase-out for the use of Hg-containing devices at Health-care facility level developed.                                                                                                                |
|                                                                | Improved adherence to the sound collection, (temp.) storage and treatment of products containing mercury (in particular project partners and model facilities)                                                                                                                                                     | 0              | Guidelines and legal provisions with respect to the sound collection, (temp.) storage and treatment of products containing mercury (and the storage of elemental mercury)                                                                                                                                                                                                                                          |
| Outcome 2                                                      | Mercury releases from priority sectors reduced and segregated Hg containing waste streams augmented.                                                                                                                                                                                                               | 330 kg stored  | 330 Kg of mercury from existing stored wastes+ 217.5 Kg thanks to good practices and new regulations.                                                                                                                                                                                                                                                                                                              |
|                                                                | Number of private sector operators, model healthcare facilities and PCTP staff capacitated in best practices related to collection, storage, treatment of Hg containing products and long-term safe storage of elemental Mercury, as well as the use of cost-effective Hg-free or low-Mercury content alternatives | 0              | 12 management plans from model facilities.<br>500 personnel of model facilities trained<br>Study on staff preferences on cost-effective Hg-free alternatives conducted at the model HCFs.<br>Mercury-free alternatives introduced at the project's model HCFs through adaptation of procurement practices.<br>Collection systems for Hg containing products operational.                                           |
|                                                                | Business models and cost recovery arrangements (CRA) for the collection, transport, temporary storage and treatment of different types of Hg wastes operational and financially sustainable.                                                                                                                       | 0              | Business plan for the collection, transport, temporary storage and treatment of different types of Hg wastes finalized.<br>Assessment of potential Cost-Recovery Mechanisms including recommendations for tax tariffs, tax modalities and channeling of funds, completed (to inform drafting of EPR degree).<br>30 personnel of private sector entities trained in LCM of Hg containing wastes and waste products. |

| <i><b>Project Objective/Component</b></i> | <i><b>Indicator</b></i>                                                                                                                      | <i><b>Baseline Value</b></i> | <i><b>Final target</b></i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                                                                                                                                              |                              | Bidding process for private sector operators completed.<br>Business operations launched (collection, transportation, interim storage and treatment).                                                                                                                                                                                                                                                                                                 |
| Outcome 3                                 | Technology to treat collected Hg containing product waste operational.                                                                       | 0                            | Technical specifications for the treatment facility, (in-line with Basel Convention guidelines).<br>International procurement process for technology successfully completed.<br>Operational procedures for the treatment technology developed and implemented.<br>2 - 3 private sector operators and 30 PCTP staff trained in the safe operation of the treatment facility/technology.<br>Operation of decontamination facility officially launched. |
|                                           | Intermediate Hg storage options established, and long-term storage options identified.                                                       | 0                            | Assessment for short-term, interim and long-term storage and disposal options completed.<br>Operational procedures developed and implemented for the management of storage facilities/spaces.<br>Safe interim storage spaces for Mercury containing products available/established at model facilities and PCTP and staff trained in the safe management of storage spaces.<br>Safe long-term storage of recovered elemental Mercury established     |
| Outcome 4                                 | National capacity to monitor Mercury levels in populations strengthened.                                                                     | 1                            | Technical specifications for PCTP/CIAT bio-monitoring laboratory equipment prepared.                                                                                                                                                                                                                                                                                                                                                                 |
|                                           | Awareness on LCM of Mercury containing products increased among project stakeholders, the public and countries at regional and global level. | 1                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Outcome 5                                 | Number of high quality monitoring and evaluation documents prepared during project implementation                                            | 0                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

### Progress Towards Results

The project aimed to attain 5 results through 53 activities, which are shown in Table No.10 below.

The project depends on the work and commitment of several institutions that are difficult to coordinate, thus the overall responsibility cannot be born to the project team alone, but a more intensive commitment and support is needed from DINAMA to attain the desired project results.

The main barrier that remains is the inexistent financial mechanisms to support operations of a treatment plant, since the country does not count on scale economy to make this a viable business. The decree, once approved, would bring a framework to become Hg wastes treatment and disposal, a sustainable economic activity. However, given the small amount of Hg wastes and their dispersion, this is still a question.

Other barrier that will be present is the lack of awareness among population about the importance of separation at home according waste type to improve recovering and recycling operations in the country.

Table No.10: Project desired results

| Objectives |                                                                                                                                                                                                                              | Indicators |                                               | Baseline | Target 2017 | Status at June 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Rating |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------|----------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
|            | Protect human health and the environment from Mercury releases originating from the intentional use of mercury in products                                                                                                   |            | Kg of Hg recovered from existing stockpiles   | 0        | 330 kg      | As Hg treatment plant is not in place and there are uncertainties on when bidding procedures would be approved and launched by DINAMA, there is a high probability that this target would be attained in 2018. It has also low probability that the treatment facility would be operational by 2019, since its implementation will depend on environmental permits that should be issued by DINAMA. Possibility that this goal would be achieve after project completion thanks to the new decree's provisions regarding post-consumption plans and disposal requirements included in it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | MS     |
|            |                                                                                                                                                                                                                              |            | Amount of Hg reduced by use of good practices | 0        | 217,5       | UTE is collecting discarded lamps at 942 collection points around the country, through its plan "Collect Light Bulbs". Approximately, 30K lamps (152 gr Hg) have been retrieved. The target is to collect 1,4 million bulbs (approx. 7 Kg of Hg), thus there is low probability to meet the target by this way. The draft degree contains provisions requiring post-consumption plans for this type of products, thus this target would be attained after project ends.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MS     |
| 1.1.1      | A proposal for the EPR of Hg-containing light sources (CFLs and tubes) developed according to existing EPR regulations (car batteries and pesticides containers) and in line with the Efficient Lighting Labeling regulation |            |                                               |          |             | A proposal for draft decree is in the process of signing by the different ministries involved (MSP; MVOTMA; External Affairs; Economy and Finances; and Industry, Energy and Mining). At the time of the MTR, 3 ministries have already signed). All interviews indicated that the decree will be approved without issues, but there is no certainty on when this decree will be approved and entered into force. Taxation for imports of mercury containing products was not considered viable by the environmental authority, thus the actual decree does not contain any provision for financing collection, transport, storage, treatment and disposal of such products, but imposes the elaboration and approval by DINAMA of post-consumption plans to importers. In the same way, commercial centers, public and private institutions, educational centers and companies will have to dispose their wastes with a licensed operator or contract suitable post-consumption plans. All users of Hg devices, except for individual and small enterprises, should pay for their Hg waste management | S      |

| <i>Objectives</i> |                                                                                                                                                                                         | <i>Indicators</i> |               | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                                                                         | <i>Rating</i> |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------|-----------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 1.2.1             | A national plan on the LCM of light products (CFLs and tubes)                                                                                                                           | 1.2.1.1           | National Plan | 0               | 1                  | This plan will be changed by a document of guidelines for management of Hg-containing products and its wastes in Uruguay.                                                                                          | S             |
| 1.2.2             | A national plan for the LCM of Hg-containing medical devices and dental amalgam                                                                                                         | 1.2.2.1           | National Plan | 0               | 1                  | i) Guidelines for dental amalgam use were developed by the Faculty of Odontology of the University of the Republic, with the aim of searching for non-Hg alternatives.                                             | S             |
| 1.2.3             | National phase-out plans/strategies for priority Hg containing products                                                                                                                 |                   |               |                 |                    | i) The Faculty of Odontology eliminated amalgams from its curricula since 2013. Guidelines from this university were accepted by the Health Ministry; ii) ASSE phased-out dental amalgams.                         | S             |
| 1.2.4             | Decree prescribing a phased approach for the phase-out of Hg-containing devices in the health-care sector                                                                               |                   |               |                 |                    | The ban is included in the proposal of decree                                                                                                                                                                      | S             |
| 1.2.5             | RoHS directives transposed into national regulations through a decree to restrict importation of high content lamps (CFLs and tubes).                                                   |                   |               |                 |                    | The proposal of draft decree includes provisions for Hg containing products according Minamata Convention requirements.                                                                                            | S             |
| 1.3.1             | Development and implementation of guidelines and legal provisions with respect to the sound collection, temporary storage, decontamination and disposal of products containing mercury. |                   |               |                 |                    | i) the proposal decree contains provisions for collection, transport, storage, treatment and disposal of Hg-containing wastes from lamps and other wastes; ii) Guidelines for storage of Hg wastes was elaborated. | S             |



| <i>Objectives</i> |                                                                                                                                                                             | <i>Indicators</i> |                                                      | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <i>Rating</i> |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------|-----------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 2.1.1             | set up waste management committees in model facilities.                                                                                                                     | 2.1.1.1           | Number of committees settled                         | 0               | 13                 | Project assessed 10 hospitals from the ASSE network in 2016, noting only 4 settled waste committees <sup>4</sup> . However, ASSE reported that 100% of this network hospitals have settled their "respective committees". In addition, ASSE reported that it elaborated a "Handbook on Comprehensive Management of Hospital Wastes" in July 2016, which is used for training of their personnel. The project closed activities with ASSE network, but there is no certainty that all model hospitals have implemented the committees and applying sound management practices in each hospital, thus the project will need to make a further work with ASSE to ensure compliance with this activity. In addition, ASSE communicated that its participation in the project was not necessary. | MS            |
|                   |                                                                                                                                                                             | 2.1.1.1.1         | healthcare facilities and their dentistry department | 0               | 10                 | The project assessed 10 hospitals from the ASSE network in 2016, noting only 4 settled waste committees. However, ASSE reported that 100% of this network hospitals have settled their "respective committees". In addition, ASSE reported that it elaborated a "Handbook on Comprehensive Management of Hospital Wastes" in July 2016, which is used for training of their personnel. The project closed activities with ASSE network, but there is no certainty that all model hospitals have implemented the committees and applying sound management practices in each hospital, thus the project will need to make a further work with ASSE to ensure compliance with this activity.                                                                                                   | MS            |
|                   |                                                                                                                                                                             | 2.1.1.1.2         | large public/private entities                        | 0               | 3                  | The project has not worked with private hospitals yet. During the project extension period, this target would be attained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MS            |
| 2.1.2             | Conduct detailed Hg baseline assessment for its own model facility to assess the procurement, use, management, storage, clean-up and disposal of Mercury containing wastes. | 2.1.2.1           | Number of assessments made                           | 0               | 13                 | Project ascended baselines for Hg wastes in 10 institutions from ASSE network. More work should be done with ASSE to ensure that management plans are set and under implementation at each hospital                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MS            |

<sup>4</sup> INFORME DE AVANCES: RELEVAMIENTO DE LAS INSTITUCIONES MODELO Y DEFINICIÓN DE LÍNEA DE BASE.

| <i>Objectives</i> |                                                                                                                                                                                                              | <i>Indicators</i> |                                                                                                                                                          | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                                                                                                                                                                                                                                                   | <i>Rating</i> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 2.1.3             | Plan for management, storage and collection of Hg containing waste (waste streams that will not be phased-out as part of the project such as CFLs, dental amalgam) and phase-out of Mercury will be drawn up | 2.1.3.1           | Number of plans elaborated and implemented                                                                                                               | 0               | 13                 | No project supported plans for ASSE network hospitals yet. ASSE reported that all hospitals have waste management plans, an in case of no optimal management is detected by audits made by the MSP, they are noted in the report and must be solved for the next audit. More work should be done with ASSE to ensure that management plans are set and under implementation at each hospital | MS            |
| 2.1.4             | training of model facility personnel in the sound LCM of Hg containing wastes and waste products                                                                                                             |                   |                                                                                                                                                          | 0               | 500                | Approx. 367 personnel from ASSE, CIAT, academia were training through workshops, online conferences and meetings. This target would be attained during the project extension period if more work is done with ASSE and private hospitals                                                                                                                                                     | MS            |
| 2.1.5             | Conduct a study on staff preferences on cost-effective Hg-free alternatives at model HCFs and subsequently provide training on the use of Mercury-free medical devices.                                      |                   |                                                                                                                                                          | 0               | 1                  | i) A draft document on technical aspects for procurement of Mercury free medical devices by elaborated by the project and made available for the MSP; ii) a clinical study for the use of digital thermometers is underway, but it is delayed by almost a year now; iii) a report was issued in 2016 on evaluation of available mercury free alternatives for health sector.                 | MS            |
| 2.2.1             | Development of a detailed business plan for the operation of the treatment/decontamination facility and associated logistics and management arrangements.                                                    |                   |                                                                                                                                                          | 0               | 1                  | i) a report on detailed business plans, and the influence of regulations in a plant treatment viability was made in 2016.                                                                                                                                                                                                                                                                    | S             |
| 2.2.2             | CRA for the collection, transport, temporary storage and treatment of different types of Hg wastes assessed and put in place.                                                                                | 2.2.2.1           | assessment of various CRAs, calculate tariffs for (import/sales) and propose ways in which such taxes are to be channeled to benefit disposal operations | 0               | 1                  | A report on CRAs was elaborated in 2016. The technical option studied was distillation for Hg separation, project collects Hg wastes and the plant operation is considered as non-profit. Financing mechanism select is taxing on Hg products' imports.                                                                                                                                      | S             |

| <i>Objectives</i> |                                                                                                                                                              | <i>Indicators</i> |                          | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                                                                                                                                                                                                                                                             | <i>Rating</i> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------|-----------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 2.2.3             | Private Sector capacity built for various stages of Hg LCM.                                                                                                  |                   |                          |                 |                    | No activities                                                                                                                                                                                                                                                                                                                                                                                          | MU            |
| 2.2.4             | Business operations for LCM of Hg containing products launched.                                                                                              | 2.2.4.1           | No. of private operators | 0               | 0                  | No activities                                                                                                                                                                                                                                                                                                                                                                                          | MU            |
| 2.2.5             | Training of some private companies interested in participating in the collection, transport, temporary storage and treatment of different types of Hg wastes | 2.2.5.1           | No. of trainings         | 0               | 0                  | No activities                                                                                                                                                                                                                                                                                                                                                                                          | MU            |
| 2.2.6             | bidding procedures for private sector operators                                                                                                              | 2.2.6.1           | No. of bidding processes | 0               | 0                  | i) a bidding process failed due to failure by bidders to comply with the requirements established in the terms of reference of the bidding; ii) a new bidding process using MVOTMA rules is now under deployment, but there are uncertainties on when the public call for bidding would be launched.                                                                                                   | MS            |
| 3.1.1             | Assessment of technology needs conform to national needs and Basel guidelines completed.                                                                     |                   |                          | 0               | 1                  | A report on available technologies for treatment of mercury containing wastes was issued in 2016.                                                                                                                                                                                                                                                                                                      | S             |
| 3.1.2             | Technology and site specifications determined.                                                                                                               |                   |                          |                 |                    | Technical specifications are already elaborated.                                                                                                                                                                                                                                                                                                                                                       | MS            |
| 3.1.3             | Technologies procured and made operational.                                                                                                                  |                   |                          |                 |                    | As taxes on imports of Hg containing products was discarded, TCTP decided not to participate as implementer of the Hg treatment plant, since its operation will not cover investment, nor operational costs. A bidding process was made but failed since bidders could not comply with some specifications. A new bidding process is being elaborated by DINAMA, but there is no a clear schedule yet. | MS            |
| 3.1.4             | Testing and trials completed.                                                                                                                                |                   |                          |                 |                    | Bidding process failed and a new one is underway by DINAMA: Considering bidding, building of the treatment facility and issue of environmental permits, there are chances that this activity would not be attained during the project extension period, but after project ends.                                                                                                                        | MS            |

| <i>Objectives</i> |                                                                                                             | <i>Indicators</i> |  | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                                                                                                                                                            | <i>Rating</i> |
|-------------------|-------------------------------------------------------------------------------------------------------------|-------------------|--|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 3.1.5             | Facility workers and operators trained.                                                                     |                   |  |                 |                    | Bidding process failed and a new one is underway: This training would be done during project extension period.                                                                                                                                                                                        | MS            |
| 3.1.6             | Scenarios for technology transfer analyzed and optimum scenario implemented.                                |                   |  |                 |                    | Bidding process failed and a new one is underway. This product is possible to achieve in 2019.                                                                                                                                                                                                        | MS            |
| 3.1.7             | technical specifications based on the business plan prepared by PCTP/Pando                                  |                   |  |                 |                    | Bidding documents include technical aspects that must be fulfilled by bidders.                                                                                                                                                                                                                        | S             |
| 3.1.8             | launch of international procurement procedures.                                                             |                   |  |                 |                    | i) a bidding process failed due to bidders were unable to comply with the requirements established in the terms of reference of the bidding; ii) a new bidding process using MVOTMA rules is now under deployment, but there are uncertainties on when the public call for bidding would be launched. | MS            |
| 3.1.9             | EIA has been completed and construction permits are in place before technology installation                 |                   |  |                 |                    | No technology is implemented yet, but technical specifications are ready and a new bidding process for implementation is underway.                                                                                                                                                                    | MS            |
| 3.1.10            | Development and implement operating procedures for operation of the facility (TCTP)                         |                   |  |                 |                    | No technology is implemented yet, but technical specifications are ready and a new bidding process for implementation is underway.                                                                                                                                                                    | MS            |
| 3.1.11            | testing of the facility using available Hg containing stockpiles                                            |                   |  |                 |                    | No technology is implemented yet, but technical specifications are ready and a new bidding process for implementation is underway.                                                                                                                                                                    | MS            |
| 3.2.1             | Short term, intermediate and long-term storage and disposal options assessed.                               |                   |  | 0               | 1                  | Not implemented yet, but it should be achieved when the new decree enters into force.                                                                                                                                                                                                                 | S             |
| 3.2.2             | One medium term Hg storage facility to service the treatment/decontamination facility established/upgraded. |                   |  | 0               | 1                  | Not implemented yet.                                                                                                                                                                                                                                                                                  | S             |

| <i>Objectives</i> |                                                                                                                | <i>Indicators</i> |                                                   | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                              | <i>Rating</i> |
|-------------------|----------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 3.2.3             | Safe interim storage spaces for Mercury containing products made available/established at each model facility. |                   |                                                   | 0               | 13                 | 10 assessments for ASSE's hospitals were made, but no implementation of storage locations was reported for all model institutions.                                      | MS            |
| 3.2.4             | Operational procedures developed and implemented for the management of storage facilities/spaces.              |                   |                                                   |                 |                    | A Handbook for Mercury wastes storage was issued in 2017. ASSE elaborated the "Handbook on Comprehensive Management of Hospital Wastes".                                | S             |
| 3.2.5             | Long-term storage option(s) for recovered elemental Mercury established                                        |                   |                                                   |                 |                    | It was decided that storage of elemental mercury will not be implemented in Uruguay.                                                                                    | N/A           |
| 3.2.6             | Private sector operators, PCTP and model facility staff trained in the safe management of Hg storage spaces.   |                   |                                                   | 0               | ??                 | Not implemented yet.                                                                                                                                                    | S             |
| 4.1.1             | Technical specifications for PCTP and CIAT (MSP) bio-monitoring laboratory equipment prepared.                 |                   |                                                   | 0               | 1                  | Specifications were elaborated in 2015                                                                                                                                  | S             |
| 4.1.2             | Procurement of laboratory equipment and reagents.                                                              |                   |                                                   | 0               | 1                  | 2 mercury analyzers were purchased for PCTP and MSP.                                                                                                                    | MS            |
| 4.1.3             | Protocol for sampling and analysis of Hg in water/leachate, soil, air and biological samples developed.        |                   |                                                   | 0               | 1                  | Some protocols are available for sampling sediment, sampling and analysis of blood, urine and human hair.                                                               | S             |
| 4.1.4             | PCTP/CIAT personnel/staff trained in sampling and conducting analysis.                                         |                   |                                                   | 0               | 1                  | PCPT is conducting analysis for mothers' blood, urine, hair and blood from umbilical cords. Personnel from ASSE's hospitals were trained on proper sampling procedures. | S             |
| 4.1.5             | Samples for "population-at-risk" study obtained and analyzed by PCTP/CIAT.                                     | 4.1.5.1           | Results interpreted by PCTP/CIAT published and in | 0               | 1                  | In process but sampling and analysis are delayed by almost a year. At the time of the MTR, 1,400 samples were taken from which approx. 800 have been analyzed.          | MS            |

| <i>Objectives</i> |                                                                                                                                                                    | <i>Indicators</i> |                            | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                                                                                                                                                                                                 | <i>Rating</i> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|-----------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|                   |                                                                                                                                                                    |                   | scientific journal         |                 |                    |                                                                                                                                                                                                                                                                                                                                            |               |
|                   |                                                                                                                                                                    | 4.1.5.2           | No. of samples taken       | 0               | 700                | Partial, approx.50% of samples from pregnant women and 30% of neonates were taken. This study would be completed by 2018 - 2019. Results obtained from a small number of samples were presented at PPTOX event made in Faroe Islands in June 2018.                                                                                         | MS            |
| 4.1.5.1           | Regular monitoring of interim storage facilities and staff working at project model facilities who regularly come in close contact with Hg containing wastes       |                   |                            | 0               | 13                 | Although some monitoring was made to support UTE's plan "Collect light bulbs", this activity will be changed to two products: i) Environmental Conditions relative to Mercury; ii) Guidelines for Surveillance of Exposed Population" (based on results of Hg in pregnant and neonates' study). The is no schedule yet for implementation. | S             |
| 4.1.5.2           | PCPT monitors Hg levels in operators and staff involved in the transportation of Hg containing waste and management of the treatment/decontamination facility.     | 4.1.5.2.1         | No. of operators monitored | 0               | 0                  | This will not be implemented, since TCTP will not operate any treatment facility.                                                                                                                                                                                                                                                          | N/A           |
| 4.1.5.3           | PCTP/Pando obtains and analyzes air/water/soil samples in the vicinity of the interim storage and treatment/decontamination facility                               |                   |                            | 0               | ??                 | This will not be implemented, since TCTP will not operate any treatment facility.                                                                                                                                                                                                                                                          | N/A           |
| 4.1.5.4           | CIAT engaged in the design of the sampling study and questionnaires, conduct the sampling at healthcare facilities and support the interpretation of study results |                   |                            | 0               | 1                  | Partial. Methodology and procedures have been set, but sampling and analysis are delayed.                                                                                                                                                                                                                                                  | S             |
| 4.1.5.5           | provision of necessary technology and equipment to PCTP and CIAT                                                                                                   | 4.1.5.5.1         | No. of equipment provided  | 0               | 2                  | 2 mercury analyzers were purchased for PCTP and MSP.                                                                                                                                                                                                                                                                                       | S             |

| <i>Objectives</i> |                                                                                                                   | <i>Indicators</i> |                            | <i>Baseline</i> | <i>Target 2017</i> | <i>Status at June 2018</i>                                                                                                                                                                             | <i>Rating</i> |
|-------------------|-------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|-----------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 4.1.6             | Environmental and bio-monitoring program launched for all model facilities.                                       | 4.1.6.1           | No. of monitoring programs | 0               | 13                 | This monitoring will not be implemented, and it was changed by a study made by MS to exposed workers. MS also made other study on populations at risk, and acceptable levels of Hg were obtained.      | S             |
| 4.2.1             | Website, Facebook and Twitter page developed and regularly updated                                                |                   |                            | 0               | 3                  | Website implemented, but Facebook and twitter pages are pending. These activities will be implemented as news from the project emerge, and they will be communicated through MVOTMA official channels. | S             |
| 4.2.2             | Side event organized at a chemicals-related COP (Basel, Minamata) to present project results and lessons-learned. |                   |                            | 0               | 1                  | Not implemented yet.                                                                                                                                                                                   | S             |
| 4.2.3             | Video on the LCM of Mercury management produced at the end of project implementation and posted on YouTube.       |                   |                            | 0               | 1                  | This video will be replaced by 2 videos: i) study on pregnant women and neonates; ii) technology transfer in Uruguay.                                                                                  | S             |
| 5.2.1             | Quarterly project progress reports as required by the GEF and UNDP                                                |                   |                            | 0               | 12                 | On track, project progress has been timely reported during implementation.                                                                                                                             | S             |
| 5.2.2             | Annual project progress reports as required by the GEF and UNDP                                                   |                   |                            | 0               | 3                  | On track, project progress has been timely reported during implementation.                                                                                                                             | S             |
| 5.2.3             | Mid-term technical review                                                                                         |                   |                            | 0               | 1                  | MTR is underway.                                                                                                                                                                                       | S             |
| 5.2.4             | Final project review                                                                                              |                   |                            | 0               | 1                  | N/A                                                                                                                                                                                                    | N/A           |

## Implementation arrangements and Adaptive management

As discussed in Section 2, DINAMA settled a steering committee, an advisory technical group and a team for executing the project. The project team depends directly from DINAMA's national director, and it is in the Basel Coordinator Center at LATU headquarters in Montevideo. The team is composed by 6 persons as shown in Table No.11. The project also hired 3 consultants to develop specific studies (CRAs, identifications of technologies, business models, collection and disposal options, storage, etc.).

*Table No.11: Project team composition.*

| Number | Responsibility                                                                     | Time allocation |
|--------|------------------------------------------------------------------------------------|-----------------|
| 1      | Coordinator                                                                        | Full time       |
| 1      | Administrative assistant, M&E, Budget                                              | Part-time       |
| 1      | Technical support                                                                  | Part-Time       |
| 1      | Lawyer supports elaboration of Hg decree and is located at DINAMA's lawyer office. | Part-Time       |
| 1      | Medical adviser and coordination of pregnant women & neonate study.                | Part Time       |
| 1      | Medical statistics adviser.                                                        | Part-time       |

The steering committee formed by representatives from 4 institutions, and the advisory group is organized by specific subjects, thus there is no need for all participants to attend all meetings. 5 working groups were settled, dealing with specific topics like waste collection, treatment, Hg in medical instruments, regulations, etc.

This managerial arrangement resulted in a high participation of main stakeholders and it was a good technical support to both, the project team and the PSC.

*Table No.12: Technical discussion groups supporting project implementation<sup>23</sup>*

|                                                      | COMPONENTE I           |                                       |                           |                                             | COMPONENTE II                                         |                                                 |                                           | COMP. III                               | COMPONENTE IV                  |                                           |
|------------------------------------------------------|------------------------|---------------------------------------|---------------------------|---------------------------------------------|-------------------------------------------------------|-------------------------------------------------|-------------------------------------------|-----------------------------------------|--------------------------------|-------------------------------------------|
|                                                      | Consultor 1 - Jurídico | Consultor 2 - Técnico LCM iluminación | Consultor 3 - LCM médicos | Consultor 4 - Pautas de gestión de residuos | Consultor 5 - acompañamiento comités en instituciones | Consultor 6 - alternativas dispositivos medicos | Consultor 7- economista, plan de negocios | Consultor 8- especialista internacional | Consultor 9- plan biomonitorio | Consultor 10- plan monitoreo agua y suelo |
| PNUD                                                 |                        |                                       |                           |                                             |                                                       |                                                 |                                           |                                         |                                |                                           |
| Agencia Uruguaya de Cooperación Internacional (AUCI) |                        |                                       |                           |                                             |                                                       |                                                 |                                           |                                         |                                |                                           |
| DINAMA                                               | •                      | •                                     | •                         | •                                           | •                                                     |                                                 |                                           |                                         |                                | •                                         |
| MSP                                                  | •                      |                                       | •                         | •                                           | •                                                     | •                                               |                                           |                                         | •                              | •                                         |
| ASSE                                                 | •                      |                                       |                           |                                             | •                                                     | •                                               |                                           |                                         | •                              |                                           |
| UTE                                                  |                        | •                                     |                           |                                             | •                                                     |                                                 | •                                         |                                         |                                |                                           |
| LATU                                                 |                        |                                       | •                         |                                             |                                                       | •                                               |                                           |                                         |                                |                                           |
| PCTP                                                 |                        |                                       |                           |                                             |                                                       |                                                 | •                                         | •                                       | •                              | •                                         |
| CIAT                                                 |                        |                                       | •                         |                                             | •                                                     | •                                               |                                           |                                         | •                              | •                                         |
| AOU                                                  |                        |                                       | •                         |                                             |                                                       |                                                 |                                           |                                         |                                |                                           |
|                                                      |                        |                                       |                           |                                             |                                                       |                                                 |                                           |                                         |                                |                                           |
| Cantidad intervinientes                              | 3                      | 2                                     | 5                         | 2                                           | 5                                                     | 4                                               | 2                                         | 1                                       | 4                              | 4                                         |

<sup>23</sup>AWP 2015



### Work Planning

The project elaborated 5 annual work plans (2014, 2015, 2016, 2017 and 2018), with their corresponding budgets. These documents consist in a summary of activities and attainments reached during the previous year, and then they establish the activities and goals for the next year. However, they do not show the level of implementation of activities or targets accomplished, with the exception for disbursements, which show the % of real execution versus planned for each year.

On the other hand, planned activities are described and grouped under each project component, but there is no mention about the specific item/activity where such activity will be allocated. The above situations bring a confuse view to the reader, since it is not possible to verify the real progress for an activity which is mentioned through various AWP without stating what is pending from that activity and risks to complete it.<sup>24</sup>

These AWP were discussed with the different partners to check viability of the activities described on them, and it would be considered a good management practice that ensures partners' commitment with project goals and activities.

In any case, these AWP are much more comprehensive than others that this consultant had revised before, and it would be advisable the use of an identical standard format applied to all these AWPs.

### Financing and Co-financing.

The project has a GEF in cash grant of US\$ 1,237, 800 and a co-financing of US\$ US\$ 2.95 million, whose breakdown in shown in Tables No. 13 and 14.

Table No.13: Project costs breakdown

| <i>Item/year</i>                             | <i>Year1</i>   |                    | <i>Year2</i>   |                    | <i>Year3</i>   |                    | <i>Total</i>     |                    |
|----------------------------------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|------------------|--------------------|
|                                              | <i>GEF</i>     | <i>Cofinancing</i> | <i>GEF</i>     | <i>Cofinancing</i> | <i>GEF</i>     | <i>Cofinancing</i> | <i>GEF</i>       | <i>Cofinancing</i> |
| Outcome1                                     | 18.500         |                    | 48.000         |                    | 14.000         |                    | 80.500           |                    |
| Outcome2                                     | 71.500         |                    | 66.500         |                    | 66.500         |                    | 204.500          |                    |
| Outcome3                                     | 61.500         |                    | 554.500        |                    | 11.500         |                    | 627.500          |                    |
| Outcome4                                     | 21.500         |                    | 139.000        |                    | 22.500         |                    | 183.000          |                    |
| Outcome5                                     | 3.000          |                    | 20.000         |                    | 35.000         |                    | 58.000           |                    |
| <b>Outcome6<br/>(project<br/>management)</b> | <b>24.700</b>  |                    | <b>37.700</b>  |                    | <b>21.900</b>  |                    | <b>84.300</b>    |                    |
| <b>Total<br/>GEF+Cofinancing<br/>(US\$)</b>  | <b>200.700</b> | <b>525.000</b>     | <b>865.700</b> | <b>1.155.260</b>   | <b>171.400</b> | <b>1.350.000</b>   | <b>1.237.800</b> | <b>4.268.060</b>   |

---

<sup>24</sup>AWPs for 2017 and 2017.

Table No.14: cofinancing details until December 2016

| Institution                                | Committed in prodoc |                  |                  | Reported in Dec 2016 |                |           |            |
|--------------------------------------------|---------------------|------------------|------------------|----------------------|----------------|-----------|------------|
|                                            | In Kind             | Cash             | Total (US\$)     | In Kind              | Cash           | % in Kind | % cash     |
| Centro Basilea (BCCC-LAC)                  | 30.000              | 10.000           | 40.000           | 28.380               | 11.836         | 95%       | 118%       |
| MVOTMA                                     | 260.000             | 90.000           | 350.000          | 16.262               | 89.207         | 6%        | 99%        |
| MSP                                        | 245.000             | 65.000           | 310.000          | 7.475                | 19.834         | 3%        | 31%        |
| PCTP                                       | 481.560             | 301.200          | 782.760          | 7.500                | 9.193          | 2%        | 3%         |
| UTE                                        | -                   | 1.290.000        | 1.290.000        | 235                  | 180.921        |           | 14%        |
| PNUD                                       | 175.000             | -                | 175.000          | 4.700                | 8.841          | 3%        |            |
| <b>Total Co-financing committed (US\$)</b> | <b>1.191.560</b>    | <b>1.756.200</b> | <b>2.947.760</b> | <b>64.552</b>        | <b>319.831</b> | <b>5%</b> | <b>18%</b> |
| <b>New co-financing institutions</b>       |                     |                  |                  |                      |                |           |            |
| AOU                                        | -                   | -                | 0                | 150                  | 301            |           |            |
| ASSE                                       | -                   | -                | 0                | 8.887                | 15.959         |           |            |
| CIAT                                       | -                   | -                | 0                | 4.725                | 10.472         |           |            |
| IPTP                                       | -                   | -                | 0                | 7500                 | 7714           |           |            |
| LATU                                       | -                   | -                | 0                | 575                  | 1407           |           |            |
| <b>Total new-cofinancing</b>               | <b>-</b>            | <b>-</b>         | <b>-</b>         | <b>21.837</b>        | <b>35.853</b>  |           |            |
| <b>Total- co-financing</b>                 | <b>1.191.560</b>    | <b>1.756.200</b> | <b>2.947.760</b> | <b>86.389</b>        | <b>355.684</b> | <b>7%</b> | <b>20%</b> |

Table No.15: Summary of disbursement rates 2014-2018 (US\$)

| Fund                | Activity Id                        | Fiscal Year   |                | 2016           | 2017           | 2018          | Total          |
|---------------------|------------------------------------|---------------|----------------|----------------|----------------|---------------|----------------|
|                     |                                    | 2014          | 2015           |                |                |               |                |
| <b>62000</b>        | Outcome 1                          |               | 17.620         | 13.264         | 19.605         | 5.321         | 55.811         |
|                     | Outcome2                           |               | 60.471         | 20.080         | 92.872         | 16.932        | 190.354        |
|                     | Outcome 3                          |               | 4.668          | 29.391         | 45.046         | 243           | 79.349         |
|                     | Outcome 4                          |               | 84.173         | 2.915          | 45.080         | 7.335         | 139.502        |
|                     | Outcome 5                          |               | 2.733          | 11.694         | 5.548          |               | 19.975         |
|                     | Outcome 6<br>(project management ) | 11.094        | 24.648         | 67.362         | -32.501        | 8.581         | 79.184         |
| <b>Total (US\$)</b> |                                    | <b>11.094</b> | <b>194.314</b> | <b>144.706</b> | <b>175.650</b> | <b>38.412</b> | <b>564.176</b> |

Table No.16: Disbursement rates 2014-2018

|                         | 2014          |                | 2015           |                | 2016           |                | 2017           | 2018          | Balance                  |                  |                              |                                   |
|-------------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|--------------------------|------------------|------------------------------|-----------------------------------|
| Outcome                 | Disbursed     | (% of planned) | Disbursed      | (% of planned) | Disbursed      | (% of planned) | Disbursed      | Disbursed     | Disbursed until May 2018 | % project budget | Budget Remaining at May 2018 | % of Budget Remaining at May 2018 |
| 1                       | -             | 0%             | 17.620         | 37%            | 13.264         | 95%            | 19.605         | 5.321         | 55.811                   | 69%              | 24.689                       | 31%                               |
| 2                       | -             | 0%             | 60.471         | 91%            | 20.080         | 30%            | 92.872         | 16.932        | 190.354                  | 93%              | 14.146                       | 7%                                |
| 3                       | -             | 0%             | 4.668          | 1%             | 29.391         | 256%           | 45.046         | 243           | 79.349                   | 13%              | 548.151                      | 87%                               |
| 4                       | -             | 0%             | 84.173         | 61%            | 2.915          | 13%            | 45.080         | 7.335         | 139.502                  | 76%              | 43.498                       | 24%                               |
| 5                       | -             | 0%             | 2.733          | 14%            | 11.694         | 33%            | 5.548          | -             | 19.975                   | 34%              | 38.025                       | 66%                               |
| 6                       | 11.094        | 45%            | 24.648         | 3%             | 67.362         | 308%           | -32.501        | 8.581         | 79.184                   | 94%              | 5.116                        | 6%                                |
| <b>Total GEF (US\$)</b> | <b>11.094</b> | <b>6%</b>      | <b>194.314</b> | <b>22%</b>     | <b>144.706</b> | <b>84%</b>     | <b>175.650</b> | <b>38.412</b> | <b>564.176</b>           | <b>46%</b>       | <b>673.624</b>               | <b>54%</b>                        |

Some conclusions can be drawn from the above 3 tables. Firstly, a biased project budget allocating nearly 54% of project resources puts its execution as High risks, since if something fails, the remaining activities would not compensate for such a failure. On the other hand, co-financing has not been met, at least until May 2018, reaching only 18% from committed cash resources, where UTE alone counts for 73% of all these resources, whereas PCTP accounts for other 17% from all contributions.

But there is an important to note a good practice developed by the project team to account both, cash and in-kind contributions from project partners. The project elaborated a template containing explanatory notes on how partners should report their contributions, making this system very consistent since all involved are reporting on the same basis, thus yielding credible results.

Another important project achievement has been its ability to commit new co-financing from new partners not identified during project preparation. Although this co-financing is still low, it is important as a signal of country ownership and sustainability of results. Finally, given the low level of co-financing achieve up to date, it is important that UTE will continue its program once the project is finished, since they have committed to fulfill its target of 1.4 million of lamps recovered.

Regarding project expenditures, disbursements rates have been slow because of the concentration of 54% of resources in a single outcome, thus at May 2018, only 46% of GEF total resources were spent, leading to a remaining balance of US\$ 674,000. As many activities are still ongoing, a new extension seems necessary to make a proper project closure. According to data provided by the project coordinator, US\$ 11,000 are salaries for the project team leading project's technical issues, and making a quick projection, considering business as usual scenario for the next 19 months (project closure by Dec 2019), disbursements for project staff would account for US\$ 209,000 leaving a remaining of approx. US\$ 465,000 for implementation of activities, where approx. US\$ 300,000 would be allocated to the treatment plant.

### Monitoring and Evaluation

Prodoc established a tentative schedule for M&E, which is shown in Table No.17 bellow.

Table No 17: M&E and project milestones according project document.

| <b>Activity</b>                                                                        | <b>Tentative schedule</b>                     | <b>Compliance</b>                                                                |
|----------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------|
| Inception Workshop and Report.                                                         | April 2014                                    | July 2014                                                                        |
| Measurement of Means of Verification of project results                                | Annually (Feb. 2014, Aug 2015, Febr2017)      | Baselines determined during 2014 and 2015. Project Progress is annually reported |
| Measurement of Means of Verification for Project Progress on output and implementation | Annually (Feb. 2015, Feb 2016, Febr2017)      | Nov 2014, Nov 2015, Nov 2016, Nov2017                                            |
| ARR/PIR                                                                                | Feb. 2015, Febr2016; Feb. 2017                | May 2015, May 2016, May 2017                                                     |
| Progress reports                                                                       | Quarterly (may, August and November and Feb.) | Annual and monthly reports                                                       |
| Int. Expert for Technical Review of Project                                            | August 2015                                   | May 2018                                                                         |
| Final Evaluation                                                                       | Nov 2016                                      | August 2019 possibly                                                             |
| Project Terminal Report                                                                | Nov 2016                                      | August 2019 possibly                                                             |
| Audit                                                                                  | One in four years                             | April 2017                                                                       |
| Visits to field sites                                                                  | Annually                                      | Activities are focused on Montevideo city                                        |
| PSC meetings                                                                           | Biannual (Feb. 2015, Feb. 2016 and Febr2017)  | July 2015, Dec 2015, August 2016, Nov2016, July 2017, Jan 2018.                  |
| AWP and Budgets                                                                        | Annually (Feb. 2014, Febr2015, Febr2016)      | Dec 2014, Dec 2015, Dec 2016, Dec 2017.                                          |
| GEF Tracking Tools                                                                     | Feb. 2014, Aug 2015, Feb. 2017                | Only available for June 2015 (2 TT elaborated at MTR)                            |

The PSC met twice a year between 2015 and 2018, making 6 meetings in total. From the minutes obtained and interviews, it is possible to state that this PSC discussed strategic issues regarding project implementation. In the same way, the RTA located in Panama provided advice regarding different issues that the project had to tackle, as it was the case when PTCP decided to stop working in the treatment plant as consequence of the DINAMA decision of not including taxes for imports of Hg containing products, situation that it would turn the business model unsustainably in the long term.

Another very important group settled was the technical advisory committee, which was redesigned to form small groups focused on specific topic such as lamps, collection of Hg wastes, follow-up of the business models' consultancy and screening of existing treatment for Hg wastes, regulations and medical related issues. This organization was optimal in the sense that participants do not need to attend all meetings and follow all discussions, but only those pertained to their individual interest. This factor maintained the focus and interest of most of stakeholders and increased commitments to implement all project activities and search for alternative pathways in case of failure of some project products or activities.

### Reporting

Besides the standard reports regularly submitted to UNDP and DINAMA, the project implemented a good monthly newsletter to inform stakeholders and interested public opinion. Every issue reported on progress of activities and concerns presented during project implementation, and corrective actions taken. This constituted a very good practice to keep informed and maintain interest of all representatives from partners institutions.

PSC minutes and PIR reports meet the standard practices regarding the contents they should present, providing a good idea about issues and potential actions to surpass these issues. Besides the above, the project coordinator regularly met DINAMA, UNDP, project committees and other authorities for reporting and coordination of activities. Finally, the project elaborated the GEF TT for project initial and midterm stages.

Therefore, the project team followed standard practices well for reporting and coordination, and a good practice (the monthly newsletters) was also identified, thus its continuation should be replied and encouraged.

### Stakeholder Involvement

As mentioned previously, the project could get the support of main stakeholders involved in mercury issues, as it was shown in Table No.8.

As it was also mentioned before, various technical working groups dealing with specific subjects were settled and provided regular inputs for implementation of project activities and decision makers. It is worth noting that this scheme was of wide participation and open discussions among all participants, reaching agreements on regulatory, technical options and best potential activities, allowing to sort out and resolve many issues presented when implementing the different project outcomes.

These stakeholders were regularly updated with the monthly newsletters issued by the project and maintained the interest of project participants.

It is important to mention at this time, that some issues are also present with some stakeholders and are still without resolution. This is the case of the Faculty of Odontology from UDLR, who stocked Hg wastes from its own university and from some ASSE's Hospitals. At the time of MTR there was no solution on how to properly storage and dispose these wastes, thus feelings of concerns about what to do with these wastes were noted during interviews.

### Sustainability

#### Financial

As taxes for Hg containing products imports will not be applied, there is a substantial risk that operation of a Hg treatment plant will not be able to operate and generate revenues needed to recover investment and operational costs. PTCP quit from its participation in the project due to their financial sustainability risks, since Hg waste stocks do not attain suitable volumes for economies of scale operations.

The business model designed during the project preparation phase was changed, and now - according the proposed decree in process of approval -, corporate and institutional users of Hg lamps and medical devices will have to bear these costs through a post-consumption plan. If this regulation is effective and properly enforced, it would create a market for the whole Hg wastes' process chain (collection, transport, storage, treatment and disposal). As there are private companies already licensed to process other type of hazardous wastes, it seems there is an interest to participate in the new bidding process that will return their investments in a Hg waste treatment facility and obtain sufficient resources for its operation and maintenance.

The project reported that there is interest from private companies to participate in this process and rated this risk as "Medium".

In the evaluator's view, this risk would be rated as medium provided both the draft decree is approved and this monopoly activity is under control and prices for this service are properly regulated.

### Socio-economic Risks

The country shows a stable economy and strong institutional stability; therefore, no risks are envisaged in this regard.

## 4. Conclusions

### Implementation

The project is delayed and needs an additional extension to fulfill its results. There are several reasons for this situation, but the most important is the change in the business model and type of regulation needed to tackle Hg wastes in the country. Other factor is the county's small market and difficulties to implement efficiently and cost effectively technologies to treat and dispose such lesser amounts of material. Most private companies dealing with hazardous waste management are of middle size that need technological upgrade, being this one of the factors that made the first bidding process failed, since none of the bidders could fulfill the requirements established in the terms of reference of the bidding.

Regarding project expenditures, disbursements rates have been slow because of the concentration of 54% of resources in a single outcome, thus at May 2018, only 46% of GEF total resources were spent, leading to a remaining balance of US\$ 674,000. According to data provided by the project coordinator, US\$ 11,000 are salaries for the project team leading project technical issues, and making a quick projection for the next 19 months considering a "business as usual" scenario (project closure by Dec 2019), disbursements for project staff would account for US\$ 209,000 leaving a remaining of approx. US\$ 465,000 for implementation of activities, where approx. US\$ 300,000 would be allocated to the treatment plant.

Working with ASSE's hospitals needs more follow-up for activities of the waste committees and implementation of their Hg management systems, and these would be very important for supporting ASSE's efforts to implement its own guidelines to deal with these wastes in each hospital.

The Hg analyzer stored and with no use in MSP has delayed the implementation of Hg content analysis of samples collected for the Pregnant and neonate study, overloading the work in PCTP and stocking a considerable number of samples in CIAT.

Good practices were detected during the MTR. The first one is the settling of thematic committees working in specific topics of interest for the project. This modality allowed continuous inputs for the project and decision makers, about regulatory and technical issues raised and maintained the interest and participation of key stakeholders involved. It worth noting that these working groups were very participative, thus their main concerns and proposals had been properly considered and discussed, ensuring their commitment with the project.

Another good practice detected was the issue of a monthly newsletters to all stakeholders that maintained stakeholders informed and provided a wide view on project progress.

The possibility that the draft decree is approved by the different ministries involved is high, but there is no clear schedule on when this will happen. At the time of this report, 5 ministries have already signed the decree, and it is ready for presidential signature. The same applies for the bidding process, and this

seems more complicated, since tendering processes from government take long time and there are many parties involved in the revision of tender and bidding documents and their approval.

Reduction targets of Hg wastes disposed will not be attained during the project implementation timeframe (even with the project extension period), but they will be met once regulations enter into force and the treatment plan is commissioned.

Currently, some key activities are pending, and they should be implemented during the project extension period: i) project exit strategy; ii) a gender approach and plan; iii) a report on lessons learnt and, iv) a replication strategy for project results.

### Project design

It would be advisable that indicators should measure results and do not indicate activities or confusing units of measurements.

When designing a project, a balanced budget should be elaborated, and it should not rely on a single activity, to decrease project risks.

Allocation of 54% of project resources seems a weakness in its design. On the other hand, indicators are confusing sometimes, and they resemble activities rather than measurement of results.

In any case, the process was very participative and the prodoc shows well the situation of Hg wastes, knowledge, regulations and institutional capacity existent at that time.

### Reporting

The project complied with UNDP and GEF requirements on reporting project progress in a timely manner.

## 4. Recommendations

### Implementation

An extension for an additional year is recommended to allow project to meet its desired results.

It is recommended to stress the work with ASSE and MS in terms of strengthening hospitals' waste committees and insist to support the elaboration of their waste management plans and their evaluation and follow up.

Further work with ASSE will be needed to assess if all hospitals have settled their wastes' committees and established their needs for sound waste management, in particular Hg wastes.

Support MS with one or two consultants to implement the clinical study for mercury- free thermometers and blood pressure devices. It is recommended to locate these consultants at MS offices, but with a clear mandate and ToR delineating their responsibilities, tasks and schedules. It is also recommended to hire a professional responsible for elaboration and implementation of waste management plans for each model institution.

More work with private hospitals is advisable, and the project would communicate its will of working with this type of hospitals and invite MSP and ASSE to participate in the activities.

Release of the Hg analyzer from MSP is a need for the project. It is recommended to set a deadline to MSP to star-up and operate the analyzer (2 months would be a reasonable time), otherwise the equipment should be allocated to another institution with capacity to put the it in service.

Support UTE's lamp retrieval program in terms of promoting more collection points with private companies (e.g., lamp importers, supermarkets, hospitals, etc.).

To resolve-as soon as possible- the problem of wastes stored at LATU and the Faculty of Odontology of UDLR by, for example, hiring a licensed company for disposal of these wastes.

Elaborate a project exit strategy, lessons learnt document, a project gender strategy /plan and the strategy for replication.

Start providing support to department governments to decentralize waste management and enforcement of Hg regulations.

### *Project Design*

Revision of project indicators to define more clear targets is recommended, since they resemble activities rather than a description of a progress of a result.

### *Reports*

Revision of AWP format and contents is advisable, to have better understanding about the real status of implementation of an activity. The reports would show the a more defined situation of its implementation for the period which is reported and its cumulative status at the time of the report.



## 5. Project Ratings

| Parameter                                             | MTR rating                                             |     | Description of achievement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------|--------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project strategy</b>                               |                                                        | N/A |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Progress towards attainment of results</b>         | Level of achievement of global environmental objective | MS  | As Hg treatment plant is not in place and there are uncertainties on when bidding procedures would be approved and launched by DINAMA, there is a high probability that this target would be attained in 2018. It has also low probability that the treatment facility would be operational by 2019, since its implementation will depend on environmental permits that should be issued by DINAMA. Possibility that this goal would be achieved after project completion thanks to the new decree's provisions regarding post-consumption plans and disposal requirements included in it. |
|                                                       | Level of attainment of development objective           | S   | The project has strengthened DINAMA, MS, ASSE, LATU, CIAT, Faculty of Odontology from UDLAR and PCTP in proper management of Hg wastes and provided technical support to identify best available technologies and practices.                                                                                                                                                                                                                                                                                                                                                               |
|                                                       | Level of attainment of Result 1                        | S   | Although some project activities are delayed, a decree for regulating Hg is ready for approval by 5 ministries. At the time of this revision, the decree is ready for president's signature.                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                       | Level of attainment of Result 2                        | S   | Identification of sound technologies for treatment of Hg wastes was achieved and development of a business model for sound management of these wastes was elaborated.                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                       | Level of attainment of Result 3                        | MS  | Technical specifications for the treatment facility was elaborated, but bidding process failed mainly because some bidders did not meet requirements regarding financial capacity and other procurement standards. A second call for bidding is being elaborated by DINAMA, but no schedule is available at this time.                                                                                                                                                                                                                                                                     |
|                                                       | Level of attainment of Result 4                        | MS  | Analysis of samples for the study of Hg contents in pregnant women and neonates is delayed and bio-monitoring at the new Hg waste treatment facility enters operation.                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                       | Level of attainment of Result 5                        | S   | The project team has developed a M&E system, and effective technical working groups of committed stakeholders that are providing valuable inputs to decision makers. Good practices were detected                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Project implementation and adaptive management</b> |                                                        | S   | IDEM outcome 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Sustainability</b>                                 |                                                        | ML  | Project results would be attained provided that decree is approved, and the Hg waste treatment plant is commissioned.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

N/A: not applicable

## Annexes

## Annex 1: TDR

## *Annex 2: Project Results Matrix*

### *Annex 3: Mission Agenda*

#### *Annex 4: List of Interviewees*

## *Annex 5: Evaluation Questions Matrix*

## *Annex 6: List of Documents Reviewed*



## *Annex 7: Evaluation Trail*

*Annex 8: Indicative list of main project indicators.*

