

**part i: project information**

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| Project Title: Impact Investment and Capacity Building in Supporting Waste Management to reduce emissions of unintentional POPs (UPOPs) and mercury in West Africa | | | |
| Country(ies): | Benin, Burkina Faso, Mali, Niger, Senegal and Togo | GEF Project ID: | 9371 |
| GEF Agency(ies): |  | GEF Agency Project ID: |  |
| Project Executing Entity(s): |  | Submission Date: |  |
| GEF Focal Area (s): |  | Expected Implementation Start | January 2020 |
|  |  | Expected Completion Date | January 2025 |
| Name of Parent Program | [if applicable] | Parent Program ID: |  |

1. **Focal/Non-Focal Area Elements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Programming Directions** | **Focal Area Outcomes** | Trust Fund | (in $) | |
| GEF Project Financing | Co-financing |
|  | Outcome 1.1: Countries have appropriate decision-making tools and economic approaches to promote the removal of barriers preventing the sound management of harmful chemicals and waste  Outcome 1.2: Innovative technologies are successfully demonstrated, deployed and transferred |  | 5,800,000 | 57,500,000 |
|  | Outcome 3.1: Quantifiable and verifiable tonnes of POPs eliminated or reduced |  | 4,730,771 | 1,500,000 |
|  | Outcome 4.1: Mercury is reduced |  | 2,400,000 | 1,000,000 |
|  | Outcome 6.1: Capacity of LDCs and SIDS to manage harmful chemicals and waste is enhanced  Outcome 6.2: LDCs and SIDS regional/sub-regional plans include and account for the management of harmful chemicals and waste. |  | 2,994,000 | 2,000,000 |
|  | Outcome B. Policy, planning and regulatory frameworks foster accelerated low GHG development and emissions mitigation  Outcome C. Financial mechanisms to support GHG reductions are demonstrated and operationalized |  |  | 68,797,229 |
| **Total project costs** | |  | 15,924,771 | **130,797,229** |

1. **Project description summary**

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| --- | --- | --- | --- | --- | --- | --- |
| **Project Objective: Objective:** To scale up investments in SMEs operating municipal solid waste (MSW) and healthcare waste (HCW) and strengthen national, institutional, technical and legal infrastructure and capacity for POPs phase out, mercury reduction and sustainable waste management in the countries of WAEMU | | | | | | |
| **Project Components/**  **Programs** | **Component Type** | **Project Outcomes** | **Project Outputs** | Trust Fund | (in $) | |
|  |  |  |  |  | GEF Project Financing | Confirmed Co-financing | |
| 1. Establishment of a regional capacity and experiences  sharing among project countries to promote sustainable waste management | Technical Assistance | Outcome 1.1: Decision-making tools are in place to promote sustainable waste management at regional level and reduce pollutant releases  Outcome 1.2: Capacity for sharing experiences and expertise on sustainable waste management in place and strengthened  Outcome 1.3: Monitoring, evaluation and impact assessment | Output 1.1.1: Establishment of a regional secretariat for project coordination  Output 1.1.2: A common regional strategy for the development of waste treatment sub-sectors, including approaches to reduce releases of UPOPs and mercury, as well as framework directives on waste adopted  Output 1.1.3: Regional study of technical and economic requirements for waste management and sustainable funding for collection, sorting and recycling in WAEMU  Output 1.2.1: Three working groups on priority topics established  Output 1.2.2: An operational regional platform of public and private waste management experts and practitioners  Output 1.2.3: Annual regional conference (forum) on public-private partnership development for sustainable waste management in the WAEMU region  Output 1.3.1 : Inception workshop, activities planning and M&E preparation  Output 1.3.2 : Technical, financial and M&E reports preparation  Output 1.3.3. Lessons learned from the project disseminated for replication purposes |  | 3,000,000 | 2,106,000 |
| 2. Development of national and local capacities for the promotion of best available techniques and best environmental practices (BAT/BEP) in waste management sectors for reducing emission of UPOPs and mercury | Technical Assistance | Outcome 2.1: Strengthening the Institutional, administrative, legal, technical and regulatory framework for reducing UPOPs and mercury emissions    Outcome 2.2: Institutional, regulatory, technical and funding mobilization capacities of public and private companies reinforced and made operational for sustainable waste management based on BAT/BEP  Outcome 2.3. Stakeholders operating in waste production, collection and treatment are sensitized on pollutants emissions and use best practices in the area | 2.1.1 Reviewed and adjusted regulatory framework for controlling the generation of UPOPs and the handling of mercury containing equipment  Output 2.1.2 Education and training programs for environmental and health authorities on the negative impacts of environmental pollutants and UPOPs and measures to prevent their generation are established to promote the reduction  Output 2 1 3: Education and training programme for environmental and health authorities to promote chemicals safety and reduce or eliminate use and releases of Mercury and POPs pesticides in the sectors covered by the project  Output 2.1.4 Increased capacity of the country for the development of monitoring programs to control the generation of UPOP, POPs and mercury  Output 2.2.1: Strengthened capacity and knowledge of municipalities and other communal and national units in charge of waste management to coordinate the project at national level and communicate the acquired knowledge to all levels  Output 2.2.2: Updated/strengthened regulatory texts and emission standards for sustainable waste management and disposal (including POPs, UPOPs, mercury and other hazardous chemical waste  Output 2.2.3: Organization of the sorting at the source and collection of waste and promotion of BAT and BEP approaches for Hazardous Chemicals and Wastes Management aimed at reducing UPOPs and mercury releases are organized  Output 2.3.1. : Effective information and communication programme meant for the municipalities, the national authorities, households and schools to promote best waste minimization and treatment practices conducive to reducing releases of UPOPs; mercury and other chemical pollutants  Output 2.3.2: A pedagogical ENVIRO-Mobile (itinerant learning approach) operationalized in each partner country  Output 2.3.3. : At least 50 demonstration programs for reducing wastes at source and introducing best available techniques (BAT) and best environmental technologies (BEP) in wates management including POPs and mercury and UPOPs emissions implemented |  | 5,000,000 | 7,240,000 |
| 3. Organizational, technical and financial support to micro-operational enterprises in wasr sector | Investment | Outcome 3.1. Organizational and technical capacities of micro-businesses are strengthened for the promotion of innovative practices in waste sector with due consideration of BAT and BEP  Outcome 3.2. Sustainable financing of waste sector | Output 3.1.1: Installation of 6 unique national "green" windows to support capacity development of the informal sector and the creation of micro companies to manage and recycle waste in each beneficiary country  Output 3.1.2: Technical capacity-building and improvement of the practices of waste sector SMEs  Output 3.1.3: A mechanism for certification and granting of approvals to micro-enterprises with technical and operational capacities for waste collection, treatment and recycling is developed  Output 3.2.1: Assistance for microfinance institutions in promoting financial support mechanisms tailored to EIG and micro-enterprises for equipment financing, waste collection, treatment and recycling  Output 3.2.2. 20-30 micro-loans adapted to the needs of micro-enterprises for waste treatment and recycling operationalized in each country  Output 3.2.3: Sustainable financing mechanism for the waste sector established at national level |  | 3,000,000 | 5,580,000 |
| 4. Support for the construction of efficient solid waste treatment and recycling facilities |  | Outcome 4.1. Waste collection and treatment infrastructure and facilities available in the countries  Outcome 4.2. Waste sorted are recycled and valorised as part of a public-private partnership | Output 4.1.1: At least 200 small waste dumps in neighborhoods closed and rehabilitated in the selected cities  Output 4.1.2: Waste landfill centre, pilot waste treatment and sorting facilities constructed in Niamey  Output 4.1.3: Waste landfill centre, pilot waste treatment and sorting facilities constructed in Thiès  Output 4.1.4: Waste landfill centre, pilot waste treatment and sorting facilities constructed in Bamako  Output 4.1.5: Waste treatment and sorting facilities constructed in Ouagadougou  Output 4.1.6. Waste landfill centre, pilot waste treatment and sorting facilities constructed in Parakou  Output 4.1.7. Extension of waste landfill centre, pilot waste treatment and sorting facilities constructed in Lomé  Output 4.2.1. Support to plastic waste recycling, collection companies  Output 4.2.2. Support to pilot companies for electrical waste and electronic equipment collection  Output 4.2.3. Support to hospitals or pilot companies for medical waste treatment  Output 4.2.4. Support to pilot composting companies for the development of peri-urban agriculture  Output 4.2.5. Valorisation of the biogas produced at the landfill site as electric power to reduce methane contribution to global warming (Parakou, Lomé, Ouagadougou, Bamako and Niamey)  Output 4.2.6. Support of metal recycling units  Output 4.2.7. Support of Paper and cardboard recycling units and glass valorization |  | 4,166,449 | 111,685,551 |
| Subtotal | | | |  | 15,166,449 | 126,611,551 |
| Project Management Cost (PMC) | | | |  | 758,322 | 4,185,678 |
| **Total project costs** | | | |  | **15,924,771** | **130,797,229** |

Please, see annex K-2 for the budget detail.

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

1. **confirmed sources of Co-financing for the project by name and by type**

Please include evidence for co-financing for the project with this form.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sources of Co-financing** | **Name of Co-financier** | **Type of Cofinancing** | **Investment**  **Mobilized** | **Amount ($)** |
|  | Benin |  |  | 2,000,000 |
|  | Burkina Faso |  |  | 2,000,000 |
|  | Mali |  |  | 2,000,000 |
|  | Niger |  |  | 2,000,000 |
|  | Senegal |  |  | 2,000,000 |
|  | Togo |  |  | 2,000,000 |
| GEF Agency and Donor | BOAD, AFD, EU | Loans of BOAD (47%)  Grant of AFD and EU (53%) | Investment Mobilized | 14,000,000 |
|  | BOAD |  |  | 104,797,229 |
|  |  |  |  |  |
| **Total Co-financing** |  |  | | **130,797,229** |

Describe how any “Investment Mobilized” was identified. This investment is mobilized in the framework of the Lome Landfill construction.

Please, see Annex O for the co-financing documents.

**Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **GEF Agency** | **Trust Fund** | **Country**  **Name/Global** | **Focal Area** | **Programming of Funds** | **(in $)** | | |
| **GEF Project Financing** (a) | Agency Fee(b) | **Total**  (c)=a+b |
|  |  | Benin, Burkina Faso, Mali, Niger, Senegal and Togo |  |  | 10,593,437.7 | 953,409 | 11,546,846.7 |
|  |  | Benin, Burkina Faso, Mali, Niger, Senegal and Togo |  |  | 5,331,333.3 | 479,820 | 5,811,153.3 |
| **Total Grant Resources** | | | | | **15,924,771** | **1,433,229** | **17,358,000** |

1. **Does the project include a “non-grant” instrument?**

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund).

1. **Project’s Target Contributions to GEF 7 Core Indicators**

Update the relevant sub-indicator values for this project using the methodologies indicated in the Core Indicator Worksheet provided in Annex F and aggregating them in the table below. Progress in programming against these targets is updated at mid-term evaluation and at terminal evaluation. Achieved targets will be be aggregated and reported any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCCF.

|  |  |  |
| --- | --- | --- |
| **Project Core Indicators** | | **Expected at CEO Endorsement** |
| 1 | **Terrestrial protected areas** created or under improved management for conservation and sustainable use (Hectares) | NA |
| 2 | **Marine protected areas** created or under improved management for conservation and sustainable use (Hectares) | NA |
| 3 | Area of **land restored (**Hectares) | NA |
| 4 | Area of **landscapes under improved practices** (excluding protected areas)(Hectares) | NA |
| 5 | Area of **marine habitat under improved practices** (excluding protected areas) (Hectares) | NA |
|  | Total area under improved management (Hectares) | NA |
| 6 | **Greenhouse Gas Emissions Mitigated** (metric tons of CO2e) | 2,000,000 metric tons |
| 7 | **Number of shared water ecosystems** (fresh or marine) under new or improved cooperative management | NA |
| 8 | Globally over-exploited **marine fisheries** moved to more sustainable levels (metric tons) | NA |
| 9 | **Reduction**, disposal/destruction, phase out, **elimination** and avoidance of **chemicals of global concern** and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced) | 215 metric tons (including 200 metric tons of POPs and 15 metric tons of mercury) |
| 10 | Reduction, avoidance of emissions of **POPs to air** from point and non-point sources (grams of toxic equivalent gTEQ) | 200g-TEQ |
| 11 | Number of **direct beneficiaries disaggregated by gender** as co-benefit of GEF investment | At least 2 millions with 51% of Women |

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided.

1. **Project Taxonomy**

Please update the table below for the taxonomic information provided at PIF stage. Use the GEF Taxonomy Worksheet provided in Annex G to find the most relevant keywords/topics/themes that best describe the project.

|  |  |  |  |
| --- | --- | --- | --- |
| Level 1 | Level 2 | Level 3 | Level 4 |
| Influencing Models |  |  |  |
| Stakeholders |  |  |  |
| Capacity, Knowledge and Research |  |  |  |
| Gender Equality |  |  |  |
| Focal Area/Theme |  |  |  |
| Rio Markers |  |  |  |

**part ii: project justification**

**describe any changes in alignment with the project design with the original pif**

1a. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description); 2) the baseline scenario and any associated baseline projects; 3) the proposed alternative scenario with a brief description of expected outcomes and components of the project; 4) alignment with GEF focal area and/or Impact Program strategies; 5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 6) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 7) innovativeness, sustainability and potential for scaling up.

# Changes in alignment with the original PIF

This section provides additional information and details on the project design, complementing the PIF. The main changes in the project lie in the better identification of the baseline situation in project cities regarding the demography, wastes production data and the socio-economic context of municipal waste management, and a better understanding of hospital wastes management in Bamako, Lomé, Thies, Parakou, Niamey and Ouagadougou. Activities under the PPG also led to a better understanding of how circular economy and adaptive management can be established in the project; the detailed budget and co-financing schemes were elaborated.

The “Areas of intervention of the project and target population” have been slightly amended from what was included in PIF, i.e., that the project will be implemented in 6 WAEMU countries: Benin, Burkina Faso, Mali, Niger, Senegal and Togo, and in each country to target the capital cities and one of the secondary cities of medium importance of each of the recipient countries. Based on the discussions with national partners during the Full-size project preparation, the project will be implemented in the capital city of Burkina Faso, Mali, Niger and Togo, the city of Thiès in Senegal and the city of Parakou in Benin. The changes corresponding to this reduction of areas of intervention are reflected in all sections of the project.

Based on results of field work and discussions with stakeholders during the various national and regional workshops for producing the CEO Endorsement, certain outcomes and outputs have been restructured to make them coherent. Output 4.2.6 "Demonstrative Waste Recycling Projects (Matters and / or Energy)" has been changed to "Support for metal recycling units". The energy component being considered by Output 4.2.5, as planned in the PIF. Support of Paper and cardboard recycling units and glass valorization is organized to output 4.2.7. The activities planned under outcome 4.2 "Waste sorted and recycled as part of a public-private partnership" were extended to all 6 beneficiary cities. Outcome 4.3, relating to monitoring and evaluation and lessons learned, has been moved to component 1 and becomes outcome 1.3: Monitoring, evaluation and impact assessment. After consultation with the municipalities, the construction of the landfills (Outcome 4.1) programmed for two cities, Niamey and Parakou is now extended to five cities including Bamako, Thiès and Lomé. Compactors are programmed for Bamako, Niamey, Parakou landfills.

Regarding quantities of chemicals to be eliminated by the project, the PIF did not differentiate between bulk intentionally used POPs and the emission of UPOPs. Therefore, the GEBs were expressed only as metric Tons of POPs avoided; UPOPs are however the main POPs avoided in the project and they are quantified as g-TEQ.   The in-country activities and desk reviews during the PPG enabled compilation of more precise waste production statistics for the project cities. Since the PIF submission, all 6 project countries revised their UPOPs inventories, generated communications regarding their Nationally Determined Contributions to the Paris agreement and 4 of them revised their NIPs (Benin, Burkina, Senegal and Togo) and provided a better inventory of dioxins and furans emissions. Consequently, the initial prediction of GEBs has been reviewed and appropriately adjusted.

Following on STAP comments there has also been further analysis of biogas handling options in order to reduce reliance on landfill gas flaring, which is a contributor to black carbon. Finally, subsequent to the publication of the new GEF7 programming directions, more considerations were given to the new guidance and to enhance the project focus on circular economy requirements.

Following the comments of the GEF, the amount per micro-project have been revised and increased for impactful projects). The number of beneficiary SMEs has been decreased consequently.

Therefore, the primary project challenges have been reformulated to take into account: (i) the specific requirements of national and local policies and strategies concerning sound waste management and reduction of emissions within an integrated innovative approach.

**1) The global environmental; root causes and barriers that need to be addressed**

There is no change to the PIF content regarding waste management problems and root causes of the weakness in the project countries. However, during the PPG activities, field missions were undertaken, and specific project cities data have been obtained or estimated. In Bamako, a private company (Ozone Mali), and in Thies a semi-public entity (UDE) are the main actors of municipal wastes management. In those cities, memorandum of agreement has been elaborated between the different stakeholders (Municipality, private company, EIGs). These efforts have unfortunately not led to successful environmentally sound waste management due to lack of clear definition of the roles of the actors. None of the countries has developed new waste management strategy despite the weaknesses identified in existing ones; these weaknesses have been highlighted and better understood during consultations and will be taken care of during the project implementation. The project scope and activities have been reviewed in light of more accurate demographic data showing the pressures and impact of urban development on wastes production.

The barriers to sound waste management have been adequately identified in the PIF. One additional barrier has been identified during country visits, that is land availability and ownership issues for landfills. This barrier is integrated in the PIF revision and mitigation measures are offered.

In line with the STAP review, the addition of circular economy principles in waste management are included with emphasis on private-public partnership, strong private sector engagement, promotion of recycling, consumption patterns change, and the formulation or reformulation of enabling policies and regulations.

**Circular economy: an emerging paradigm**

The National workshops in all 6 project cities between the 17 September and 9 October 2018 and the mid-point meeting that gathered country representatives and project partners held on 30-31 October, placed waste recycling at the centre of priorities. These meetings laid the foundation for considering waste management and material recovery and recycling as an economic potential and an opportunity to generate income at several levels along the value chain. This new approach is in accordance with the project objectives identified at PIF stage concerning the socio-economic benefits to be promoted during project implementation.

However, it should be noted that fundamentally, the scope of the circular economy approach is the entire global supply chain. The project’s focus is on the disposal of waste side, not the entire product supply chain. Project partners will be encouraged to integrate wastes reduction approaches to their training and communication packages.

Despite its focus on the disposal of waste side, the project can address issues of global supply chain in the context of Output 2.1.1 Regulatory frameworks for controlling the generation of UPOPs and the handling of mercury containing equipment are in place. Project countries will undertake an evaluation of the efficacy of the laws and policies to manage releases of unintentionally produced POPs. This will be followed by the adoption of legislative and/or administrative measures to manage wastes, including products and articles upon becoming wastes, as described in paragraph (d) of Article 6 of Stockholm Convention and the introduction of requirements for use of Best Available Techniques (BAT) /and/or Best Environmental Practices (BEP).

**2) Baseline scenario**

Field visits in project countries and municipalities, as well as additional literature search, led to a more precise picture of the baseline scenario and better wastes statistics (Ouagadougou 600 000 tons/year; Bamako 600 000 tons/year; Thies: 59 000 tons/year; Lomé: 315 635 tons/year; Niamey: 368 296 metric tons/year; Parakou: 71.540 tons of wastes/year), better identification of stakeholders in project cities and a better understanding of the financial background. During the past 2 years the progress in the operationalisation of the landfill in Lomé provided more insight in the technical challenges to overcome and the capacities needed for project cities.

In project countries, it was noted that despite almost twenty years of regulatory actions there is still a lack of harmonisation of regulatory texts and policies as well as implementation decrees. The initial baseline scenario has not changed, and the following elements were recurrently mentioned as requiring immediate attention: (i) the lack of synergies between institutional actors; (ii) the need to engage all stakeholders according to areas of competence because not all activities are the responsibility of municipalities; (iii) the need to inform, sensitize and educate; (iv) the difficulties in financing waste management; (iv) the need to establish effective taxation and tax collection mechanisms to ensure the sustainability of waste management; (v) the need to promote waste recovery centres and not limit final treatment to simple landfilling.

**UPOPs**

One of the major problems encountered is the lack of reliable and consistent data and statistics in the project cities, which makes it difficult to confirm their particular emission data. However, national emission data have been reviewed in all project countries and these were used as basis for estimating emissions in project cities as a ratio of the population size. The Benin NIP states that between 2002 and 2015, there was an overall increase of 12.28% in the national contribution to releases of Annex C substances. This evolution is due, among other things, to an increase in the quantity of waste, which led to higher emission following incineration (group 1) and uncontrolled combustion (group 6). Indeed, the populations of cities and the surrounding areas produce large quantities of wastes, the management of which is and will continue to be a problem for most municipalities if nothing is done. Considering that all activities that unintentionally generate dioxins and furans are activities designed to meet the needs of populations, any increase in population will lead to an increase in dioxins and furans emissions.

The incineration of biomedical waste (source group 1) is also one of the major sources of POPs. The update of the national inventories revealed that the technologies still in use in hospitals is the same as in 2002, and the types of incinerators used are not efficient.

**E-WASTES**

Very little controlled e-wastes management is implemented in the project countries, although the NIPs identified electrical and electronic equipment (EEEs) as a main source of POPs in household wastes. PBDEs are present in old television sets with no appropriate control for their disposal of waste and the prevailing solid waste management systems do not include recovery of the chemical content. It is reported that dismantling practices of end-of-life vehicles do not comply with the requirements of the Stockholm Convention with regard to POP-PBDEs. There is a lack of awareness among most stakeholders in the EEEs/e-waste management chain about the dangerous nature of CRT cases, and lack of environmentally sound management (selective collection, packaging, recycling and/or disposal) of television boxes and monitors with CRT screens. The common practice is to recover precious metals and abandon other parts that most commonly contain POPs and Mercury. They are sometimes burned or rejected on the ground. The few NGOs / Associations operating in the field are not sufficiently equipped.

In the absence of rigorous local information, it is interesting to consider data from China, where most TV sets in project countries originate from. In the study “ Polybrominated diphenyl ethers in e-waste: level and transfer in a typical e-waste recycling site in Shanghai, Eastern China » ([Li Y](https://www.ncbi.nlm.nih.gov/pubmed/?term=Li%20Y%5BAuthor%5D&cauthor=true&cauthor_uid=24090830) et. Al in [.](https://www.ncbi.nlm.nih.gov/pubmed/24090830) 2014 Jun;34(6):1059-65), the results showed that PBDEs were detected in the majority of e-waste, and the concentrations of PBDEs ranged from not detected to 175 g/kg, with a mean value of 10.8 g/kg. PBDEs were found in TVs made in China after 1990. The mean concentrations of PBDEs in e-waste made in Korea, Japan, Singapore and China were 1.84 g/kg, 20.5 g/kg, 0.91 g/kg, 4.48 g/kg, respectively.

**POPs pesticides**

All project countries but one updated their Stockholm Convention National Implementation Plans (NIPs) in the past 2 years with detailed plans for updating POPs regulatory framework and controlling POPs in the country. Officially no POP pesticides are imported, but, given the porosity of borders and the weakness in the application of regulatory texts on pesticides, it cannot be excluded that POP pesticides and other prohibited products continue to enter the countries for illegal use. Although these chemicals are mainly used in agriculture and do not constitute a significant issue in domestic wastes, it has been mentioned that DDT may still be present in mosquito coils in use in project countries. The quantitative evaluation of such use is difficult, and the project will use communication and education programmes to address the issue. The use of lindane in pharmaceutical product for the second-line treatment of lice and scabies in humans is another source of POPs in domestic environment; stocks exist in many of the project countries and the project will address this.

Empty packaging of POP pesticides, and other chemicals, are generally reused to store liquid foods, such as milk, honey, oil and drinking water. As such, they represent a permanent source of poisoning for rural populations who are the main pesticides users. There is virtually no awareness of the impact of empty pesticide packaging on human and animal health and the environment. They are considered useful objects and are promptly used, particularly by women and children, a practice that carries a high risk of exposure and intoxication for these sensitive and disadvantaged groups.

The management of empty pesticide packaging is a problem for all countries and practices differ from one country to another. Empty packaging is often mixed with domestic waste or dispose of by burning, burying or dumping it in the environment. In some places, there are collection channels for sale to private operators in the informal sector who recycle them into uncontrolled finished products. They are also reused to store liquid foods, such as milk, honey, oil and drinking water. As the project will reach to the rural communities around project cities, it will target awareness raising on the possibility of finding POPs pesticides in peri-urban agriculture and will address the management of empty packaging. The project will also establish coordination and bridging with current ECOWAS project on empty packaging (Regional GCP/INT/147/GFF project for capacity building in pesticide and pest management in the nine (9) CILSS Member States (Burkina Faso, Cape Verde, Chad, Gambia, Guinea Bissau, Mali, Mauritania, Niger and Senegal).

**BIOMEDICAL WASTE**

Biomedical waste management is still a major concern in the six (06) beneficiary cities. Such waste produced in health centres can be classified into five (05) categories:

1. Sharp waste: needles, broken glass, blister blades, scalpels;
2. Infectious waste: tampons, compresses, human tissues, blood, etc.
3. Anatomical waste: placentae, foetus, amputated limbs;
4. Chemical and pharmaceutical waste: medicines and other products of disinfection;
5. Waste treated as household waste: packaging, paper, kitchen waste.

In hospitals, selective sorting of infectious waste is infrequent. The number of garbage cans is still insufficient for the promotion of sorting at source, specific sites are not used for intermediate storage or for final storage and staff engaged in collection and evacuation tasks generally consists of non-specialists and untrained agents contracted by the structures. Hospital wastes transportation is carried out by general collectors or the local community. Some of this waste is found in small dumpsites and scavenger families who make a living of recycling materials from open dumpsites are at great risk especially from sharps waste. The World Health Organization (WHO) estimates that unsterilized syringes cause between 8 to 16 million cases of hepatitis B, 2.3 to 4.7 million cases of hepatitis C, and 80,000 to 160,000 cases of HIV every year. While many of these cases are due to inadequate sterilization and reuse of syringes, anecdotal data indicate that numerous needle-stick injuries that could spread bloodborne pathogens occur among waste workers and children due to improper disposal of waste.

Inside sanitary structures, partial incineration, burning, burial etc. are common practice. Where medical waste incinerators are used, they are often of low operating temperatures (~200°C), resulting in excess generation of toxic gases like HCl, CO, co organics, dioxins and furans. In this regard, Stockholm Convention National Implementation Plans of most project countries concluded that incineration of biomedical waste (source group 1) is one of the major sources of POPs releases and emission mitigation should be sought.

**METAL WASTE**

Scrap metal is most often made of iron debris, cast iron and steel. This waste is found in various equipment and domestic installations, cars, motorcycles, bicycles or building site. Part of this scrap is recovered in bins and dumps by young people and women. This collected waste is sold to individuals who export it to Asian countries for recycling.

Some recycling initiatives exist on site but struggling to meet the challenges for lack of technical and financial resources.

**PAPER AND CARDBOARD WASTE**

Paper and cardboard waste is also abundant in waste produced by beneficiary cities. The proportion of this category in the composition of municipal waste is for example 6.2% for the city of Ouagadougou, 5% for the city of Lomé and 3.5% for the city of Bamako. Paper and cardboard include: cardboard packaging, newspapers and magazines, milk and fruit juice bricks; overpacks of yogurt packs, cereal boxes; white envelopes, office papers, notebooks, etc. The common practice encountered in the management of this waste is burning. This causes emissions of CO2 and pollutants in nature.

Some recycling initiatives for certain types of waste exist and need to be strengthened in order to recycle a significant portion of this waste and reduce emissions from the burning of paper and cardboard.

**Finances**

The current financing of waste management is marked by a diversity of mechanisms and practices. Fees and taxes collected at the state level, levies by the national electricity company, as in Senegal, state’s own funds as in Niger. Transparency and adequate management of the proceeds is however lacking in many cases. All project’s cities claim this financing is not enough as it does not cover the cost of waste management, which is rapidly increasing. This is evidenced in the low collection rate in project countries (between 30-50%).

Households have demonstrated willingness to pay for their waste collection at the neighbourhood level, to both formal and informal enterprises (1000 to 2000CFA per month or 100CFA per pick up). They are however reluctant toward taxation that does not provide transparency on the utilization of its proceed. The project will direct efforts in establishing a transparent taxation system with accountability to ensure the sustainability of sound municipal waste management in project cities, and provision will be made to replicate such system in other similar cities.

The following information and issues related to financial aspects of sustainable waste management came up in almost all 6 project countries.

1. Financing can’t be considered on its own, without an integrated framework and interventions. For example, financing waste collection SMEs without the existence of adequate zoning won’t work.
2. Waste sorting must be done as early as possible in the value chain, given the diverse composition that reaches the landfill stage. Sorting and recycling becomes a challenge at landfill stage, according to landfill staff.
3. Households are willing to pay, and they do, but their contributions is not sufficient to manage all the chain of waste and they ask for transparency on the use of the funds collected.
4. Additional predictable funding sources must be secured in addition to the fees collected from households to make municipal waste management sustainable.
5. Management of medical waste need to be planed carefully with due consideration to the weaknesses recorded in the sector. Autoclave financing in past and recent projects has not been successful.
6. It is necessary to plan landfill constructions ahead of time given that landfills life span is of 30 years.
7. Financing of one-off measures as plastic bags buy back does not work in the long term.
8. A number of national institutions in the project’s countries have already deployed initiatives aiming at addressing barriers to the growth and vitality of SMEs. However, there is limited awareness and coordination of these existing schemes.
9. Informal waste collection and recycling operators might resist formalization because of a concern over taxation.

**SPECIFIC PROJECT CITIES INFORMATION**

**NIAMEY**

**Geography and demography**

The city of Niamey, and its districts cover 255 km2 (between 13°20' and 13°35' North latitude and 2°00' and 2°15' East longitude) and is divided into five (5) districts. The Mayor, President of the Council of the City of Niamey is assisted in his responsibilities by a municipal council which is the decision-making and validation body for the City's activities. This city experienced significant population growth. From 57,000 inhabitants in 1967, the population increased to 924,056 inhabitants in 2007 and then estimated at 1,277,000 inhabitants in 2013. This demographic growth is reflected, among other things, in a proportional increase in waste production.

**Current waste management situation**

The production of household solid waste for 2016 is estimated at 368,296 tonnes and will reach 412,913 tonnes in 2020. According to a study, the inhabitants of the City produce 0.65 to 0.75 kg of waste per day. The current subscription rate for any pre-collection service is just over 40%. The characterization and analyses show that the waste from the city of Niamey is mainly composed of sand and fine materials (54%), organic materials (31%) and plastic (5%). These proportions are the fundamental difficulties as waste composition is very important in the choice of waste disposal technology. Waste sorting practices are not carried out in households but only at landfills by individuals who transform plastic waste into granules for export to Nigeria. Some collect rags, scrap metal for marketing purposes as well.

The municipality of Niamey is responsible for the organisation and control of solid waste collection, the provision and maintenance of equipment to the municipal services and the management of final landfills.. It also intervenes in the event of major problems, for example in the elimination of illegal landfills. Finally, it must raise public awareness of the need to deposit waste in containers managed by municipalities.

There are many private and community pre-collectors with tricycles and they are generally poorly organised. The structures work mainly in the districts considered the most profitable, leaving large sections of the city without coverage. This has encouraged the emergence of informal pre-collection structures that operate with human-drawn carts in low-income neighbourhoods in return for financial compensation based on the volume of waste collected, which is dumped at night into open gutters, empty spaces or even the cemetery. Hence the proliferation of wild dumpsites. This practice is also linked to the land problem, which hinders the installation of transfer centres.

As far as collection is concerned, the spatial coverage is insufficient due to the lack of equipment. There are only five (5) compactors for the entire City, which operate without a duly signed approval from the City Hall.

The City does not have a technical landfill center. A former quarry serves as a receptacle for the City's waste. The recovery channels for organic and non-organic waste exist but are poorly or not structured and could benefit effectively from organisational support. A single development structure, led by a woman, operates in the city thanks to the support of partners, with the noble objective of protecting the environment, creating jobs and contributing to food security. In this perspective, efforts are being made to popularize compost among agricultural producers and to train young people and women. Thus, in 2015-2016, two hundred (200) women organized in groups were trained thanks to Spanish cooperation. The difficulties are related to water supply, transport to cover the country's demand and the cost of the product set at 3500 FCFA per bag which seems high for an average producer. This cost could be reduced to CFAF 2500 if a government subsidy was provided.

As for biomedical waste, the need for decontamination equipment is obvious for health centres. A single centralized incinerator at Lamordé Hospital, obtained thanks to AFD financing, covers the four health centres in Niamey. Insufficient compared to the estimated quantity of biomedical waste of 5 m3 per month. Sorting is carried out at source, but sharp objects, syringes and serum bottles are still stored in inappropriate conditions since the termination of the contract with a collection company. Similarly, many dental amalgam stocks exist without disposal of waste solutions.

Since the drafting of the PIF, Niger undertook several activities in the field of emissions including the updating of Stockholm Convention NIP, the UPOPs inventory and the national climate change communication. The global emission of dioxins and furans is 162.9 TEQ in 2015 in air with a projection in 2040 of 399.17 TEQ. Uncontrolled combustion processes (wildfires and landfill fires) alone account for 134.5 TEQ/year. There is no data on the source for waste incineration. (See Niger NIP, Pages 50 and 51, Provisional Version, November 2017). It is stated that if the current trend of population growth continues, the Nigerian population will double in 18 years; that is, it will reach more than 34 million inhabitants in 2030.

On the basis of data provided by customs, the incoming flow of EEE, all categories combined, was 2,871 tonnes in 2017. The quantities of e-wastes have increased from 8725 tonnes in 2012 to 10,319 tonnes in 2017. If this trend continues, by 2027 the e-wastes generated will reach 13,505 tons. The document “***Rapport Technique de Diagnostic National de la gestion des DEEE au Niger »*** placed a particular emphasis on the city of Niamey, which not only concentrates the largest number of users of the EEEs but also the headquarters of almost all the structures involved in the field. The vast majority of e-wastes ends up in landfills where it is incinerated or simply abandoned.

There are only uncontrolled landfills in Niger, the process of creating a controlled landfill is underway. Hazardous waste management structures are still non-existent. Nor is there a site developed for the landfill of ultimate e-wastes. Currently e-wastes disposal in Niger is mainly through incineration and landfilling that have the greatest impact on populations and their environment. No studies on the environmental and health impacts of the impact of e-wastes have yet been carried out or the estimation of POPs and mercury in these wastes. (Cf Technical Report of National Diagnostics From e-waste Management Final Version, March 2018, Pp 8 To 9 And 29 To 40).

Overall, the difficulties are linked:

* Insufficient financial, human and logistical resources;
* The fragmentation of land reserves, which makes it difficult to have space for grouping points;
* The lack of application of the texts, in particular the hygiene code and the decision prohibiting the burning of waste in the open air;
* Insufficient awareness.

Capacity building and logistic needs expressed during the visits

* support for waste recovery
* support for the construction of a TLC (Technical landfill center), intermediate landfills and recovery centers;
* support for the acquisition of efficient incinerators and not waste sterilisers such as hydroclavs or autoclavs already acquired at great expense, but never functional;
* support for the establishment efficient financing mechanisms, in particular with input from private sector;
* Support for the implementation of an awareness and education programme;
* creation of a coordination framework to guide activities;
* State subsidy to allow access to compost for small agricultural producers.
* support for the spatial organization of pre-collection NGOs by updating the studies carried out for this purpose;

**Waste management legislation**

Wastes management is governed by several legislative text, although much of it only provides partial coverage.

* The Constitution of 25 November 2010: Article 35 stipulates that: "Everyone has the right to a healthy environment. The State has an obligation to protect the environment for the benefit of present and future generations;
* Law 66-033 of 24 May 1966 on dangerous, unhealthy or inconvenient establishments, supplemented by the Ordinance;
* Ordinance No. 93-13 of 2 March 1993 establishing a code of public health in Niger, article 4 of which stipulates that it is prohibited for any person to produce or hold waste under conditions likely to cause harmful effects on the soil, flora and fauna, damage landscapes, pollute the air or water, generate noise and odours and, in general, to undermine the human health and the environment;
* Framework Law No. 98-56 of 29 December 1998 on environmental management based on Ordinance 93-13 of 2 March 1993 on the public health code;
* Ordinance No. 2010-09 of 1 April 2010 on the Water Code prohibits, inter alia, the dumping of garbage, garbage and litter, etc. The Ordinance also prohibits spills, deposits and landfills of waste that may directly or indirectly affect groundwater quality;
* Order No. 140/MSP/LCE/DGSP/DS/DH of 27 September 2004 on standards for the discharge of waste into the natural environment. This decree underlines in particular that solid waste must be deposited in landfills and places authorised by the community in the territory where it is produced and defines the conditions for its disposal.

International Agreements signed

* the Stockholm Convention on Persistent Organic Pollutants (POPs), signed in October 2001 and ratified in February 2005;
* the Rotterdam Convention on the Prior Informed Consent Procedure (PIC) for Certain Hazardous Chemicals and Pesticides in International Trade, ratified by Niger in February 2006;
* the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, adopted in 1989 and ratified by Niger in 1998;
* the United Nations Framework Convention on Climate Change, ratified by Niger in 1995
* the Minamata Convention on Mercury, ratified on 9 June 2017;
* The Bamako Convention (January 1991).

There are no specific regulations for the management of dioxins and furans, PFOS and related products and POP-PBDEs. However, Act No. 2015-35 of 26 May 2015 on plant protection and its implementing decree No. 2016-303/PRN/MAG/EL/DGPV of 29 June 2016, as well as Order No. 177/MAG/EL/DGPV of 20 October 2016, established the list of pesticides prohibited in Niger and banned by the Stockholm Convention: Hexachlorobenzene (HCB), Mirex, Chlordane, DDT, Endrin, Toxaphene, Heptachlor, Aldrin, Dieldrin, Alpha hexachlorocyclohexane, Beta hexachlorocyclohexane, chlordecone and Lindane. The Hygiene Code in force since 1999 does not include an implementing decree, and it is necessary to harmonize the WAEMU Directives with national regulations. The policies developed at national level are not concerted and the regulatory texts do not have implementing decrees.

Institutional waste management structures

* The Ministry of Environment and Sustainable Development (MEDD) is responsible for the design, development, implementation, monitoring and evaluation of national policy on the environment and sustainable development, including environmental management, specifically the physical aspects of combating desertification, combating pollution, improving people's living conditions and assessing environmental impacts, in accordance with guidelines defined by the Government.
* The Ministry of Public Health is the institution responsible for implementing national policies on public hygiene, food hygiene and health education.
* The Municipality is a central player. It launched the Niamey Nyala" programme, with the mission to reunite and rebalance the development of the city around the Niger River by 2020, make it more welcoming and pleasant to live in, increase its accessibility to multimodal transport and promote its influence as a political and cultural capital and its function as a regional economic hub. To this end, particular attention is paid to the sanitation that is prioritized, in particular through activities to support the management of solid household waste. The main areas of intervention in sanitation are solid waste management (collection, treatment, recovery, storage), updating of the sanitation master plan; rehabilitation of water drainage networks; extension of wastewater treatment infrastructures.
* The Ministry of the Interior, Public Security, Decentralization, Customary and Religious Affairs which through the General Directorate of Territorial Administration and Local Authorities, effectively supervises the territorial authorities in charge of implementing texts relating to the health and sanitation of municipalities in accordance with the laws and regulations governing the status of cities in Niger and the transfer of competence to regions, departments and municipalities. Municipalities and cities therefore enjoy legal personality and financial autonomy. They are equipped with communal environmental, road and sanitation services that are responsible for waste management through:
  + the construction and maintenance of equipment for the treatment of household waste and waste water;
  + the collection and disposal of household waste;
  + monitoring of household waste collection by NGOs, associations and private operators.
* The Ministry of Urban Planning and Housing, through its Sanitation Department, is responsible, among other things, to:
  + Develop and implement policies, programmes and projects related to collective and individual sanitation and urban infrastructure;
  + Elaborate or have elaborated master plans for sanitation;
  + verify the compliance of any sanitation project (stormwater, wastewater, blackwater and household waste disposal) with the options of the master sanitation plan;
  + Support local authorities in the development of master plans for sanitation;
  + Carry out awareness-raising activities aimed at populations, communities, institutions, etc.

The private sector, associations, NGOs and the informal sector are involved in the field to support municipalities and populations in the collection, disposal and recycling of solid waste.

**BAMAKO**

**Geography and population**

Bamako is the capital city of Mali and has a population estimated at nearly 4 million inhabitants with a growth rate of 5.4%. In 2006, it was estimated to be the fastest-growing city in Africa and the sixth-fastest in the world. Located inland on 7°59' West longitude and 24°40' North latitude, the District of Bamako consists of two distinct parts: to the north, the city extends between the Niger River and Mount Manding in an alluvial plain 15 kilometres long and 7,000 hectares in size, which narrows at both the east and west ends; in the South, the right bank occupies a 12,000 hectare site, from Sénou Airport (opened in 1974) and the Tienkoulou hills, to the Niger River. The city has [[[](https://en.wikipedia.org/wiki/Bamako#cite_note-6)280 km2 on two banks of the Niger River; 6 municipalities and 66 districts. The solid waste production is 1700 tons/day (600,000 tons/year) and only 30% of the produced waste is disposed of.

**Waste Management situation**

Bamako's household waste mainly contains: 51% dust; 17.5% plant debris; 17.5% kitchen waste; 5% plastics (48% in volume); 4% paper (7% in volume) and a fraction of ferrous metal. Waste incineration is carried out by 9% of households, mainly respondents living in peripheral municipalities.

Municipal solid waste is ranked as the highest priority waste stream requiring improvement in Mali. Despite public awareness of the environmental risks of of poor waste management, there are currently no specific regulations addressing the problem. Some waste management policies and regulations exist in the country. However, not all waste streams are adequately addressed, such as e-waste, while many waste streams lack plans for policy implementation. Uncontrolled waste burning, which is a common practice, is one of the practices that contributes to deteriorating air quality.

In Mali, mercury releases to the atmosphere from all identified sources were estimated at 24,391.1 kg Hg/year. This amount of mercury is quite significant and given the mobility of the metal, risks of degradation of the ambient atmosphere are unavoidable. The amount of mercury released into water in Mali was estimated at 18,523.5 kg Hg/year, with a substantial contribution from informal deposits of general waste (11,695 kg Hg/year). At these deposits, the leachate, loaded with Hg, can easily percolate to surface and groundwater.

A major problem in the field of waste management is the lack of institutional coherence: state services continue to play a role in urban sanitation, there has been a transfer of competence to municipalities, but the latter are blocked by legislation and the transfer of competence has taken place without transfer of resources. The economic interest groups (EIGs) that operate in the field of pre-collection of waste have existed in Bamako since 1999 and number 179. They employ about 1,200 people and dispose of waste from about 30% of the population in Bamako. In 2015, a privatisation of waste management saw the arrival of OZONE (a private Moroccan company), which tried to integrate the majority of the staff of these EIGs; lack of agreement between parties les many of the EIGs to cease their activity..

As well, the absence of real transit depots, the unacceptable behaviour of a large part of the population towards the management of their own waste and the lack of commitment, all stakeholders have contributed to making the implementation of actions aimed at good solid waste management problematic or even impossible.

Only one formal landfill center exists for the district, in the area of Noumoubougou. Although not adequately equipped, the site has all the assets required to create an acceptable landfill if it is operated according to the best practices. The landfill could receive, from Year 1 to Year 10, nearly 1,600,000 m3 of waste and cover soil at a rate of more than 550 m3 per day of waste in Year 1 and nearly 950 m3 per day in Year 10. However, the site is not yet operational, and it has been the scenery of conflicts between local communities and the wastes collectors. In the rest of the communes, there is a lack of transit landfills and a lack of land to establish them.

Recovery and recycling activities are mainly of an informal nature in Bamako. The vast majority of households practice some form of recovery within the concession itself. It is therefore difficult to obtain data on the extent of household recovery and recycling activities given their informal nature. The main products reused by the households that indicated that they recover are aluminium (47%), plastic (30%), glass (23%) and to a lesser extent paper and cardboard (6%).

The presence of plastic waste in household waste poses major problems for the valorisation of the latter into organic manure. In Bamako, plastic represents 30% of the products reused in households that practice recovery. Households selling recoverable or recyclable products mainly find buyers for plastic (41%) and glass (61%). However, in Mali there is no specific plastic waste management plan despite the fact that the damage caused by plastic waste is the subject of several speeches.

A study commissioned by the Government and funded by the World Bank on the Solid Waste Management Strategy of the city of Bamako exists. The report was adopted by the Council of Ministers. However, the technical and financial proposals and the action plan it recommends have not been significantly implemented.

Biomedical wastes pose another major problem. Mali has nine (09) hospitals (3 national, 6 regional); fifty-eight (58) reference health centres (CSRéf), 744 functional CSCom and 292 private health structures. These establishments generate biomedical waste estimated at a minimum of 585 tonnes per year, or 1603 kg/day (2003). Waste production at the level of veterinary structures is not known and deserves to be explored. The same is true for other health structures, including:

* the National Centre for Disease Control Support;
* the Institute of Tropical Ophthalmology of Africa (IOTA);
* the National Centre for Odonto Stomatology (CNOS);
* the National Blood Transfusion Centre (CNTS);
* the Central Veterinary Laboratory (LCV);
* the National Institute of Public Health Research (INRSP);
* the National Health Laboratory;
* and other private laboratories

Thermal treatment and burial of ashes are implemented for the vast majority of biomedical waste. However, for religious and cultural reasons, some human organs (placentas, amputated organs) are disinfected and buried. The heat treatment is carried out using MontFort incinerators which have certain deficiencies related in particular to design.

**Waste management legislation and institutions**

Solid waste management is governed by international conventions, the Constitution and laws and regulations.

**International Conventions**

Mali ratified two conventions on waste management:

* The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, adopted in Basel on 22 March 1989. It was ratified by Ordinance No. 00-035/P-RM of 14 September 2000. The accession was made by Decree No. 00-443/P-RM of 15 September 2000.
* The Bamako Convention on a Regime for the Prohibition of the Import of Hazardous Wastes and the Control of Their Transboundary Movement (Bamako, 30 January 1991). The purpose of this convention is to create a mandatory framework to strictly regulate the movement of hazardous waste to and within Africa. It was ratified by Mali on 21 February 1996.
* The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade on 05 June 2003.
* The Stockholm Convention on Persistent organic Pollutants on 23 May 2001 and ratified the convention on 05 September 2003

**Legislative framework**

* Law No. 1-394/P-RM of 6 September 2001, outlines the procedures for solid waste management, which is the most relevant and which is closer to its concerns does not cover electronic and computer waste, but rather of hazardous waste for which users are required to report them without indicating how and through what agency such reporting should be done. It recommends preparing texts on electronic, electrical and household waste management, because as at now no regulations exist for this type of waste;
* Law N ° 01-020 dated May 30, 2001 appears not to take into account domestic liquid waste and electrical and electronic equipment waste management. In addition to this failure, plastic waste is not specifically handled. They are mixed with municipal solid waste and are evacuated to the same place and under the same conditions of handling and transportation;
* Act No. 01-020 May 30, 2001, besides not taking into account electronic and computer equipment waste management, plastic waste is not subject to specific management. They are mixed with municipal solid waste and are evacuated to the same place and under the same conditions of handling and transportation;
* Act No. 01-020 of 30 May 2001 on pollution and nuisance. The Act allows for pre-collection of solid waste in local communities;
* Act No. 91-047 23 February 1991 on environmental protection and life quality.
* Decree No. 01-394/P-RM of 6 September 2001 setting out the procedures for solid waste management
* Decree No. 01-395/P-RM of 6 September 2001 setting out the procedures for waste water and farmland management;
* Decree No. 01-396/P-RM of 6 September 2001 setting out the procedures for noise pollution management;
* Decree No. 01-397/P-RM of 6 September 2001 setting out procedures for air pollutant management;
* Decree No. 98-293/P-RM of 8 September 1998 setting out the organizational and operational procedures of the national directorate of sanitation and control of pollution and nuisances;
* Decree No. 95-325/P-RM of 14 September 1995 setting out detailed rules for the enforcement of the law on environmental protection and living environment;
* Decree No. 07-135/P-RM of 16 April 2007 in Article 1 lists hazardous waste in two parts: 19 waste streams and 26 waste components.
* Decree No. 03-594/P-RM of 31 December 2003 establishing the environmental impact assessment procedure; the circular letter that has been regulating stakeholders in the pre-collection sector since 1993.

**Constitution**

The preamble to the Constitution states that: "the sovereign people undertake to ensure the improvement of the quality of life, the protection of the environment and the cultural heritage" (i) Article 15 states that: "Everyone has the right to a healthy environment. The protection, defence of the environment and the promotion of the quality of life are duties for all and for the State".

**Institutional framework and related problems**

The public organisation with primary responsibility for the environment in Mali is the Ministry of the Environment and Sanitation. However, several other ministries and agencies have also important environmental functions, such as the Ministry of Agriculture, the Ministry of Mines, Energy and Water, and the Ministry of Regional Administration and Local Government. Lack of inter-Ministerial cooperation has made very difficult the implementation of the cross-cutting programmes, such as the National Environment Action Plan (NEAP) developed in tandem with the PNPE.

The “Direction des Services Urbains de Voirie et d'Assainissement” (DSUVA) is responsible for waste disposal from transit centers, industries and also from certain private structures. The annual volume of waste produced in Bamako in 2006 was estimated by the DSUVA at 817,600 m3 (2240 m3/day) or about 1.6 litres/person/day. As the city lacks controlled, compacted landfill, the final disposal is often to excavations such as the Doumanzana landfill and other landfill areas such as quarries and fields. The collection segment is experiencing a deficit due to the fact that the DSUVA has seen its waste management capacities and resources decline gradually. The situation has deteriorated further over the past five years. As a result, most of the vehicles in its fleet used for waste collection and disposal are in a state of decay. The DSUVA no longer has the material resources necessary to provide the services entrusted to it. Moreover, since no taxes or fees directly related to waste management are collected by the District, the DSUVA cannot count on any budgetary stability to meet its needs. In view of this situation of the DSUVA, EIGs with motorised means are obliged to transport the collected waste out of the city.

To solve solid waste management problems, especially before wintering, the State and municipalities are now using the private sector to clean up transit depots located in strategic areas of the city.

**Stakeholders in waste management**

In the current context of decentralization in Mali, sanitation is one of the responsibilities transferred to local authorities. The municipal council is then the first instance for sanitation problems through the Development, Sanitation and Security Commission and the Municipal Office. The Development, sanitation and security commission of the Communal Council determines the consolidation activities and investments to be consideredin the budget forecast of the municipal development plan. It submits an activity report on sanitation to the municipal council. Sanitation issues are the responsibility of the 3rd deputy who reports to the Municipal Office and the Sanitation and Security Development Commission of the Municipal Council.

Several technical services are established as follows:

Service de l'assainissement et du Contrôle des Pollutions et des Nuisances (SACPN).

The Regional Directorate of Sanitation and Pollution and Nuisance Control (DRACPN) is the department in charge of sanitation at the District level. It is responsible for the design and implementation of the National Sanitation Policy at the Bamako District level. The missions of the DRACPN are carried out at the Commune level by the Service de l'Assainissement et du Contrôle des Pollutions et des Nuisances (SACPN) as a decentralized State service. The SACPN is domiciled in the Commune. He participates in the municipality's monthly health days.

The Hygiene Brigade (BH) The Regional Health Directorate;

Regional Service in charge of the implementation of the national health and public hygiene policy. It is represented at the Commune level by the CSRéf, which has a Hygiene Brigade. The BH is responsible for the application of hygiene standards in the municipality. She participates in the municipality's monthly health days.

The National Police;

It plays a role in supporting the technical services in charge of sanitation to ensure compliance with the implementation of regulations and legislation.

The Urban Environmental Protection Brigade (BUPE);

Technical service of the District represented at the level of the Municipality. It is responsible for the implementation of laws and regulations relating to the protection of the environment such as those relating to the divagation of animals, the uncontrolled occupation of public spaces, the uncontrolled disposal of waste, etc. The BUPE actively participates in the monthly health days. She participates in the municipality's monthly health days.

The Direction des Services Urbains de Voirie et Assainissement (DSUVA);

DSUVA is the only service that provides secondary collection at the Bamako District level. Among other activities, it is responsible for removing waste from transit depots and transferring it to the "final landfill" or waste disposal site. DSUVA is a service of the Bamako District that operates in the six communes of Bamako. At the level of each municipality, it has a delegate who is responsible for relations between the Municipality and the DSUVA. It delegates actively participates in the municipality's monthly health days.

Basic Community Organization (CBO)/Civil Society;

Households

They are a very important group in the current waste management system. They ensure the production of waste, pre-collection and first packaging of household waste. This is the main source of funding for EIGs collecting waste. Anarchic deposits are mainly supplied by households that have not joined the EIG service. There are several other producers of waste such as markets, hotels, etc. They can all be assimilated to households in terms of the roles they play in waste generation and relationships with other sanitation stakeholders.

Economic Interest Groups (EIGs)

EIGs are mainly involved in primary collection with the authorization of the Municipality, which is fully responsible for this stage of sanitation as part of decentralization. The EIGs ensure primary collection at the level of the households that pay them the collection fees, the amount of which varies from 750 to 2000 CFA francs per month. EIGs supply transit depots.

The Health Committees (HC)

These are population organizations responsible for promoting sanitation activities and environmental protection in the Commune through the organization, mobilization and sensitization of the population. In Commune VI, there is a sanitation committee in each neighbourhood. The Neighbourhood Health Committees are grouped together in a Communal Coordination. CSs are very active in organizing safety days. They are members of the COGEVAD and maintain good collaborative relations with the Municipality, which created them before formalizing their existence.

The Collective of Women's Associations and NGOs (CAFO)

Women's organization that works for the advancement of women. Sanitation is one of CAFO's missions, which is represented at the national, regional and municipal levels.

National Youth Council (CNJ) Communal

This national youth organisation has its branches at regional and communal level. The CNJ is responsible for the promotion of young people but also for their organization, mobilization and participation in activities of public interest such as sanitation.

The partners

The Municipality maintains partnership relations with foreign development services, associations, NGOs and study firms such as: DED, CEK Kala Saba and the NGO Clean Up the Earth. These partners contribute to sanitation through their technical or financial support and capacity building.

**LOME**

**Geography and demography**

Located on the [Gulf of Guinea](https://en.wikipedia.org/wiki/Gulf_of_Guinea), Lomé is the [capital](https://en.wikipedia.org/wiki/Capital_(political)) and largest city of [Togo](https://en.wikipedia.org/wiki/Togo) extends between 6.1372 Latitude, 1.2125 Longitude; and 6 ° 8 '14 "North, 1 ° 12' 45" East. Lomé’s area is 90 km2 with 1,709,000 inhabitants.  This city is an administrative and industrial center, which includes an oil refinery, and one of the biggest ports in West Africa.

**Current waste management situation**

Lomé has a newly build landfill that is dimensioned to 250,000 tons of waste per year. The storage volume of this rack is 1,300,000 tones. However, the city's waste production is estimated today at 315 635 tons per year. Based on this annual volume as well as population growth (3.36%) and the rate of urbanization (5% per year) this trap will be completely filled by 2021, on this based, it is necessary to invest in the construction of new rack. In addition, there is a waste sorting and recovery centre, a plastic waste recycling centre with a capacity of 432 tons in 2017 and an electrical and electronic waste recycling centre that is facing storage problems. With regard to informal waste disposal, thirty percent (30%) of the waste generated in a year is left in the vicinity of homes and burned uncontrolled. In the UPOPs inventory, the prevailing precautionary principle, the major assumption is used, and it is assumed that 52.3% of the waste arriving at the landfill burns. The quantities of waste burned around homes in an uncontrolled manner amounted to 175,133 tons in 2015.

While the institutional and regulatory framework for waste management exist, the application is still lagging behind. 39.8% of households dispose of their waste in the wild. There is no sorting at source for municipal and bio-medical wastes. In Togo, the incineration of biomedical waste (source group 1) is a major source whose emissions must be mitigated.

In Togo, the total release of UPOPs in 2012 is 161.66 g-TEQ/year. The release into the air represents 89.81% ie 145.19 g-TEQ/year. The sources, namely waste incineration (20.8g g-TEQ/year), open burning (122.6g g-TEQ/year) and to a lesser extent disposal of waste (1.79g g-TEQ/year), are the main releases to air. The source group, open burning activities, is linked to the evolution of national statistics (demography, waste production, etc.) and will follow demography if effective control measures (BAT/BEP) are not in place. However, the action plan of the initial NIP was practically not implemented, and this resulted in a jump of about 14% in releases between 2002 and 2012. This group alone accounts for 87.36% of releases (See NIP Report, Togo, April 2017, PP 41 to 44).

According to the Health Information Division of the General Directorate of Studies and Planning of the Ministry of Health, medical/biomedical waste produced in Togo is either incinerated or burned. The average annual production of medical/biomedical waste is 365 tonnes (from 2013 to 2015).

As to E-wastes in Lomé, where the population is estimated at 1,709,000 inhabitants, only the NGO, Social Action for Integrated Development, is involved in the collection of e-waste. 420 tonnes were collected between 2012 and 2017 and the collected e-wastes are dismantled, packaged and transported to Europe in accordance with the provisions of the Basel Convention, with the support of the Belgian NGOs UMICORE and World Loop. In 2017, 12 tons were transported to recycling centres in Europe and a total of 40 tons will be transported in 2018.

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| IMG_5585 | IMG_5556 | IMG_5574 |
| Photo 1: Cathode ray tube collect by NGO ASDI | Photo 2: Recovery of precious metals | Photo 3: Crushed tubes and screens packaged for export |

Plastic waste is collected by women and young people who network with the NGO and SMEs. The NGO STADD, for example has a platform for sorting and grinding plastic waste. Plastic waste is sorted by type and color. The sorting is done by the staff made up mostly of women. The sorted waste is treated (washed) before being crushed by a grinder installed on the site. The crushed products are dried and packaged in bags before being exported to partners in Ghana who use them as raw material for the remanufacturing of plastic objects or other crushed plastic products. The project will provide technical and financial support for the recovery of plastic pellets in the country. The bins distribution program will be supported by this type of initiative. Other industries such as White Way use recycled plastic waste for the production of large water tanks (Polytanks).

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| IMG_20181121_123644_9 | IMG_5614 | IMG_5628 |
| Photo 4: Plastic waste stored on site | Photo 5: Grinding products sorted by color and dried | Photo 6: Broyat packed in bags |

In the Composting sector, NGO such as ENPRO, which is supported by GEVALOR, have a platform for composting waste. The annual production of Compost is estimated at 700 metric tons and the amount of waste treated per year is estimated at 4,500 metric tons. On its platform, there is the NGO ENPRO, Compost Standard and Compost enriched with animal matter. The standard 50 kg bag of compost is sold for CFAF 2,500 or CFAF 40,000 / ton and the enriched Compost is sold for CFAF 4,000 for a 35 kg bag or CFAF 100,000 / ton. This NGO benefits from monitoring the quality of Compost by the GTVD Laboratory (Management, Treatment and Valorisation of Waste), based at the University of Lomé.

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| IMG_5149 | IMG_5648 | IMG_5652 |
| Photo 7: Sorting done on the composting site | Photo 8: Compost pile maturing | Photo 9: Compost packed for sale |

It was noted that the Municipality of Lomé has built some transit centers that can serve as a model for this project. The transit center includes: (i) car / van parking platforms for unloading pre-collected waste; (ii) raised ramps serving as access for the waste discharge; (iii) large metal bins positioned to receive the waste; (ii) fence walls with access to the grid site. The site is equipped with a sewage system and the soil is paved to reduce the risk of soil contamination. Recycling activities organized around this transit center are: plastic waste recycling activities by the NGO STADD, composting activities by the NGO ENPRO; and some scrap recovery activities. The following photos show a transit center with some sorting activities by young people and women.

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|  | IMG_5680 |
| Photo 10 : Soviépé transit center (Lomé) | Photo 11: Discharging Waste by a precollector and sorting operated by women |

Overall, the difficulties are linked:

* Insufficient financial, human and logistical resources;
* Low technical and financial capacities of microenterprises in the waste collection and recycling;
* The fragmentation of land reserves, which makes it difficult to have space for grouping points;
* The lack of application of the texts, in particular the hygiene code and the decision prohibiting the burning of waste in the open air;
* Insufficient awareness.

Capacity building and logistic needs

* support for waste recovery
* support for the construction of a extension of a Landfill, intermediate landfills and recovery centres;
* support for the acquisition of efficient incinerators;
* support for the establishment of sector financing mechanisms, in particular by the private sector;
* Support for the implementation of an awareness and education programme;
* creation of a coordination framework to guide activities;
* State subsidy to allow access to compost for small agricultural producers;
* Support for the spatial organization of pre-collection NGOs by updating the studies carried out for this purpose.

**Waste management legislation**

Wastes management is governed by several legislative text, although much of it only provides partial coverage and the deficit in the application of the sanctions following the breaches of the law, the lack of knowledge of these texts, and the lack of regulation in the urban solid waste collection profession are deplored.

* Law No. 2008-005 of May 30, 2008 on a framework law on the environment, contains provisions relating to waste. Article 1 sets out the general principles for protecting the environment and improving the living environment; it constitutes the general legislative framework for the management of the environment, waste (section 8), harmful or dangerous chemical substances (Section 9) and pollution and nuisances (section 10);
* Law No. 2010-004 of 14 June 2010 on the Water Code prohibits any deposit of garbage or domestic and industrial waste causing a change in the flow of water or their regime;
* Law No. 2007-011 of 13 March 2007 on decentralization and local liberties defines the powers of local authorities in waste management;
* Law No. 2009-007 on the Public Health Code of the Togolese Republic in these fundamental principles provides in article 23 that the dumping and burial of industrial toxic waste, biomedical or hospital wastes are forbidden. Article 24 stipulates that industrial toxic waste, biomedical or hospital waste and other special waste must be eliminated in accordance with the provisions of national and international legislation applicable in Togo;
* Decree No. 2011-003 / PR of January 5, 2011 on the management of plastic bags and packaging states the prohibition of the production, importation, distribution, marketing, use , the collection and recycling of plastic bags and packaging and authorizes the production, distribution and marketing of biodegradable plastic bags and packaging.
* Interministerial Order No. 019 / MERF / METPT / MS of 17 October 2006 laying down the conditions for the collection, transport and management of garbage removed on board ships docking at the Autonomous Port of Lomé;
* Order No. 31 / MAEP / SG / DA of 21 September 2004 prohibiting the importation and use in Togo of organochlorines, including the following persistent organic pollutants (POPs): Aldrin, Endrin, Dieldrin, DDT, Mirex, Toxaphene, Hexachlorobenzene (HCB), Chlordane and Heptachlor;
* Order No. 30 / MAEP / SG / DA of 21 September 2004 prohibiting the import and use of methyl bromide in Togo.

International Agreements signed

* The United Nations Framework Convention on Climate Change: accession on 08 March 1995
* The Stockholm Convention on Persistent Organic Pollutants: accession July 22, 2004
* The Minamata Convention on Mercury signed on October 10, 2013 and ratified on February 03, 2017
* The Rotterdam Convention on the Prior Informed Consent Procedure (PIC) for Certain Hazardous Chemicals and Pesticides in International Trade: accession on 23 June 2004
* The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal: accession July 02, 2004
* The Bamako Convention: accession in 1996.

Institutional waste management structures

* The National Agency for Environmental Management (ANGE), under the supervision of the Ministry of the Environment, wants the application of the framework law on the environment. The ANGE is an institution supporting the implementation of the national environmental policy as defined by the government.
* The Ministry of Health through the Directorate of Sanitation supports the municipality of Lomé in the implementation of the municipal decree n ° 48 of 12/08/1986 concerning the raising of certain communal taxes, especially with regard to fines in case of incivism, source of insalubrity.
* The National Agency for Sanitation and Urban Sanitation (ANASAP). This National Agency is under the supervision of the Ministry of Urban Planning and Housing (entity responsible for urban waste) and the Ministry of Territorial Administration, Decentralization and Local Communities.
* The Togolese Revenue Agency (OTR) reports to the Ministry of Economy and Finance. In terms of waste management in Lomé, it is the reference body for the collection of the Household Garbage Removal Tax (TEOM) throughout the entire administrative area.
* Finally, as the entity responsible for the management of solid urban waste in the territory, the municipality of Lomé provides project management through the cleanliness division of the city. This division under the tutelage of the Technical Services Department is responsible for the areas of solid urban waste management, as well as street cleaning and sweeping.
* The private sector, associations, NGOs and the informal sector are involved in the field to support municipalities and populations in the collection, disposal and recycling of solid waste.

**OUAGADOUGOU**

Capital city of Burkina Faso with 12 districts divided into 55 sectors; the population is estimated at 2,500,000 inhabitants living on an area of about 600 km². The average population density is estimated at 39 inhabitants per hectare. The inhabitants produce waste of about six hundred thousand (600,000) tons annually.

For more than 10 years, the city implemented a waste management master plan, which resulted in the creation of a waste management department and the construction of equipment (landfill, collection centres, recovery units).

Despite the acknowledged results, changes in consumption patterns and population growth require improvements in the performance of the existing system to limit the quantities of waste landfilled and the costs generated by waste management.

**Waste Management status in Ouagadougou**

Solid waste management is the responsibility of municipalities.

The Ministry of the Environment, Green Economy and Climate Change (MEEVCC) develops policies and strategies in this area and the municipalities ensure their implementation. Hazardous waste management is under the responsibility of the MEEVCC in collaboration with other concerned Ministries and partners (NGOs, Associations, private companies).

Within the regulatory and legal legislative framework, several texts exist (laws, decrees, etc.).

* Law No. LAW No. 006-2013/AN on the Environment Code in Burkina Faso; Paragraph 2: Measures on waste
* LAW No. 022-2005/AN on the Public Health Code in Burkina Faso;
* Act No. 017-2014/AN prohibiting the production, import, marketing and distribution of non-biodegradable packaging and plastic bags.
* Decree No. 98-323/PRES/PM/MATS/MATS/MIHU/MS/MTT regulating the collection, storage, transport, treatment and disposal of urban waste;
* Decree No. 2008-009/PRES/PM/MS/MECV of 10 January 2008 on the organization of the management of biomedical and similar waste.
* National Sanitation Policy and Strategy (NSP) and Action Plan, adopted by the Council of Ministers on 4 July 2007, it is envisaged to update them
* Stockholm Convention on Persistent Organic Pollutants, ratified on 20 July 2004;
* Minamata Convention on Mercury, ratified on 10 April 2017;
* Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal, ratified on 05 October 1998;
* Bamako Convention ratified on 24 May 1993.

Burkina Faso benefited from two solid waste management master plans for the cities of Ouagadougou and Bobo Dioulasso. Only the Ouagadougou scheme was implemented and to this end, the city was subdivided into thirty (30) sectors and grouped into five (5) districts, including 12 collection areas, for a population estimated at the time at 1,500,000 inhabitants. Today, there are 35 collection areas for an estimated population of more than 2,000,000.

Concerning the organization of solid (municipal) waste in Ouagadougou, we note:

**For Household waste**

* Pre-collection: there are 3 cases of situation that are:
* Door-to-door insurance by associations or SMEs (12 for the city)
* Personal contribution to the Collection and Sorting Centres;
* Dumping garbage in wild dumps by the population.
* Collection: this involves transporting waste to the Collection and Sorting Centres (35 CCTs for the city) where the first phase of solid waste sorting is carried out. This sorting includes scrap metal, glass bottles, plastic cans, and other hard plastics;
* Transport of waste to the treatment and recovery centre. At this level, there is the second sorting of waste according to its nature for recovery (production of granules for plastic waste and production of compost for fermentable waste) after sorting, the rest of the waste is buried.

**Special waste situation (used oils, used batteries, scrap metal, plastic waste, etc.)**

* For plastic bags: as part of the implementation of the National project for treatment and valorisation of plastics waste (PTVP), the MEEVCC is involved in the construction of recovery centres.
* There are also private initiatives in this area developed by individuals.
* For used batteries and scrap metal: there are collectors that transport them outside.
* The management of waste oils, used batteries and scrap metal is currently being regulated (collection and storage authorisations granted).

**Hazardous waste situation**

* Biomedical waste is managed by the Ministry of Health. Most health facilities do not have incinerators for the disposal of this waste. Only a few private clinics have them.
* chemical waste (obsolete pesticides containing POPs and other seized chemicals such as cyanide, mercury and lead-containing waste (thermometer, mercury lamp, used batteries): there are several shortcomings in their management, including the lack of an adequate management plan, the lack of decontamination methods and measures to mitigate the risks of exposure of populations.
* Concerning Electronic Electrical Waste, there is a private initiative developed by the ATELIER du BOCAGE which dismantles computers and sends dangerous parts outside2

Tableau 1 : POPs inventory in Burkina Faso

| **POP** | **Type** | **Quantities** |
| --- | --- | --- |
| PCB | Equipment before 1990 | ***65 contaminated equipment:***  50 ppm ≤ 36 contaminated equipment’s ≤ 500 ppm  29 contaminated equipment ≥ 500 ppm |
| Equipment’s after 1990 | ***90*** contaminated equipment’s***:***  50 ppm ≤ 70 contaminate equipment ≤ 500 ppm  20 contaminate equipment’s ≥ 500 ppm |
| equipment from private companies | 01 highly contaminated transformer |
| POP-PBDE | EEE | 4,8 tons during the last ten (10) years  402 kg imported each year |
| DEEE | 11 kg for 2014 |
| Vehicles | 54,40 tons |
| PFOS | Chemical products and formulations | 51 552,71 kg |
| Ingredients used as industrial processes intermediate | 22 722,46 kg |
| UPOP (Dioxins et furans) | Air | 2 185,242 gTEQ |
| Soil | 2,151 gTEQ |
| Products | 1,550 gTEQ |
| Residues | 10,001 gTEQ |
| Non-POP obsolete Pesticides | Solid | 2 910,72 kg |
| Liquid | 126 049,53 litres |
| Waste | 119 415 de contenants vides |
| POP Pesticides : DDT | Solid | 1000 kg |

Women's Association for the Recovery of Plastic Waste

About thirty (30) women work in this centre, organized in an Association called "Association of Women for the Recycling of Plastic Waste". The activities of this women's association are mainly focused on the recovery of plastic waste. The work of recycling plastic waste on site consists of sorting, washing, rinsing, weighing and then shredding. After the jamming, the granules are then sold to a local company. The practical organization of all these recovery works is done in small groups: fifteen women for sorting, about ten for washing and rinsing and five for jamming.

The difficulties facing this Women's Association are as follows.

* Lack of financial resources despite a modest subsidy of 22,500 CFA francs per month that the mayor's office grants to each woman;
* Lack of logistical resources (transport, machinery, etc.)
* Lack of financial resources to transform the raw material into a finished product. It is a local society that pays the granules to the Association and then transforms them into consumable products (plastic and other material utensils), thus a loss of income.
* Difficulty in selling the raw material due to competition from the informal sector

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Photo 10 : Group of women in waste management

Economic Interest Group/Action for the Protection of the Environment (EIG/EPA).

Established in 2003, the EIG has 805 members. The objective of the EIG/EPA is to carry out activities in the field of environmental protection through the collection, sorting and recovery of waste. The EIG has 14,003 subscribers, 50 services and commercial locations, covering 25% of the population of Ouagadougou.

As a logistical means, it has 55 collection teams, 50 of which are animal-drawn and 5 motor-drawn. Collections begin at 6:00 a. m. and end at 5:00 p. m. The frequency of waste collection is one or more times a week at the request of customers. The monthly fee varies from 1000 to 5000 CFA francs.

The major difficulties encountered in the field in the context of the activities are:

* the rapid urbanization of the city
* the incivility of waste producers, which manifests itself in the refusal to subscribe, late payment of fees and non-compliance with specifications by subcontractors.
* unfair competition orchestrated by the presence of the informal sector on the ground;
* the low remuneration of 15,000 CFA francs granted by the Municipality in the form of a subsidy to sorters;
* Difficult access in some areas due to poor road conditions:
* lack of resources to transport waste to collection centres;
* the under-selling of finished products on the market.

Table 2: Data on the collection and sorting of waste from Borough 3 (Period: January to June 2018)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sorting centre** | **No. of carts** | **Sorted quantities** | | | | **Total recovered** |
| Plastics kg | Paper  Cardboard (kg) | Organics  kg | Black soil  kg |  |
| **CC du secteur 22** | 460 | 2755 | 1798 | 4322 | 30200 |
| **CT de plateau** | 1029 | 3009 | 2638 | 14077 | 96100 |
| **CT de loumousyar** | 735 | 4195 | 2249 | 6145 | 67800 |
| **CT de Toecin** | 447 | 1680 | 1127 | 4461 | 44200 |
| **CT de Kilwin** | 646 | 1817 | 849 | 2696 | 124300 |
| **CT de Karpala** | 898 | 4862 | 3395 | 8803 | 16700 |  |
| **CT du SIAO** | 1011 | 5172 | 4918 | 9378 | 51000 |  |
| **Total** | **5 226** | **23 490** | **16 974** | **49 882** | **430 300** | **525 872** |

The Technical Landfill Centre, which was built outside the city, is now overrun by housing all around. This poses problems today because the population in the surrounding area is asking for its closure because of the nuisances. There is a lack of infrastructure and equipment for transport and waste management, lack of appropriate POP storage facilities, of resources for the operationalization of the environmental police.

The total amount of dioxins and furans was estimated at 2,198,944 g-TEQ including 2,185,242 g-TEQ in air, 2,151 g-TEQ in soil, 1,550 g-TEQ in products and 10,001 g-TEQ in residues. However, uncontrolled combustion without an air pollution control system for medical waste alone accounts for 91.5% of total air emissions or 2,000 g-TEQ. It appears that waste burning (domestic and biomedical) and fires of are the main sources of production of dioxins and furans in the bush. Burkina Faso.

Stocks of obsolete pesticides consisted of 119,415 empty containers, 2,910.72 kg of solid obsolete pesticides, 126,049.53 litres of liquid obsolete pesticides and 1000 kg of DDT.

The total quantity of POP-PBDE found in EEE and other categories of material is estimated at 4.8 tonnes over the last ten (10) years. However, investigations have shown that 402 kg of POP-PBDE contained in EEE are imported into Burkina Faso each year.

The difficulties are enormous and among those mentioned by the participants were among others:

* Cleaning and waste collection
* Poor condition of waste transport equipment
* Waste Treatment and Recovery
* Problem related to the lifting of garbage bins
* Lack of appropriate POP storage facilities
* Capacity building for Municipality managers through training
* Lack of a framework for consultation between the various stakeholders
* Lack of resources for the operationalization of environmental policing
* Inadequate enforcement of laws and regulations
* Problem with the proximity of dwellings near the landfill site
* Lack of infrastructure and equipment to carry out good waste management practice.
* Lack of a mechanism to facilitate the dissemination of information and practical methods of awareness-raising and communication through modern tools and channels
* Lack of guarantee funds to enable the various actors to acquire work equipment

The recommendations made during the meeting are:

1. Review legislative and regulatory texts to bring them into line with current environmental concerns
2. Strengthen the capacities of stakeholders through theoretical and practical training in the field for different types of waste;
3. Train stakeholders on best practices and technologies for hazardous waste management;
4. Strengthen management capacities and support for the professionalization of actors in order to transform their status into that of companies;
5. Support it in the implementation of an entity that brings together all SME EIGs;
6. Develop four (04) mechanized waste recycling centres including a sales counter for recycled materials;
7. Support structures, NGOs, EIGs and women's associations for the acquisition of technological and computer equipment for data management and the operationalization of waste management;
8. Acquisition of equipment for cleaning and disposal of illegal dumps;
9. Equipment for the treatment of illegal garbage dumps;
10. Develop collection and sorting centres into infrastructure (shops, toilets, meeting rooms, electricity, etc.).

Local authorities in charge of waste management face difficulties in organising and financing the service. They are developing classic models (collection, transport, landfill) whose cost exceeds their financial capacity of many West African countries. In the absence of financial resources, waste is spread in the natural environment, degrading the landscape and polluting the soil as well as surface and groundwater.

Transport alone can represent more than 60% of the total cost of waste management. The characterization of this waste shows that more than 50% of it consists of soil and fermentable waste. Also, by avoiding burying this waste in final landfills, significant savings could be achieved and there would be a reduction in the production of greenhouse gases associated with the landfilling of fermentable waste. To do this, waste sorting is necessary.

To be able to manage their waste, cities must move from the traditional model to one that reduces transport, limits the landfilling of fermentable waste, recovers raw materials, creates jobs without increasing overall costs. Whatever the strategy chosen, it is necessary to go through a sorting phase for all or part of the waste. The savings that will be made on transport and landfill can finance the sorting and recovery of waste.

**THIES**

**Geography (size, population, etc.)**

Located 70 km east of Dakar (Senegal's capital city), Thiès region is bordered by the regions of Louga, Fatick, Diourbel, Dakar and the Atlantic Ocean. The surface area of the municipality of Thiès is 6822 ha. It is surrounded by the rural community of Fandéne.

The city of Thies occupies a strategic position because it is a crossroads, an obligatory point of passage, which connects Dakar by rail or road to the rest of the country, or even to the countries of the sub-region. The other two departments in the region are Mbour and Tivaouane.

Since its creation, the city of Thies has developed considerably with the advent of the Dakar-Niger railway, but especially with the proximity of Dakar, where it is the privileged site for the decentralization of certain military and industrial activities. Thus, very early on, the city grew demographically from 237,849 inhabitants in 2002 (RGPH 2002) to 286,215 in 2010. Today, the city of Thiès is home to 17.3% of the regional population, or more than 300,000 inhabitants

**Waste management legislation and institutions including accession to the Basel, Stockholm, Rotterdam, Bamako conventions.**

Senegal ratified the Stockholm Convention on Persistent Organic Pollutants in May 2003. The general objective of this Convention is to protect human health and the environment from these particularly toxic pollutants.

Basel Convention on the Transboundary Movement of Hazardous Wastes. Limit the transport of hazardous waste to ensure the proper destruction of waste.

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade Encourage shared responsibility and cooperation between Parties

in the field of international trade in certain hazardous chemicals (including POPs)

The protection of the environment and the management of natural resources is one of the most important

socio-economic development priorities of Senegal. The Ministry of Environment and Nature Protection (MEPN), which is responsible for sectoral policy, defines the main guidelines for environmental protection and ensures a permanent follow-up of the actions carried out by its various technical services, in particular the Department of Environment and Classified Establishments (DEEC).

The legislative and regulatory framework for waste management in the city of Thies can be analysed through:

* the law on the general code of local authorities
* the environmental code
* sectoral letters
* the standards and by-laws supplementing this legal arsenal.

And among the institutional actors involved in waste management are:

* the DREEC
* the DEPARTMENTAL HYGIENE DEPARTMENT
* the CONSTITUENT MUNICIPALITIES

**Waste management (production and treatment of different types of waste, stakeholders, financing)**

The current waste production in Thiès is 160 tonnes per day (58,400 tonnes/year) with residential collection and transport to the landfill; there is no waste sorting of any kind and all collected waste including biomedical waste are deposited in the communal "landfill" where several tons of household / municipal waste are incinerated every 3 or 4 days in the open air; 30% of waste is collected by the municipality (UGC/UDE) and the rest by the carters. 90% of the city's districts are covered but not all waste is collected. At the hospital there is no incinerators. The most commonly produced waste in households are: plastic bags, paper, food scraps and food peels, packaging, used clothing, e-waste, disposable glasses, sand, pen cleaning products, etc.

Like the other municipalities in the country, the municipality of Thiès does not have enough resources. Its only financial contributions come from municipal taxes, which are far from sufficient for the community's expenses.

During the 2011-2012 financial year, the operating budget of the municipality of Thiès was 1,309,844,312 CFA francs. The TEOM (municipal tax on domestic waste) collected was 19,515,341 CFA francs; the cumulative expenses for collection and scanning are estimated at 180,720,873 CFA francs. These figures show a considerable gap between the TEOM collected and the actual waste management needs. A significant increase in the TEOM would be required to cover most of the current needs in terms of household waste management, while the city is facing enormous difficulties in enforcing this tax. In household surveys, a large proportion of respondents are unaware of the existence of this tax and are not willing to pay it.

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| --- | --- | --- | --- |
| **Entities Generating waste** | **Problems** | **Causes** | **Consequences** |
| **Markets** | Over-occupation  Insalubrity | Infrastructure deficit  Inefficient collection system Deficit | Waste overflow on traffic lanes  Garbage pile up near the goods |
| **The bus station** | Multiplication of unauthorized depots | Lack of control and monitoring  Lack of equipment  Incivility | Health risks  Unsanitary conditions |
| **Households** | No use of regulatory bins  Spill of garbage on city streets  Poor waste conditioning | High cost of regulatory bins  Low collection frequency  Lack of knowledge of good practices (sorting, etc.) | Unhealthy  impact on the living environment  Loss of recoverable waste |

For the estimation of waste production, we used the average ratio of household waste production per person in secondary cities in Senegal, which is about 0.4 kg/hbt/day.

**Needs expressed**

* Waste management needs and strategies
  + Waste storage method at household and street level

The absence of regulatory bins in homes and most streets encourages the development of certain diseases. The need for regulatory waste bins in households and public places should be evaluated and high waste production sites should be equipped with enough garbage bins

* + Implementation of a payment collection system for regulatory waste bins.
  + Existence of areas without a collection system

The insufficiency of the municipality's resources and the isolation of certain areas mean that collection is not ensured, resulting in individual initiatives. It is critical to ensure sustainable and comprehensive waste collection throughout the municipality. To this end effort should be made to:

* + - Expand and/or increase collection channels
    - Repair broken trucks
    - Add to the existing fleet of vehicles
    - Increase collection staff
    - Integrate cart operators for irregular areas
    - Strengthen the capacities of cart operators on the best collection strategies
    - Equip carters, collectors (skips) and sweepers
    - Strengthen scanning staff
    - Redefine scanning circuits
  + Lack of standard landfill in the municipality

Wild deposits are harmful to the environment and pose public health problems. The strategy is to implement an effective transfer and landfill system. The actions are:

* + - Carry out environmental studies for the identification of a potential site for the implementation of a landfill
    - Implement a project management program
    - Carry out the construction of the landfill
    - Establish an infrastructure management mechanism
    - Construct landfills (in place of existing authorized depots)
  + No mastery of sanitation and waste storage techniques in the home

Lack of training promotes the lack of mastery of management techniques. Provide training on effective waste management.

* + - Determine training needs
    - Develop a training plan
    - Recruit trainers
    - Train women on the best ways to sort and store waste
    - Train women on waste recovery techniques
    - Raise women's awareness of the importance of good waste management in health
    - Strengthen the capacities of technical and institutional actors
  + Low exploitation of existing potential for valorisation

Failure to take advantage of existing potential leads to a weakening of the link. Boosting the waste recovery link in the city of Thiès

* + - Strengthen the Silmang valorization unit
    - Organize and support the women who process light plastics from the SET SET SETAL association
    - Create, in partnership with the city and development stakeholders, a composting unit to recover organic waste.
  + Lack of coordination between the different actors involved in waste management in the city

The lack of coordination between the actions of the municipality and those of the carters encourages the multiplication of illegal dumping. Establish a framework for coordinating the actions of the various stakeholders in the city's waste management.

* + - Bringing all the actors together around an entity
    - Organize partnership relations between them
    - Define the scope of intervention of each actor in the management of waste in the municipality
    - Determine the role and responsibility of each actor.
  + Insufficient resources deployed to finance the waste management sector

The low coverage rate of the collection system is due to insufficient resources. To succeed in the effort, the city must establish a sustainable financing system for waste management at the commune level.

* + - Determine the amount of the monthly payment for the garbage cans
    - Have the different households in each neighbourhood subscribe to the Collection System
    - Establish mechanisms for collecting monthly payments

**The structures to be involved in the project (small list of public, private, financial actors, etc...)**

The implementation of the operational waste management plan will require a major intervention by local stakeholders. At the administrative level, it will involve the various municipal actors but also decentralized state structures. Emphasis will also be placed on partnership with private structures working in the field of waste management and on support for the various civil society organisations in the sector.

Many direct jobs will be created and assigned to local youth, which will help reduce the unemployment rate in the city. For the construction and operation of the planned infrastructure, a significant investment will be made and will bring significant economic benefits. Many young people without qualifications will be recruited and trained; local actors already involved in waste management will benefit from a professionalization of their activities and an improvement in their living conditions.

**Group of actors involved**

* Municipality: Ensures, at the local level, environmental management, infrastructure, public health
* Prefecture: Representative of the State authority
* Association of delegates and district councils: Relay between the services of the Municipality and the population of the district.
* Hygiene Service: Decentralized service whose mission is to ensure compliance with good public hygiene practices.
* Neighbourhood leaders: Main authority at the neighbourhood level
* Grassroots Community Organizations (CBOs): Grassroots Development Leaders
* Participation in integrated waste management.
* Social Development Service: Supports social and economic development and the promotion of women as key actors in waste management.
* Service de l'agriculture: Extension of composting and the various systems for using solid and liquid waste.
* Direction régionale de l'urbanisme : Contribution of the living environment, increase in wild deposition areas, Ineffectiveness of the policies put in place.

**PARAKOU/BENIN**

**Geography (size, population, etc.)**

The city of Parakou is located in the northern part of Benin. Covering an area of 441 km2, the Municipality of Parakou is the third largest city of Benin, located in the south of the Borgou Department, at 407 km from the economic capital city Cotonou and represents the main city of North Benin. The municipality of Parakou is bordered to the north by the Commune of N'dali, to the south by the east and to the west by the Commune of Tchaourou.

It includes three (03) boroughs and fifty-eight (58) city districts. The population of Parakou went from 255,478 inhabitants (RGPH, INSAE, 2013) to 350,000 inhabitants in 2018 with an average annual growth rate of 4.90% and an average density of 510 inhabitants/km2.

**Current waste management situation**

The production of household waste in Parakou is estimated at 71,540 tonnes per year. The city has fourteen (14) structures for the pre-collection of this waste. These structures, which are mostly NGOs, are distributed in the sectors according to the Zoning carried out by the Municipality in 2010 thanks to the partnership between the Municipality and DCAM-Bethesda. These NGOs cover only 32% of households and 58% of households continue to dump garbage in the wild or on wild dumpsites. The waste characterization revealed a proportion of 35.85% organic matter, plastic films 9.92%, hard plastic 1.40%, batteries 0.08%, glassware 2.56% etc. E-waste is found there but in small proportions.

From 2017 onwards, improvements were made to the pre-collection level, namely:

* The creation of a consultation framework: Hygiene and Sanitation Committee of the commune of Parakou by decree dated 17 November 2017
* The setting of the household subscription price (between 1000 and 2000CFA per month and per household). Of this amount, NGOs should refund 20% to the municipality, i.e. a forecast of 120 million in the 2018 budget,
* Subscription to the pre-collection structures is made compulsory and has become a condition for obtaining certain services from the administration (see radio release dated 24 January 2018)
* The takeover of the Municipality's organisation chart and the creation of the Environment Department
* The appointment of a Technical Advisor for Planning and Environment
* The acquisition of a household waste management software (SyGOME), user training and the acquisition of computer equipment. This software allows you to manage subscriptions and monitor the activities of pre-collection NGOs
* The resumption of the city's zoning map in order to better empower pre-collection NGOs
* The takeover of the Municipality's organisation chart and the creation of the Environment Department
* The appointment of a Technical Advisor for Planning and Environment
* The acquisition of a household waste management software (SyGOME), user training and the acquisition of computer equipment. This software allows you to manage subscriptions and monitor the activities of pre-collection NGOs
* The resumption of the city's zoning map in order to better empower pre-collection NGOs
* The appointment of a Technical Advisor for Planning and Environment
* The institution of a Monthly Day for a Healthy Environment dedicating the last Saturdays of each month to the cleaning of the city by the populations under the supervision of the neighbourhood chiefs
* The determination of the number of NGOs in charge of the pre-collection (there are currently 14 of them)
* The acquisition of 24 tricycles for pre-collection NGOs thanks to the ingenuity of the Mayor, and other partners of the municipality who have donated these facilities to the city

Three (3) companies currently collect waste at the rate of one company per borough. They do so under a contract for a monthly fee of approximately 20 million, or 240 million per year.

Only 7 transit sites out of 17 that needed, have been developed to date thanks to the support of the AIMF, the FNEC, the Parakou Orléans partnership.

The difficulties in the current waste management schemes lie in the low effectiveness of the consultation framework for the sector's stakeholders, the inadequacy of the management structures for the collection and pre-collection of domestic solid waste and the inadequacy of solid waste management facilities and equipment in the city. The low subscription rate of households to the domestic solid waste pre-collection and insufficient awareness are other limitations. There is a strong lack of awareness and training of the population and most practitioners.

The city is faced with difficulties in the management of plastic bags, which remain a source of environmental and health problem, despite the law prohibiting their use and marketing. Incineration of used tyres for the purpose of depilation of slaughtered animals intended for consumption is also a common practice.

Regarding health centres, there is a lack of incinerators and a low thermal capacity of the existing ones; private clinics that do not have equipment and they transfer biomedical waste to the public sector for incineration.

At the departmental Hospital and University Centre, source sorting is systematic through four types of waste bins made available, but serious concerns exist for the management of serum bottles as well as anatomical waste which is only disinfected and poured into pits provided for this purpose. In addition, the current incinerator (functioning on electricity and diesel) dates from 1999 and its thermal capacity does not make it possible to completely eliminate needles, hence the non-standard practice of the landfill method prevails for this hospital, which would produce 40 to 50 kg of biomedical waste per day

There is no statistical data on the amount of biomedical waste produced in any of the other health centres.

**Local needs and plans for sound waste management**

The central element of the waste management planning by the municipality is the construction of a landfill in Bakperou, an area located between the commune of Parakou and the commune of Tchaourou. Additionally, there is request for the construction of transfer centres, the development of the waste recovery site abandoned by GEVALOR, the installation of incinerators for the management of biomedical waste and support for the implementation of a comprehensive awareness-raising programme.

The municipality must secure the prospective area of 40 ha through the acquisition of a land ownership title. The landfill will be managed within the framework of the law on intermunicipal cooperation. There is an environmental impact study carried out in 2011 that should be updated, and a household solid waste management plan completed in 2017 to support the management plan.

**Legislative waste management framework in Benin**

* Act No. 87-015 of 21 September 1987 on the public health code was for a long time the main legal basis for waste management;
* Articles 27, 28, 29 and 74 of the Constitution of 11 December 1990 legislate to protect the citizen's living environment and provide for the conditions for the exercise of his rights and duties in environmental matters.
* Act No. 98-030 of 12 February 1999 on the framework law on the environment in the Republic of Benin.
* Law No. 2017-39 of 26 December 2017 prohibiting the production, export, marketing, holding, distribution and use of non-biodegradable plastic bags in the Republic of Benin
* Decree 2001-096 of 09 February 2001, creating the environmental police
* Decree 2003-332 of 27 August 2003, on solid waste management in the Republic of Benin
* Act No. 097-029 of 15 January 1999 on the organization of municipalities (section 3 and articles 93 and 95): Municipalities are responsible for the collection and treatment of solid waste other than industrial waste, liquid waste, storm and waste water drainage networks (Article 93) and the regulation of individual sanitation (Article 95).
* Act No. 2009-17 of 13 August 2009 on the modalities of intermunicipal cooperation in the Republic of Benin

**International agreements signed** :

* The United Nations Framework Convention on Climate Change was signed by Benin on 13 June 1992 and ratified on 30 June 1994.
* The Stockholm Convention on Persistent Organic Pollutants (POPs), adopted on 22 May 2001 and ratified by Benin on 05 January 2004
* The Minamata Convention on Mercury, signed on 10 October 2013 and ratified on 07 November 2017 by Benin.
* The Rotterdam Convention ratified on 05 January 2004
* Basel Convention, accession by Benin on 14 December 1997
* The Bamako Convention ratified by Benin on 17 July 1997

**Institutional framework**

Under the provisions of Act No. 97-029 of 15 January 1999 (articles 93 to 95) on the organization of municipalities in the Republic of Benin, municipalities are now responsible for the collection and treatment of solid waste, the management of landfill areas, the fight against pollution, and the protection of natural resources (forests, soil, watercourses, etc.). Each municipality must take measures to organise waste management in order to ensure a healthy and sustainable living environment for the population. Better still, Act No. 2009-17 of 13 August 2009 on the modalities of intermunicipality in the Republic of Benin is a springboard for waste management in communities of municipalities in order to boost the achievement of results and accelerate the socio-economic development of municipalities.

The Ministry in charge of the Living Environment defines the national environmental policy through the Directorate General of Environment and Climate. The Prefect of the department is responsible for the implementation of this policy with the support and advice of the decentralized structures of the Environment Ministry.

**Pollutant emissions, POPs and Mercury**

In Benin, Persistent Organic Non-Intentional Pollutants (POP NI) are emitted mainly during the burning of household and agricultural waste, the improper incineration of biomedical waste, bush, forest and savannah fires, food smoking and also by the transport sector. The results of the 2015 inventory showed that Benin contributed 264.2g TEQ/a for total releases of unintentional POPs, including: (i) Waste incineration: 81, 9g (TEQ/a) in air; (ii) Uncontrolled combustion processes: 177.0 TEQ/a, in air.

The source for uncontrolled combustion processes is the main source of dioxins and furans emitted, with domestic wood and charcoal cooking and the mineral production industry as secondary factors. The emission rate is due to practices such as burning agricultural and domestic waste and landfill fires. (See Updated NIP, 2018 Report, pages 68 to 72). Incineration of biomedical waste (source group 1) is one of the major sources of POPs releases and emission mitigation should be sought. In Benin, all health facilities are required to record the quantities of waste incinerated and burned. Data on the incineration and open burning of waste come from the databases of the National Directorate of Public Health (DNSP) of the Ministry of Health. Thus, approximately 1716.69 tons of biomedical waste are incinerated or burned annually in Benin. (See MIA Report, 2017).

The results of Benin NIP showed that the e-wastes sector contains large quantities of PBDE, even more than the transport sector with between 15.68 and 45.80 tonnes of PBDE contained in 1758086 TV sets and 645698 CRT monitors held by households throughout the National territory. The average amount of all electrical and electronic equipment from 2004 to 2009 was 6,430.78 tonnes, peaking at 8,560.23 tonnes in 2007. An extrapolation of the Waste Electrical and Electronic Equipment generated made it possible to have 9,000 tonnes in 2016. These e-wastes are found on dumpsites, near the streets, on the sanitary landfill site of Ouèssè. A few studies have reported significant environmental pollution in several regions of the country. The best known are those that housed the dumpsites in Cotonou (Agontinkon) and Abomey Calavi (Hêvié). Benin, like developing countries, does not have processing equipment and materials to recover materials from e-waste or to estimate the quantities of POPs and mercury emissions. (See: Technical report on the study of transboundary movements of e-waste, Benin, 2012, PP 31, 33, 55, 56).

44,500 kg of mercury are released annually to the environment according to the following distribution:

* Air: 16,220 kg of mercury are released annually into the air. These releases are due to the use and disposal of mercury-containing products (6263.5 kg), incineration and burning (4974.2 kg) and gold mining by mercury amalgamation (4140 kg).
* Water: Mercury releases to water are estimated at 6,860 kg annually. These discharges include gold mining by mercury amalgamation (3285.6 kg), the use and disposal of mercury-containing products (2957.5 kg), wastewater disposal and treatment (1039.8 kg) and informal disposal of general waste (608.3 kg).
* General waste: 12,040 kg of mercury is found in general waste annually. This mercury comes mainly from the use and disposal of mercury-containing products (11,909.7 kg).
* Waste Treatment and Disposal: This category includes 50 kg of mercury released annually from the use and disposal of mercury-containing products (42.2 kg), the application, use and disposal of dental amalgam (6.9 kg) and the incineration and open burning of waste (4.7 kg).

Overall, mercury releases and emissions to the environment are mainly due to the following sectors:

* Use and disposal of mercury-containing products: 61%;
* Gold mining by mercury amalgamation: 23%;
* Incineration and burning in the open waste area: 11%;
* Informal deposit of general waste: 3%.

**3) The revised alternative alternative scenario with a brief description of expected outcomes and components of the project**

As stated in the PIF, the GEF financed activities will be structured around [4] components and [10] outcomes. The number of outputs has been increased to 39 instead of 36 initially. Some outputs have been reformulated to be coherent with the amended scope of 6 cities and their surrounding municipalities. The reformulation also addressed a better response to the barriers identified in project cities, and revised output 1.1.4 addresses the development of economic instruments for the improvement of the financial viability of landfill gas (LFG) extraction, biogas production, or energy solutions, as well as the achievement of the targeted global environmental benefits (gas flaring).

The STAP pointed to problems linked to "flaring of landfill gas" as an option for preventing methane emissions and indicated it is an unsustainable practice that would be detrimental to the expected environmental and economic benefits from this project because of the waste of valuable resources and the black carbon emission from flaring of methane. This has been noted and the project implementation will place accent on identifying feasible options of landfill gas valorisation. Meanwhile, as landfill fires are possible because of landfill gas (LFG) , gas flaring is a common practice to avoid such events. Additionally, it has been demonstrated that capturing and flaring the landfill gas achieve greenhouse gas (GHG) emission reductions.

To respond to the STAP warning, the second working group established at the regional level on recycling and valorisation will have a task related to the elimination options of LFG. It is already planned to consider LFG valorisation through electricity production. Such electricity production requires several years until the landfill reaches sufficient capacity. Other options such as direct use of cleaned gas for industrial purposes or cooking will be studied.

This regional project aims to build capacity of recipient countries in environmentally sound management of waste and to demonstrate best available techniques and best environmental practices with the view of reducing pollutants emissions such as: UPOPs (dioxins and furans) in accordance with the Stockholm Convention, mercury in accordance with the Minamata Convention and CO2 and methane in accordance with Paris Agreement. The implementation of the interlinked components will ensure integrated municipal waste management to address the key barriers and gaps associated with the increasing waste generation by a growing population and the weak knowledge and infrastructure in project countries. The project will therefore contribute to the improvement of the environment through the introduction of practices and innovative programmes for the sustainable management of solid waste including POPs and other chemicals in domestic wastes in participating cities. Waste minimization and recovery including appropriate measures to prevent POPs and mercury containing waste will be particularly targeted as uncontrolled burning of wastes has been identified as one of the most important sources of UPOPs.

With the GEF support, the participating cities and their surrounding municipalities and villages in six (6) WAEMU countries will be able to enhance the institutional capacity and technical capability of public and private stakeholders, by reviewing and updating the current regulation and policies, with due consideration of the requirements of existing Conventions and Agreements. The authorities in the six participating cities will have tools to undertake the development of an overall integrated waste management strategy based on BAT/BEP guidance of both Stockholm and Minamata Conventions  and hence produce global benefits by reducing release of POPs and other harmful chemicals associated with uncontrolled incineration. The monitoring capacities for POPs and mercury emissions will be strengthened through collaboration with programmes such as the Stockholm Convention Global Monitoring Programme and the use of the BAT & BEP Toolkit.  This support will also include strong stakeholders training programmes to enhance their knowledge of the negative impacts of UPOPS, mercury and other hazardous materials and the measures to prevent their generation.

The project implementation will build on a regional mechanism for developing and harmonising institutional aspects of waste management, regulatory schemes, strategies as well as collaboration between project countries for enhanced coherence and synergies. A network of national and regional experts will be established to support regional coordination between project participants and capitalize the exchange of good practices and knowledge.

An important and challenging activity in the project will be the establishment of an effective system to enable and ensure cooperation among key stakeholders in the waste management chain to deliver the outputs. To enable this, the conduct of the project will be overseen by a secretariat staffed with a project coordinator. The secretariat will facilitate collaboration between actors by maintaining coherence of their actions in relation with each other’s on the basis of the official mandates.

Sustainable funding that goes beyond the life of the project is a critical element. To sustainably manage their waste, countries will need to implement robust financial mechanisms based on stable income. To achieve this the project will facilitate the strengthening of regulatory and institutional basis of tax collection, securing the financial contribution of governments and municipalities to sanitation and waste management, consolidating the technical capacities of informal sector in waste management as well as facilitating access to microcredits by SMEs, hence contributing to a lasting solution to wastes management. With a larger number of SMEs benefiting from financing and capacity building, more jobs will be created, and the waste management sector will become more attractive to investors.

Each country will be equipped with a national "Green Window” to give support to micro companies for waste collection, recycling and valorisation. These Green Windows will function as a "clearing house" and database of existing national projects and initiatives aimed at encouraging entrepreneurship. In this regards they will:

* develop a waste management stakeholders’ network, necessary for building an eco-system favourable to business creation,
* ensure complementarity and synergies with existing private sector initiatives and
* offer a one stop for IEGs and SMEs responding to their demands and expediting administrative burden; the Green Window will facitlitate needs assessment, certification, access to technical and financial support in the field of sustainable waste management (training, recycling, access to loans, etc.), with the help of partners of the eco-system of each country (banks, universities, etc.).

The Green Windows" will be established by default within the ministry of the environment, or an agency of the participating countries that will meet the characteristics and capacity specified in the terms of reference.

A basic principle in the conduct of the project will be to build on the characteristics and achievements of each project country and strengthen the existing mechanisms, consolidate the existing strategies or actions and develop national programming with a regional outlook using a pragmatic approach.

The project is structured around four components:(i) establishment of a regional capacity to support and share experiences in the waste sector in the partner countries; (ii) development of local capacities for the promotion of best available techniques and best environmental practices in waste management for reducing emissions of UPOPs and mercury; (iii) organizational, technical and financial support to micro-enterprises operating in the waste sector, (iv) support for the construction of infrastructure of treatment and recycling of solid waste.

Full implementation of project elements will enhance legal, strategical and economical frameworks (Outcomes 1.1., 2.1, 2.2), financial mechanism (Outcomes 1.1., 2.1, 2.2, 2.3. 3.1, 3.2.), technical and technological capabilities (outcome 1.2, 2.1, 2.2. 2.3, 3.2, 4.1) stakeholders engagement including civil society, public, and private sectors (outcome 1.1, 1.2, 2.1, 2.2, 2.3, 3.1, 3.2) as well as promote an innovative approach of sustainable management of waste leading to wastes valorisation and the minimisation of UPOP, Mercury and GHG emissions, through adoption of environmental, social and economic measures (Outcomes 2.3, 3.1, 3.2 and 4.2.). The lessons learned from this project will be capitalized for achievement replication and scaling up (outcome 1.3) in other cities and villages of WAEMU members’ States.

**Component 1: Establishment of a regional capacity and experiences sharing among project countries to promote sustainable waste management**

Outcome 1.1: Decision-making tools to promote sustainable waste management at the regional level and reduce pollutants release.

To achieve this outcome, the following activities have been scheduled: (i) the establishment of a regional secretariat for project coordination; (ii) the preparation and adoption of regional strategies for waste treatment, handling of POPs and mercury wastes from domestic wastes streams and reducing UPOPs and mercury emissions; (iii) the realization of a regional study of the technical and economic requirements for successful wastes treatment and recycling in WAEMU.

The strategies will help making waste generators and recyclers more accountable for the costs of sustainable waste management. The polluter payer principle will be deeply explored. The objective is not only to ensure that waste, including POPs, mercury and other hazardous chemicals are no longer a source of diseases for the population, but also to eventually establish an economic system (circular economy) which will make the waste sector sustainable, source of stable jobs and self-financing. The studies programmed under this outcome will benefit from the support of the Working Groups and the forum to be established under Outcome 1.2.

***Output 1.1.1:*** *Establishment of a regional secretariat for project coordination*

A regional secretariat will be set up and will be responsible for implementation of the project components, administration of the shared platform, development of common wastes management strategies and reports as well as monitoring, evaluation and knowledge sharing in beneficiary countries. This secretariat willwork under the guidance of a Steering Committee comprising national and international project partners, National Coordinators, and which will meet once a year and provide guidelines for the coordination of activities and the smooth running of the project components at the regional level.The Steering Committee can organize extraordinary meetings if needed.

For the sustainability of the project, the Department of environment of WAEMU Commission will be used as host of the regional secretariat (see the detail of the institutional arrangements under the item A.6). BOAD will provide support the establishment of the regional secretariat and staff recruitment.

***Output 1.1.2:*** *Regionally adopted strategies for waste treatment, recycling and recovery,* *handling of POPs and mercury wastes from domestic wastes streams and reduce UPOPs and mercury emissions*

A common strategy will be adopted in the WAEMU region for sound waste management and sustainable disposal of waste. The strategy will provide broad understanding of the key aspects of waste management, including on the adoption of management options for reduction, reuse, recycling and disposal of waste, as well as guidance on handling special (electrical, electronic, medical) wastes. Short, medium and long-term targets will be developed with due consideration of baseline data and the way to achieving these targets will be identified.

The joint strategy will be validated at national and regional level and will be used to operationalize monitoring and compliance structures such as the environmental police in each beneficiary country.

***Output 1.1.3:*** *Regional study of technical and economic requirements for waste management and sustainable funding for collection, sorting and recycling in WAEMU*

This study will determine the options of waste treatment technology including options for landfill gas valorisation through an analysis of international experiences in countries with similar conditions and a comparison of alternatives. Several treatment technologies will be analysed such as mechanical biological treatment, heat treatment and valorisation by composting, digestion, etc. and SWOT (Strength, weaknesses, opportunities and thread) analysis will be undertaken to determine the suitability of technologies. Options for producing refuse-derived fuel (RDF) for thermal use in cement factories will also be explored with due consideration of the context and waste characteristics in project countries.

The study will strive to identify safe markets at the national, sub-regional and international levels for the sale of recycled products in order to adapt waste recycling activities to demand and make the sector profitable. The study will propose measures that can ensure long-term social, environmental and economic sustainability as well as the adoption of circular economy approaches for the whole waste sector.

With a view to promote an appropriate mechanism for sustainable financing of waste management in beneficiary countries, two (02) financial mechanisms will be put in place. The first concerns the promotion of appropriate taxation and fees to ensure the continuous and sustainable financing of the entire waste management chain. The second, the Green Window, is more oriented towards promoting the involvement of the private finance sector in the sustainable management of waste (see Output 3.1.1.).

In the case of developing appropriate taxation and fees for sustainable waste management, a regional study will be commissioned as part of the project implementation. The study will review current systems of taxes and fees for waste management in countries to highlight weaknesses and propose options that are reliable, acceptable and applicable. The study will propose a model of taxation adapted to the producer of waste, efficient collection and management of taxes and fees and effective provision for the benefit of municipalities in each beneficiary country. The study will focus on the possible usefulness of various sectors such as water, electricity, GSM to collect taxes. It will also study how the financial mechanism can support the Green Window's sustainability (established under Component 3)..

The microfinance institutions engaged in the project, the town halls and other agencies responsible for the management of Green Windows, among others, will be heavily involved in the study. The study should select the most reliable institutions and define with them the best tools, mechanisms and subsidized interest rates that will facilitate collaboration. The establishment of Green Windows (Output 3.1.1.) Will take into account the results of this study.

The study will be validated at national and regional level.

Outcome 1.2: Capacity for sharing experiences and expertise on sustainable waste management in place and strengthened.

To achieve this outcome, the project plan to : (i) establish working groups on priority topics related to sustainable waste management; (ii) operationalize regional platform of public and private waste management experts and practitioners; and (iii) Organize an annual regional forum for the development of public-private partnerships for sustainable waste management in the project countries. The working groups and the regional platform will support the performance of studies and activities programmed.

***Output 1.2.1*** *: Establishment of three working groups on priority topics relative to waste sustainable management*

Three working groups on priority topics for sound waste management will be established: (a) development of regulatory and institutional frameworks as well as approaches to domesticate requirements of international agreements; (b) development of a programme of recovery, recycling and valorisation of plastics waste, electrical and electronic equipment waste and household waste. This working group will analyse the sector and provide guidance as to the processes and ultimate use of recycled products; (c) development of effective and sustainable mechanisms to finance the sector (eco-organizations, local taxation, public-private partnership...) and sustainable market to sell the flow of recycled products.

The conclusions of the different groups will be shared with stakeholders on the regional platform (output 1.2.2) and will be discussed during the fora to be organized annually (output 1.2.3). The different working groups will be composed of specialists working in the relevant fields. The project will provide financial support to facilitate meetings between the experts of the working groups.

***Output 1.2.2:*** *An operational regional platform of public and private waste management experts and practitioners*

As part of the project, a regional electronic platform for exchange between experts in the field of sustainable waste management will be set up. The platform will bring together private companies involved in waste management as well as experts and practitioners in the field. The platform's role will be to: (i) facilitate exchanges between experts on waste management knowledge and practices with a view to finding innovative solutions adapted to the local circumstances; (ii) facilitate experience sharing among beneficiary countries in a timely manner, and (iii) promote the transfer of lessons learned and knowledge to other cities in the region. The figure below is an illustration of the Platform.

|  |  |
| --- | --- |
|  | The electronic platform will have national level hubs hosted by the national project coordinators that will be connected at regional level under the supervision of the Regional Coordinating Secretariat of the project.  The Group of Experts and Practitioners will be composed, inter alia, of : Focal Points of the relevant Conventions (Stockholm, Minamata Basel, Bamako and Climate change Conventions ) representatives of Environment Funds, National Laboratories involved in the waste sector, hygiene and sanitation Services, health, environment, urban planning, security, finance, customs, trade, industry, commerce and industry chambers, NGOs / Associations, SMEs / SMIs and EIGs. |
| Figure 1: Illustration of the interaction between the working groups and plateforms |

It was decided during the mid-point technical workshop that, in addition to this electronic platform, a physical exchange platform will be established between the mayors of the project beneficiary cities. An annual meeting of the platform will be organized once a year with the participation of mayors and their technical sanitation and environment officers. During these meetings, the experiences on waste collection, transport, recovery and financing system, etc. will be shared. The Regional Project Coordinating Secretariat and the National Project Management Units will participate in these meetings to exploit the findings in an adaptive management context. This platform can invite private enterprises to explore the public-private partnership possibilities.

***Output 1.2.3:*** *Organization of an annual regional forum for the development of public-private partnerships for sustainable waste management in the project countries*

One of the project's ambitions is to develop public-private and private-private partnership for sustainable waste management in the WAEMU region. To do this, the project will organize a forum every year to offer the various actors a framework for discussions and exchanges. These meetings will be organized by the Regional Project Coordination Secretariat. They will rotate between the project beneficiary cities and will involve regional and international technical and financial partners.

During these fora, country presentations will be made to share experiences and lessons learned from current and past initiatives. The results of the work of the different research groups and the exchanges established under Output 1.2.1 and 1.2.2. will be presented to the participants and will be discussed.

In order to encourage young researchers and entrepreneurs to be deeply involved in the innovative waste management solutions, a competition will be launched nine (09) months before each forum, to select the best micro-projects for sustainable waste management. Each country will select two (02) best micro-project ideas which will be presented at the forum. The project will seek technical and financial support for the winners for the implementation of their micro-projects. The financial support will be up to $ 10,000 depending the initiative size. The Regional secretariat project coordination will ensure the complementary and synergy of the selected initiatives.

Outcome 1.3: Project inception, planning, monitoring, evaluation and impact assessment

The project monitoring and evaluation system is built around the logical framework as a tool of management, planning and assistance to decision-making for all partners involved in the implementation of the project. Several guides and tools will be used to measure the performance of the program. Firstly, at the city and national levels and then at the regional level. Investigations on effects and impact during the start-up, the mid-term review, the project completion and the analysis of annual technical, economic and financial performance will measure the project impact. A computerized database will be developed for each city of intervention. These local data will be centralized for analysis on the level of performance of the project. Quantitative targets will be set by cities at the start of the program during the review of the logical framework, with stakeholders, taking into account the intervention sites. A mid-term review and final evaluation are planned in order to assess changes in the reference situation. The monitoring and evaluation system should support decision-making for the adoption of actions or activities that can improve future initiatives, facilitate reporting on the effectiveness of the reduction in the generation of UPOPs as well as other hazardous and toxic releases such as Mercury as a result of the application of BAT and BEP for sound waste management. Monitoring and evaluation tools will be developed based on existing mechanisms and ongoing projects at operational level (survey records, further investigation on the effect/impact evaluation, monitoring activities, thematic studies and dashboards).

***Output 1.3.1.*** *Project Inception and planning*

**Project Inception Workshop**

After the approval of the project by the GEF and once the Regional secretariat for project coordination and National project management units are set up, the project inception workshop will be organized. This workshop will be organized at the regional level by the Project regional coordination Secretariat with the support of BOAD, WAEMU Commission. The workshop will bring together representatives of partners involved in the financing, implementation, monitoring and evaluation of the project as well as GEF Secretariat. A fundamental objective of the Inception Workshop will be to present the modalities of project implementation and execution and to assist the project team to understand and take ownership of the project’s goals and objectives. During this workshop, the tasks of monitoring and evaluation will include: (i) the presentation of the project results framework; (ii) the review of monitoring and evaluation indicators; (iii) the preparation of technical clauses that should be included in tender documents to ensure compliance with the functions of monitoring and evaluation; and (iv) the clarification of the distribution of the monitoring and evaluation tasks among different actors.

During the project inception workshop, members of the regional and national coordination units will be trained on project monitoring and evaluation issues by the BOAD and the GEF specialists.

The inception workshop will be over 5 days, in one of the project beneficiary countries, and composed of 2 parts:

* a technical session which will allow the regional and national Coordination Units members to understand and master the project components. This part of the workshop will mainly bring together the members of the Regional Secretariat and of National Coordinating Units and BOAD and GEF Secretariat’s monitoring and evaluation units. Given the complexity of the project, this technical session will take 3 days.
* the official launch phase of the project bringing together the Steering Committee members, the Coordinating Units members, the Mayors of the beneficiary cities, the focal points of the international conventions (Stockholm, Minamata, Basel, Climate Change, the Ministers in charge of Environment, Health, Finance, the representatives of Environment Department of the WAEMU Commission, BOAD (Directorate of Environment and Climate Finance, Infrastructure Directorate, Resident Missions Directorate, Resident Heads of Mission, Directorate of retrospective evaluation, etc.), the GEF Secretariat. This official launch will take 2 days.

After the inception workshop, the Regional Secretariat will prepare a report of the project inception. The report will include a description of the functions and the institutional responsibilities and coordination of stakeholders in project activities, start-up activities and an update on any changes in external conditions that may affect the project. It will also include a detailed budgeted annual working plan for the first year and a detailed monitoring plan including indicators.

**Annual Budgeted Work Program planning**

The Regionalsecretariat for project coordination, with the support of the national coordination units, will submit to the Project Steering Committee (PSC) a complete Annual Budgeted Work Program (ABWP). The ABWP should include detailed activities to be performed for each of the project outcomes during the year, steps, dates and milestones, as well as the performance indicators. A detailed budget for the project activities to be undertaken during the year, as well as all monitoring and necessary supervision activities will also be included. The ABWP will be presented to the Project Steering Committee for approval.

**Field visit**

The members of the project coordination units (regional and national units) and BOAD will conduct regular visits to the subproject sites according to the agreed schedule in the project's annual work plan to evaluate the progress of the project. During the visits, the coordination units can adapt the subprojects activities to the new field realities, if any. The ABWP as well as the monitoring and evaluation indicators will be modified accordingly.

***Output 1.3.2.*** *Project Monitoring and evaluation*

A monitoring and evaluation of project activities will be set up to assess progress regarding the objectives and outcomes outlined in the project document. It will allow the identification of strengths and weaknesses in order to make timely informed decisions. Monitoring will focus on the implementation of project activities and will be based on the measurement of progress at each critical stage of the process. The project will introduce a gender disaggregated system of data collection and reporting for each project component, according to the gender integration into waste management.

The Monitoring and Evaluation scheme will be designed to capture the implementation rate against planned targets and objectives, as set out by the project design. It will be improved with the adaptive management by the project regional and national management Units and reflected in the annual budgeted work program (ABWP) and would monitor: (i) the financial information of the proposed project; (ii) the systematic recording and reporting of progress against planned project targets; and (iii) the assessment of the impact of project activities on the target group and the environment.

The Monitoring and Evaluation of the project achievements and knowledge management will be the responsibility of the Regional project coordination secretariat (RPCS) with the support of the National project management units (NPMU). Indeed, monitoring and evaluation will be conducted at country level and data compiled at the regional level. The result-based approach will be adopted, involving: (i) regular registration and assessment of progress against the objectives of the ABWP; (ii) regular and periodic evaluations of the evolution of impacts on beneficiaries.

At the beginning of the project, a strong and clearly defined M&E function will be established. M&E system will be based on objectives and indicators established in the context of the results framework of the project. Monitoring and evaluation activities will follow the relevant GEF policies and guidelines as well as those of the BOAD. Monitoring and evaluation system will facilitate learning, replication and scaling up of the results and lessons learned from the project.

Progress will be checked through the Annual evaluation, the Mid-term evaluation, the Independent Final Evaluation and the Ex-post evaluation. Beyond this, a monitoring and evaluation (M&E) program, in accordance with GEF and BOAD procedures will be carried out by the BOAD Organizational Unit in charge of M&E in collaboration with its BOAD's Project team and BOAD's Directorate of environment and climate change. The BOAD will report to GEF secretariat in accordance with the GEF's Policies, Guidelines and procedures.

Several participatory tools will be used to measure project performance. Additional effect/impacts surveys (start, mid-term and completion) and analysis of technical, annual economic and financial performance will measure the project's impact for beneficiaries.

Quantitative targets will be approved by the project partners when reviewing the logical framework according to the approved adaptive approach. A midterm review and a final evaluation are planned in order to assess the changes observed at baseline[[1]](#footnote-1). The M&E system will support decision-making for the adoption of waste management activities for future projects.

The M&E tools will be developed based on existing operational arrangements and the level of ongoing projects (survey sheet, further investigation to assess the effects/impact, monitoring sheets of activities, thematic studies, nominative targeting system, waste management monitoring system, environmental and social impact, dashboards). A synergy will be developed between the present project and other related projects/programs in the 6 beneficiary countries.

The monitoring and evaluation will be done through:

* Balance sheet and programming meetings with grassroots actors;
* Weekly Points, biannual and annual reviews at the project team level;
* Field visits.

During the monitoring and evaluation process, all reports prepared by the regional coordination and approved by the project steering committee will be sent to the BOAD which will transmit them to the GEF, if required. Reports that are prepared by the regional coordination, specifically in the context of the monitoring and evaluation plan, are as follows:

* the report of the projectlaunch workshop;
* the annual budgeted work programs;
* the half-yearly reports;
* the annual management reports;
* the technical reports; and
* the final report.

The schedule for the monitoring and evaluation activities implementation is presented below.

Tale 1: Monitoring and evaluation Schedule

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | | Year 5 | | | | Year 6 | Year 7 |
| **Trimester** | T1 | T2 | T3 | T4 | T1 | T2 | T3 | T4 | T1 | T2 | T3 | T4 | T1 | T2 | T3 | T4 | T1 | T2 | T3 | T4 |  |  |
| Elaboration and validation of the Annual Work Program Budgeted |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Field impact monitoring and progress evaluation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Half-yearly progress report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Technical and financial reports |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Mid-term evaluation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Count Audit |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lessons learned capitalization with a scaling up project formulation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Final Evaluation and report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ex-post Evaluation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

***Output 1.3.3.*** *Lessons learned from the project disseminated for replication purposes*

Learning and knowledge management is an integral part of all project activities and is coordinated through Outcome 1.2 (Capacity for sharing experiences and expertise on sustainable waste management in place and strengthened). The knowledge produced by the project will be disseminated through manuals, toolkits, websites, press media, calendars, conference presentations, scientific publications, etc.. This dissemination will promote national and sub-regional communication and knowledge exchange with the following objectives:

strengthening the efficiency and effectiveness of sustainable waste management in WAEMU countries, mainly with regard to the reduction of UPOPs, mercury and GHG ;

improving multilevel and multi-stakeholder collaboration, and therefore learning, across the major project activity groups.

Tailoredcommunication materials will be produced for specific target groups (policy makers, municipalities, SMEs involved in sustainable waste management, MFIs, hospitals and health centers, NGOs, the scientific community, schools, etc.).

In Component 2, existing BAT / BEP activities for sustainable waste management will generate knowledge that will be shared and disseminated across different channels.

In order to better assimilate the lessons learned by the beneficiary households, which may include a large number of illiterates, the documented lessons to be implemented at their level will be translated into the local language, according to regions and countries, and produced under the form of illustrative images easily understandable. In addition, a radio program in local languages ​​will be set up. Beneficiary household representatives will participate in specific knowledge sharing meetings and lessons learned from the project to readjust the project if necessary.

Technicians trained through capacity building activities in Component 1 and 2 will support knowledge dissemination and help understanding stakeholder apprehension in the project's approaches on sustainable waste management. The project's monitoring and evaluation (M&E) system, including community information, will make a significant contribution to improving the efficiency of technologies in cities, thus providing additional information for scaling up sustainable waste management in the WAEMU countries and cities.

As part of the capacity building for the research of innovative initiatives for waste management in the WAEMU space, the project will sponsor students for their dissertations and theses in the field. Five (05) subjects including three (03) professional masters and two (02) thesis will be retained per country. A call for applications will be launched in each beneficiary country in the first year of the project, in order to select the best topics. The topics will be oriented towards the capitalization of existing practices and their improvement in a context of innovation. The results of the dissertation and dissertation work will be available from the third year of the project and will help to improve or adapt certain practices or methods of waste management to ensure its sustainability.

The project team will disseminate knowledge about technologies, processes in West Africa and Africa. Other outreach activities may also be held at national interministerial meetings, mayors' meetings, the African Ministerial Conference on the Environment (AMCEN), and the Conference of the Parties to the Stockholm, Minamata and climate change international Conventions. Potential partnerships with key international knowledge management systems, such as the Climate Technology Center and Network (CTCN), will be considered in line with GEF communication strategies to support the sharing and dissemination of information. International organizations with existing sustainable waste management platforms will be contacted.

After the mid-term evaluation, the lessons learned will be compiled to formulate a regional scaling-up project. Two or three other cities may be targeted in each country for waste management and landfill construction. Donors will be solicited for the development of these spin-off project.

**Component 2: Development of national and local capacities for the promotion of best available techniques and best environmental practices (BAT/BEP) in waste management for reducing emissions of UPOPs and mercury**

This component aims to strengthen national and local capacities for sustainable solid waste management in beneficiary countries. Its implementation will: (i) strengthen the legal and technical framework for the reduction of UPOP, POPs and mercury emissions; (ii) strengthen the technical capacities of public and private actors for sustainable waste management; and (iii) educate and sensitize stakeholders involved in the production, collection and recycling of waste in beneficiary countries.

Outcome 2.1:  Strengthening the institutional, administrative, legal, technical and regulatory framework for reducing UPOPs and mercury emissions.

This result will be achieved through the implementation of 5 outputs: (i) Regulatory frameworks for controlling the generation of UPOPs and the handling of mercury containing equipment are in place; (ii) and (iii) Education and training programs for environmental and health authorities on the negative impacts of UPOPs and measures to prevent their generation are established to promote the reduction of use and releases of Mercury in the domestic products and the health sector; (iv) Increased capacity of the country for the development of monitoring programs to control the generation of UPOPs and other POPs.

***Output 2.1.1*** *Regulatory frameworks for controlling the generation of UPOPs and the handling of mercury containing equipment are in place*

Project countries will undertake an evaluation of the efficacy of the laws and policies to manage releases of unintentionally produced POPs. This will be followed by the adoption of legislative and/or administrative measures to manage wastes, including products and articles upon becoming wastes, as described in paragraph (d) of Article 6 of Stockholm Convention and the introduction of requirements for use of Best Available Techniques (BAT) /and/or Best Environmental Practices (BEP).

The revised texts will be validated through national workshops in each beneficiary country. Technical assistance will also be provided for the effective implementation of the revised texts with a view to reducing emissions of POPs and Mercury.

***Output 2.1.2*** *Education and training programs for environmental and health authorities on the negative impacts of environmental pollutants and UPOPs and measures to prevent their generation are established to promote the reduction*

These activities will consist of: (i) the development of an education program on risks, impacts and control measures for local authorities (government, municipalities and parliament) in charge of the environment and health; (ii) the organization of training and education sessions for practitioners in the project's beneficiary cities to promote emission reduction practices; (iii) conducting a sensitization campaign of local authorities in the secondary cities of the project's intervention countries. These activities should raise the awareness of the authorities and involve them more in programs to reduce pollutants emissions in general and UPOPs particularly.

All communication material on the project will bear the logos of the beneficiary municipalities, the GEF and the Implementation Entity (BOAD).

The National Project Management Units will benefit from the technical assistance of a Consultant recruited for the execution of the activity.

*Output 2 1 3: Education and training programme for environmental and health authorities to promote chemicals safety and reduce or eliminate use and releases of Mercury and POPs pesticides in the sectors covered by the project.*

This education and training program is complementary to the program of the output 2.1.2 above. This program will focus on the negative impacts of mercury, POPs and other hazardous chemicals on health and the environment and will organize training and education sessions in the project's beneficiary cities to understand the negative impacts of hazardous substances, especially mercury and POPs and to promote pollution reduction practices. These activities should raise the awareness of the authorities and involve them more in programs to reduce Mercury and POPs use, and to promote the implementation of chemicals conventions. All communication material on the project will bear the logos of the beneficiary municipalities, the GEF and the Implementation Entity (BOAD). The National Project Management Units will benefit from the technical assistance of a Consultant recruited for the execution of the activity.

***Output 2.1.4:*** *Increased capacity of the country for the development of monitoring programs to control the generation of UPOP and elimination of POPs and mercury*

This activity will consist of developing or strengthening the UPOP and POP emissions monitoring and control program in each country of intervention through close cooperation with the Stockholm Convention Global Monitoring Plan. Information collected at wastes dumpsites on wastes quantities, wastes chemicals identified as well as uncontrolled burning avoided will be used to update POPs Monitoring data. In this respect, the texts in place for the elimination of dangerous and polluting products will be re-examined and completed. Hence, the project will assist Stockholm and Minamata Convention Focal Points in the beneficiary countries for the strengthening of National Inventories and National Reporting under the Conventions. Once the program has been established, dissemination and technical capacity-building workshops will be organized for local and national stakeholders in charge of waste management.

The project will collaborate with the Laboratories already engaged in the framework of the Global Monitoring Program (GMP). The Laboratories will support the UPOP and POP emission control and monitoring program. These Laboratories will also intervene in quality control of waste to be recycled and the products valorized by the micro-enterprises (Outcome 4.2 and Output 3.2.2).

In view of the shortage of POPs disposal technologies and techniques in the countries of intervention, the project will coordinate with ongoing POPs elimination projects in beneficiary countries to access secure and compartmentalized stores where POPs-containing equipment, transformers, batteries, obsolete pesticides, electronic equipment, will be transferred when identified during the sorting of municipal wastes. When an object is identified as a hazardous or polluting product, it will be processed and / or disposed of by the national and/or international institutions dedicated to it. Environmental services with the support of all the services or companies involved in the production or control of these polluting objects and products will ensure their elimination. In this respect, the texts in place for the elimination of dangerous and polluting products will be re-examined and completed.

Outcome 2.2: Strengthened institutional, regulatory, technical and fund mobilization, capacities of public and private sector companies for sustainable waste management.

To achieve this outcome, it is planned to strengthen municipalities and other communal and national waste management units. Laws regulating waste control and management services will be reviewed or developed, and emission standards and regulations for a sustainable management of waste including (UPOPs, mercury and hazardous chemical waste) will be updated.

***Output 2.2.1:*** *Strengthening of municipalities and other communal and national waste management units*

For the purpose of efficient management and rapid ownership of project activities at the national level, a National Project Management Unit (NPMU) will be established in each beneficiary country. These units under the tutelage of the beneficiary municipalities of the project will always be integral parts of the municipalities and considered as national representations of the Regional Coordination Secretariat of the project established under Output 1.1.1. The organization and functioning of the NPMU, 6 in number, are made in such a way that the execution of the project activities is considered as a traditional mission of the municipalities. The members of these Units will therefore receive compensation in addition to their salaries paid by the municipalities. This compensation will be supported by co-financers according to the GEF guidelines[[2]](#footnote-2). Each NPMU will be equipped with a pick-up vehicle to facilitate their intervention in the field. The purchase of these vehicles will be supported by the fund of co-financiers.

The national coordination units will be responsible for, inter alia: (i) coordinating project activities at the national level; (ii) provide technical liaison with the Regional Secretariat for good coordination between the national and regional levels; (iii) support the Regional Secretariat in managing the overall quality and timely delivery of project results at the local level; (iv) program and monitor capacity building activities at the national level; (v) to select the SMEs/EIGs that will be involved in the recovery and recycling of waste with the support of the Regional Secretariat; (vi) organize the studies, the mobilization of experts and engineers and the control and monitoring of the construction of the landfills. The composition and organization of the national coordination units are detailed in A.6.

To ensure sustainable management of waste and sustain the actions at the national level, the capacity of municipalities and other structures in charge of urban waste management will be strengthened through national workshops. The working groups and forum established will advise the national waste management coordination units. In the context of the outputs 1.1.2, 1.1.3 and 2.2.2, financial and economic capacities, laws and policies regulating waste control and management services including the environmental police or health services will be reviewed, developed and implemented.

***Output 2.2.2:*** *Updating and/or enhancing regulatory texts and pollutants emission standards (UPOPs, mercury and hazardous chemical waste) to guide and monitor the improvement of waste management practices*

Using existing material such as the Guidelines on best available techniques and provisional guidance on best environmental practices relevant to Article 5 and Annex C of the Stockholm Convention on Persistent Organic Pollutants and those under Minamata Convention, tailored information will be developed to manage wastes in a sound manner and to minimize the releases of UPOPs and mercury. The strategies that will be developed in this project will be supplemented by framework directives and standards for the management of certain types of waste, where necessary, including: (a) a framework directive on the treatment and recycling of plastic waste; (b) a framework directive on the recovery and recycling of electrical and electronic equipment waste; (c) a framework directive on the disposal of medical waste; (d) a framework directive on the reducing or eliminating POPS, and; (e) a framework directive on the handling and control of mercury and other heavy metals.

In order to build regional and ongoing capacity, exploit synergies and achieve economies of scale in the field, the Regional Coordinating Secretariat will prepare basic texts that will be adapted and adopted at the national level.

***Output 2.2.3****: Organization of the sorting at the source and collection of waste and promotion of BAT and BEP approaches for Hazardous Chemicals and Wastes Management aimed at reducing UPOPs and mercury releases are organized*

To strengthen strategy and guidelines, the project will update waste production data in participating cities (characterization, projection of the annual quantities expected, important issues requiring a regional reflection, etc.). The initial data collection during the preparation of the Full-Size Project provided estimation of wastes statistic data; however, this must be verified at the inception of the project to clearly define the scope. The composition of wastes particularly in organic matters will be specified in each city and the methanisation potential of waste. The FSP preparation uncovered the prevailing problems in project cities and identified private and public actors that can be strengthened for sustainable wastes management. The quantity of mercury and POPs that can be mobilized and treated as part of the project as well as quantities of UPOPs and GHG that can be avoided have been analysed and roughly quantified. The project in its initial phase will also need to specify these quantities.

Given that, sand can account for up to 50% of the weight of waste in some cities, this study will provide measures to encourage households to avoid the sand of their waste.

Through information and communication activities households will receive knowledge and techniques necessary to carry out preliminary sorting. To encourage pre-sorting by households, color trays, preferably bins from the recycling of plastic waste under the project, will be proposed. In total, 10,000 bins of different color will be acquired by city. Communication and awareness activities will be undertaken for efficient sorting and use of bins.

Recyclable waste will be quantified by enterprises or micro-businesses responsible for the collection of household waste and valued monetarily for households that are interested in sorting. The corresponding returns will be deducted from the royalties that households will have to pay for collection services or granted as commodities such as household equipment from recycled material. Waste collected will be sorted by categories and transported to the sorting centres where recycling companies will be able to obtain secondary raw materials. Non-recyclable waste will be conveyed to the technical landfill centres.

Given that POPs and mercury are governed by international agreements and require high-tech solutions for their treatment and elimination, the project will identify on-going projects for coordinated approach and if required businesses/companies who have demonstrated their abilities in these areas. A specification and a code of good conduct will be developed and made available to collectors.

In view of the shortage of POPs disposal technologies and techniques in the countries of intervention, the project will coordinate with ongoing POPs elimination projects in beneficiary countries to access secure and compartmentalized stores where POPs-containing equipment, transformers, batteries, obsolete pesticides, electronic equipment, will be transferred when identified during the sorting of municipal wastes. When an object is identified as a hazardous or polluting product, it will be processed and / or disposed of by the national and / or international institutions dedicated to it. Environmental services with the support of all the services or companies involved in the production or control of these polluting objects and products will ensure their elimination.

Outcome 2.3: Populations and stakeholders operating in waste production, collection and treatment are sensitized and use best practices in the area

To achieve this outcome, planned outputs are : (i) implementation of an information and communication programme targeted to municipalities, national authorities, households and schools to promote good practices of source reduction and waste treatment; (ii) establishment and operationalization of an ENVIRO-Mobile learning in each participating city; and (iii) implementation of demonstration activities for reduction at source/introduction of new technologies for the management of certain categories of waste including POPs.

***Output 2.3.1.*** *: Implementation of an information and communication programme targeted to municipalities, national authorities, households and schools to promote good practices of source reduction and waste treatment.*

The aim is to adequately inform and engage all actors in the waste chain of good practices for sustainable waste management. The goals will be to raise awareness on the problems connected to poor waste management; to build knowledge on approaches and practices for sound management; to communicate the benefits of sound management and wastes valuation through sorting. The communication program will cover the different types of wastes streams as well as specificities related to the practices when faced with harmful chemicals and waste. Target populations are schools, health centres, municipalities and government offices. Various types of media will be considered in national and local languages including television, radio, journals and advertising posters and pamphlets. Audio-visual information and messages will focus on the consequences of poor management of harmful chemicals and waste, good practices of wastes management and recovery, as well as their importance in the preservation of the environment and human health as well as their potential for job creation. Thematic comics as well as toys made from the recovery of the waste will be developed and made available to school; this will help sensitization of children. Other educational programmes on the sound management of wastes and harmful substances will be introduced into the curricula. Dedicated leaflets on good practices in biomedical waste management will be developed for health centres.

The information and communication programme will be developed by experts and implemented by the National Project Management Unit in each country of operation. Outreach activities in schools and households will be entrusted to NGOs / Associations who have proven their ability to mobilize and conduct awareness-raising activities. These NGOs / Associations will be selected on the basis of a shortlist established in the project countries according to criteria clearly defined by the National Project Management Unit of each country.

Awareness-raising activities to promote sustainable waste management in schools will be entrusted to primary and secondary school teachers with the support of national directorates of the first, second and third grades of general education and technical training, as well as local and regional education inspectors. To this end, education specialists will be invited, in the first year of the project, to a national workshop to design the integration of sustainable waste management and environment in the educational programs. The documents will be printed and distributed in up to 5% of the schools of the project cities and in some schools of the communities and villages surrounding project cities. Teachers will be trained to use these documents. When the inspectors judge this successful outreach at the end of the fourth year, a large-scale project will be set up to integrate sustainable waste management and environment issues into school curricula in public and private institutions at all levels of national education.

***Output 2.3.2:*** *Establishment and operationalization of an ENVIRO-Mobile learning in each participating city*

As communication is important in the area of waste, a road programme involving 1 to 5 buses (depending on the city) designated by "ENVIRO-Mobile" will be implemented as part of an educational tour in each project city and its surrounding municipalities and villages. The enviro-mobile is an environmental education but also awareness tool for the local populations on the various risks and impacts of the mismanagement of harmful chemicals and waste. It will serve to accelerate the adoption of good waste management practices by local communities. This tool will be implemented by a team including an environmentalist and an audio-visual specialist in 2 steps: (a) the conception of a film about the process of waste management and recovery; participatory identification of the causes and consequences of poor waste management; lessons learned and participatory planning of the priority waste management actions at the local level; (b) the projection of the film on sustainable waste management system, the dissemination of posters and flyers in the  project city, communities and villages surrounding the project cities, schools and health centres. This will raise awareness of at least 50 additional municipalities and 500 villages, or about 300 000 people in each country on risks and impacts of poor waste management and simple and good practices to encourage sound management of harmful chemicals and waste.

A call for projects will be launched for a public-private partnership with NGOs with proven experience in the field of environmental awareness and communication and specifically sustainable waste management. This partnership will be designed with the aim of strengthening units in charge of awareness and communication in the beneficiary municipalities and thus enable them to take charge of the ENVIRO Mobile activities.

***Output 2.3.3. :*** *Implementation of at least 50 to 100 demonstration activities for reduction at source/introduction of new technologies for the management of certain categories of waste including POPs*

As part of the project, and in accordance with the proposals of the mid-term technical workshop, a country demonstration program including 50 to 100 activities to be financed will be implemented. The activity consists of targeting pilot neighbourhoods in each beneficiary city and introducing the best waste management techniques from sorting at source to their recycling / valorisation and / or disposal.

|  |  |
| --- | --- |
| Figure 2: Concept of integrated solid waste management | The project will use UNEP guidance for integrated solid waste management (ISWM) taking a comprehensive approach across solid waste streams from generation to disposal. The most appropriate waste management systems and sustainable technologies will be selected to deliver an optimum and sustainable ISWM system in combination with economic and social considerations. The experiences gained and the lessons learned from the implementation of these demonstration programs will strengthen actions and extend them to other neighbourhoods in the beneficiary cities and then to other cities in the country.  If necessary, the municipalities will seek partnerships with private companies preferably from WAEMU countries and if possible, from Africa for the development of demonstration projects. The design of the demonstration program with BAT/BEP adapted to each selected Pilot zone will be ensured by a firm and coordinated by the NPMU with the support of the RPCS. |

**Component 3: Organizational, technical and financial support to micro-enterprises operating in the waste sector**

This component aims to put in place a mechanism for sustainable funding of waste management in project countries. Two (02) results are expected as part of the implementation of this component: (i) Organizational, and technical capacities of micro-businesses strengthened for the promotion of innovative practices in the waste sector ; and (ii) Sustainable financing of the waste sector strengthened and developed.

Outcome 3.1: Organizational, and technical capacities of micro-businesses strengthened for the promotion of innovative practices in the waste sector.

To achieved this outcome, proposed activities include: (i) installation of 6 unique national "green" windows to support capacity development of the informal sector and the creation micro companies to manage and recycle waste in each beneficiary country; (ii) technical capacity-building and improvement of the practices of SMEs, associations, etc. of the waste sector; and (iii) Development of a mechanism for certification and granting of approvals to micro-enterprises with technical and operational capacities for collection, treatment and recycling of waste.

***Output 3.1.1:*** *Installation of 6 unique national "green" windows to support capacity development of the informal sector and the creation of micro companies to manage and recycle waste in each beneficiary country*

Financial support to microenterprises and SMEs involved in waste management will be through the establishment of a Green Window (GW).

Green Windows mission statement

Green Windows are a convener for stakeholders engaged or with interest or expertise in waste management activity. Stakeholders include waste generators, waste management organizations, universities, industries associations, non-governmental organizations and financing institutions.

Hosted at the level project country government institution which has a similar missions, they ensure complementarities and synergies with existing private sector engagement initiatives and financing and capacity building mechanisms within the project country.

Hosted at the project country government level, Green Windows work at tools to execute policy and regulatory reforms designed to alleviate systemic barriers to private investment.

Green Windows TORs (the details is presented in Annex M)

The Green Windows" will be established by default within the ministry of the environment, or, should it not be feasible, within an agency or ministry of the participating countries that will meet the following characteristics and capacity :

* the capacity to act as a "clearing house" and database of existing national projects and initiatives aimed at encouraging entrepreneurship. For example, the initiatives of the National Environmental Fund and the National Environmental Management Agency in Benin and Togo;
* maintain and develop a waste management stakeholders network necessary for the creation of an eco-system favorable to the creation of business and the support of SMEs in the waste management sector, including, but not limited to universities, technical institutes, associations engineers, associations of private sector actors, investment funds and banks ;
* ability to manage a program of identification and support of startups, EIGs and SMEs in the field of sustainable waste management (recycling, recovery of waste etc.), with the help of partners of the eco-system of each country (banks, universities, etc.) ;
* ability to provide access to finance to waste management entrepreneurs, EIGs and SMEs via microfinance institutions;
* ability to provide training, assistance and advice to EIGs and SMEs in the waste management sector according to the objectives and criteria developed within the project.

The Green Window will be a mechanism that addresses two national challenges: (i) strengthening the public sector in terms of mobilizing and financing the environment; (ii) strengthening the technical and financial capacities of private finance to ensure a multiplier effect of investments through, ultimately, the strong involvement of private finance in the financing of projects with environmental and social impact, especially in the management of POPs, mercury, climate change and household waste. To make the Green Window a sustainable financial mechanism, it will be integrated with an already established national institution with similar missions for the management and / or operational financing of environmental projects. This Green Window will complement and consolidate the sustainable financing mechanism for waste management, based on the reorganization of taxation and waste management fees (Output 1.1.3). It will provide financial and technical support to these microenterprises.

Financing through Green Window will be in the form of subsidies, microcredit or guarantees depending on the type of micro-projects. The Regional Project Coordination Secretariat (RPCS), in collaboration with the agencies responsible for managing the Green Window, will develop a manual of procedures for the management of these funds. Each national agency responsible for the management of the Green Window, will select with the support of the RPCS and the National Project Management Units (NPMU) microfinance institutions (MFIs) with proven experience in the field based on criteria established by the the coordination. The MFIs selected for this project will contribute to the adoption of the green box management procedures manual.

Two groups of micro-projects can be distinguished: (i) micro-projects with a high overall environmental benefit of reducing POPs and Mercury with a low economic benefit; (ii) micro-projects with medium or low overall environmental benefits of POPs and Mercury reduction with a strong socio-economic benefit. In the first case, part of the cost of the micro-project will be subsidized in the form of incremental costs and the other part in the form of a loan. The ceiling or percentage of the subsidy and the interest rate of the loan will be determined in the Green Window procedure manual. For the second group of microprojects, a loan will be granted and the interest rate to be applied will also be determined by the study cited. Management fees are provided to facilitate the work of the Green Window.

A Green Window will be established in each beneficiary country. After consultation with the various stakeholders, it was decided that the Green Window will be housed with the National Environmental Fund (FNE) in Benin, the Environmental Intervention Fund (FIE) in Burkina Faso, the Agency for Environment and Sustainable Development (AEDD) in Mali, the National Council for the Environment and Sustainable Development (CNEDD) in Niger, the Basel Convention Center in Senegal and the National Agency for Environment (ANGE) in Togo.

The Green Window will support MFIs in the selection and evaluation of projects submitted to them by SMEs / EIGs. Whenever necessary, the Green Window will use the expertise of the Municiaplity’s Technical Services Department, the Environmental and Social Impact Assessment Office, the GEF Operational Focal Point, the Focal Points of Stockholm, Minamata and climate change.

A framework contract, setting out modalities for financing and managing the financial support to be granted to SMEs / EIGs, will be signed between the National Project Coordinator and the Director of the Agency hosting the Green Window. The Director of the Agency hosting the Green Window will sign all financing contracts for SMEs / EIGs through MFIs.

As part of the analysis of SME / EIG project files, the Green Window will undertake or facilitate the analysis of environmental issues that have not been appreciated by impact studies especially with relations to POPs, Mercury and GHGs.. The MFI will provide the usual evaluation it undertakes for financing any type of project. This will ensure that the project has environmental, social and economic benefits and that the SME / EIGs are able to repay the loan and continue the activities after the closure of the regional project.

The incremental costs will be evaluated by the Green Window and supported in the project financing in the form of grant but will pass through the MFI. Other costs will be covered by the Green Window, in the form of a loan or guarantee to the MFI, if the MFI requests it to complete the financing of the project. The interest rates for the loans and guarantee to be set up by the Green Window for the benefit of the MFI and by the MFI for SMEs / EIGs will be studied with the MFIs in the framework of the preparation of a Manual of Management Procedures so as to have an interesting exit rate for companies.

The Green Window will have the following missions:

* strengthen the capacity of the private finance sector in environmental assessment and interest in financing projects with high environmental and social impact;
* support the National and Regional Project Coordination Units in the selection of MFIs, after related study and call for projects;
* promote an environment conducive to the development and involvement of SMEs / EIGs, universities and research centers, associations, start-ups, financial institutions in the sustainable management of waste;
* provide assistance, advice to SMEs / EIGs and associations wishing to benefit from the financial support of the project ;
* make available to the interested public, information and data on innovative projects in the field of recycling and recovery of waste for disposal / reduction of POPs, mercury and the reduction of greenhouse gas emissions ;
* set up a partnership contract with the project coordination for the financing of SMEs / EIGs;
* launch calls for projects every year once resources are available;
* carry out the scientific evaluation of the projects to be submitted for financing by SMEs / EIG;
* select and recommend to MFIs projects with environmental and social impact as specified in the CEO Endorsement to be financed ;
* define with MFIs and project promoters the financing arrangements for selected projects;
* sign contracts with selected MFIs for project financing;
* provide MFIs with the necessary financial resources to finance selected projects;
* audit MFIs on the use of the funds received;
* monitor and evaluate, in collaboration with the services of the City Hall and the MFIs, the implementation of the projects financed by the Green Window;
* proceed to the certification of SMEs / EIGs working in the waste and environmental sector;
* put in place a process to allow the producers of e-waste to pay their pollution using the international procedure as SGS RENOVO® SOLUTION (see annex L) ;
* take over and manage the funds reimbursed by SMEs / EIGs through MFIs to finance new projects with a high environmental and social impact with the resources obtained;
* ensure the sustainability of resources received from the project in a context of sustainability of funding, even after the closure of the project.

The Green Window will report to the National Project Management Unit (NPMU), which in turn will report to the Regional Project Coordination Secretariat (RPCS), on the use of resources made available to it. The Green Window mechanism and the process of selection and financing of SMEs / EIGs are presented in the table below.

Green Windows’”startup cost”:

In order to ensure smooth and efficient start, the Green Window will receive logistic and human resource support at the initiation of the project. In each country the human resource support will comprise two recruitments. The first is internal transfer of the Green Window’s host agency existing staff who will dedicate part of her/his time to manage the Green Window operations. The second is an external recruitment of a part-time qualified consultant who will conduct an initial screening of the funding requests from SMEs before they are submitted for review to the investment decision panel.

Both recruitments are budgeted as follow:

1. Part time Green Window’s host agency existing staff: a range from $20,000-$25,000;
2. Part time consultant for initial financial review of SMEs request for funding: a range from $30,000-$35,000.

This costs are integrated in the budget of component 3 (cf. line 3.1.1.2. and 3.1.1.3).

Table 3: Green Window Mechanism

| **Stages** | **Mission** | **Duration** | **Responsible** |
| --- | --- | --- | --- |
| **01** | Preparation, negotiation and signing of a contract between the National Project Management Unit and the GW to mobilize dedicated resources | 1 month | NPMU/GW |
| **02** | Selection of Microfinance Institutions (MFIs) on Call for Projects | 3 months | RPCS/GW |
| **03** | Public information on existing facilities and selected MFIs for project financing | Continued | GW |
| **04** | Preparation, negotiation and signing of a framework contract between MFIs and the Green Window (GW) | 1 month | GW/MFIs |
| **05** | Establishment of a fund management procedures manual and elaboration of the terms of the project call for proposals | 2 months | RPCS/NPMU/GW |
| **06** | Call for proposals for projects in collaboration with selected MFIs | 20 days | GW |
| **07** | Formulation of feasibility and environmental studies of projects | 2 months | SMEs |
| **08** | Submission of feasibility studies and environmental and social impact assessment (ESIA) of projects to MFIs | 2 months | SMEs/GW |
| **09** | Project evaluation (profitability, return on investment, financial and environmental risks, incremental costs ...) by MFIs with the support of the Green Window | 15 days | MFIs |
| **10** | Request from the MFI to the Green Window for setting up grants / externalities, guarantees or loans | 5 days | MFIs |
| **11** | Conclusion with the MFIs of the loan repayment plan by SMEs / EIGs and retrocession (repayment of resources allocated) of resources by the MFIs to the Green Window | 5 days | GW |
| **12** | Disbursement of funds from BOAD to the benefit of the MFI | 20 days | GW/BOAD |
| **13** | Establishment of funding in accordance with the findings of the project evaluation by the MFI | 5 days | MFIs |
| **14** | Green Window support to the MFI for monitoring the implementation of the project | During the implementation and closure of the project | GW |
| **15** | Repayment of the loan by the SME / EIGs to the MFI | During the implementation of the project | SMEs/EIGs |
| **16** | Repayment by the MFI at the Green Window of the resources used affected by the Green Window to pay off the loans and guarantees | As and when reimbursements by SMEs/EIGs | MFIs |
| **17** | Submission of the report on the management of funds to the National Project Management Unit (NPMU) | Every 3 months | GW |
| **18** | Use of resources to finance new projects with high environmental and social impact | Continuous | GW |

In order to guarantee the efficiency of the activity, the resources will go, first and foremost, to women and youth companies engaged in the collection, recycling and recovery of waste. The repayment of loans granted to SMEs / EIGs under the project will benefit the Green Window and continue to feed these windows to extend funding to other SMEs / EIGs engaged in the management of POPs, UPOPs, mercury, climate and the environment in relation to waste management. This will make it possible to perpetuate the Green Windows. Beneficiary States will be able to strengthen the financial capacities of these windows in order to contribute more to the sustainability of these types of financing.

***Output 3.1.2****: Technical capacity-building and improvement of the practices of SMEs, associations, etc. of the waste sector*

This activity will strengthen SMEs’ technical capacities. The project should thus complement policies or strategies for the improvement of waste management practices through the promotion of public-private cooperation. Several associations with active women in the cleaning, collection and treatment of waste are operational. During the PPG phase meetings in project cities, these women's groups showed readiness to take up the challenges. These operators and SMEs will be particularly targeted by the project for technical capacity building to improve their field operations. Through the project information platform, SMEs, entrepreneurs, investors, businesses, and commercial partners will be linked up, with the aim of promoting capacity development, funding and market development to SMEs, with a view of encouraging innovative technologies and facilitating the creation of SMEs, in particular those originated from the informal sector.

Green Windows’ resources availability and continued engagements with relevant national government agencies, municipalities, the private sector and other relevant stakeholders will be instrumental in fostering public-private cooperation on improvement of waste management practices and capacity building. By pooling the needs and characteristics of waste collection and treatment SMEs and EIGs, the Green Windows, working in close collaboration with the municipalities, will be best positioned to facilitate training workshops in each project’s cities. These one to two-day training events will have at the core of their agenda business management in the area of waste management and technical requirements for sound waste management, such as safety training and equipment.

A network of waste collectors and recyclers will be established, and market instruments identified to assist them.

Existing experiences in project countries in the field of wastes recycling and volarisation will be considered for enhancement.

* In Mali and Niger pilot production of paving stones from plastic waste has been undertaken and during the PPG phase meetings in project cities, areas where improved technologies can be adopted for large scale production have been identified.
* In Ouagadougou, plastic waste recycling has been undertaken to manufacture 8,000 plastic waste bins given to Ouagadougou City municipality. The plastic waste was transformed into granules thanks to an unit installed in 2001 by an Italian non-governmental organization (NGO) -- the International Association of Lay Volunteers (LVIA). Plastic waste can be paid by recycling companies at 50-100 CFA francs (about $0.11-0.22) per kilogram. This consists of an additional source of income for women who are active in this field.
* In Senegal, plastic waste is collected and sold to a recycling company, Proplast, that transforms it into commodities, such as buckets, chairs, etc.
* In Lomé, pilot initiatives for the recycling of plastic waste, e-waste and composting are undertaken by NGOs and SMEs, mostly around transit sites and can be strengthened and extended to other areas.

In the context of this project, the Green Windows that will be established and the facilities that will be put in place will provide support to these existing structures and create other micro-enterprises in the beneficiary countries to maximize waste recycling activities with the best BAT and BEP available. This will not only create green jobs and substantial income for women and young people who are heavily involved in these activities, but also significantly reduce the waste destined to the landfills. The reduction of the quantity of wastes will therefore be beneficial for the municipalities in terms of the operating cost of the landfills and will extend the life of said landfills.

***Output 3.1.3:*** *Development of a mechanism for certification and granting of approvals to micro-enterprises with technical and operational capacities for collection, treatment and recycling of waste.*

Given the fact that waste collection remained hitherto in the informal sector, stakeholders will be registered and certified with a view of giving them an exclusive right to operate in the area of waste management. The success incentivizing formalization of the informal sector and the granting of certification and exclusive collection rights is contingent of municipalities undertaking zoning. The example of Lomé, which established a zoning of the city prior to establishing the eight private companies mandated with waste collection.

It is expected that some informal actors in the waste management sector might lack incentives to convert from informal to formal business structures, due to a concern over taxation. The project’s approach will be to incentivize them through financing and training opportunities as well as participation in the Green Windows competition and accelerators.

The project will create sustainable livelihood alternatives for former waste pickers who are at risk of losing their livelihood when dumpsites will be closed. Schemes to exit the sector will be offered to under age pickers, for example, to provide them with a return or access to school.

The Green Windows will be responsible for the certification of SMEs.

Outcome 3.2: Sustainable financing of the waste sector strengthened and developed

The planned activities include: (i) Support to micro-finance institutions and banking institutions in promoting financial support mechanisms tailored to the EIG and micro-companies for equipment procurement, as well as waste collection, treatment and recycling; (ii) Operationalization of micro-loans adapted to the needs of micro-companies for the treatment and recovery of waste; and (iii) Establishment of sustainable financing mechanism for the waste sector.

***Output 3.2.1:*** *Technical support to micro-finance institutions and banking institutions in promoting financial support mechanisms tailored to the EIG and micro-companies for equipment procurement, as well as waste collection, treatment and recycling*

A financial support mechanism for EIGs and micro-companies for the financing of equipment and waste collection and treatment will be implemented with the aim of granting micro-loans to those actively involved in the waste management sector. To achieve that, the finance institutions which will be solicited for the loans will be accompanied and strengthened in mastering the sustainability and the profitability of waste recycling projects. A workshop will be organized in the first six months of the project in each beneficiary country and at the regional level to strengthen the technical capacities of the finance institutions. The consultant who will formulate the Regional study of technical and economic requirements for waste management and sustainable funding for waste collection, sorting and recycling in WAEMU (Output 1.1.4) will give this support. Youth initiatives for job creation carried out in Togo could serve as examples for exploring financing opportunities for micro-enterprises in the other project countries.

This activity will help mitigate a key barriers to wastes management SMEs’ financing by financial institutions. These barriers could be the lack of knowledge and experience about the sector, the fact that many micro-enterprises are rather informal.

Concurrently, participation of financial institutions in the project selection committee will help educate them and the SMEs to increase confidence on waste management sector and facilitate the design and the financing of the subprojects of the SMEs.

***Output  3.2.2:*** *20-30 micro-loans adapted to the needs of micro-enterprises for waste treatment and recycling operationalized in each country*

Through the process described under output 3.1.1., one hundred and fifty (150) SMEs / EIGs will be selected for the six cities of the project. Selected SMEs / EIGs will benefit from micro-loans for the development of waste sorting, recycling and recovery activities in the cities of intervention. They will also benefit from technical support (output 3.1.2) and Green Window advisory support in the implementation of their projects.

Outside the beneficiary cities, SMEs / EIGs from other cities may be supported for sustainable waste management in the event that funding is available.

***Output 3.2.3* :** *Establishment of sustainable financing mechanism for the waste sector*

To ensure a continuous and secure funding beyond the project period, levies will be introduced on electricity, water, of telephone, etc. and eco-taxes on items such as tools, household equipment, mercury containing bulbs, lead and cadmium batteries, torches, medicines, household packaging, etc. in order to provide funds for the sustainability of the actions of the project.

To ensure a consistent, secure and reliable funding for the waste management sector beyond the duration of the project implementation, the introduction of levies and similar taxation-based public funding mechanisms, deducted on electricity, water and telephone bills will be evaluated, as well as eco-taxes on items such as industrial and household equipments, mercury-containing bulbs, lead and cadmium batteries, torches, medicines, household packaging and other goods in order to provide sustainable funding for the waste management sector.

Similarly, direct taxation and various forms of municipal taxes as funding mechanism for the sustainability of the waste management sector will be evaluated in light of, and with the benefits from, the lessons learned from past experiments in the project countries.

Considering the complexity of establishing these taxes and the variability of the problems and solutions in the beneficiary countries, a “white paper” study consisting of a review of public funding mechanisms and the assessment of the ones likely to succede will be undertaken, and implementation options will be explored.

Successful experience in project countries as well as other African countries (such as Tunisia, Rwanda and South Afria) will be considered. The followings measures will be considered among others.

1. Municipal wastes handling tax (paid by populations directly or through electricity or water services bills);
2. Local collectivity taxes paid by companies (% of their turnover);
3. Taxes on production and import of polluting products (plastics, paper, bottles);
4. Hotel tax (1% of hotels' turnover);
5. Tax on the collection of waste treated as household waste for administrations and commerce;  
   Electricity surcharge tax (1/1000th kWh consumed);
6. Return of ecotaxes collected in exporting countries on Electrical and Electronic Equipments.

While considering these measures, country and municipal authorities will take into consideration the following policy and regulatory framework:

1. Centralization vs. decentralization in the public funding of waste management;
2. Financing mechanisms that work for one project country but might not be a good fit for another;
3. Non-financial measures to reduce waste;
4. Measures and policy incentives to improve confidence of the business sector in investing in waste management;
5. Roadblocks to sustainable funding of waste management in project countries;
6. Cost effective technology transfer for waste management between and in project countries.
7. How different are the various approaches to sustainable waste management under discussion in project countries? How much tied to the specific situation and context in each project countries?

Comprehensive solutions with an extensive role in e-waste lifecycle and therefore addressing circular economy concerns, will be evaluated as possible solution to ensure the funding of sustainable waste management in the project countries. These considerations will include services offered by organizations outside the project countries, which provide tools to monitor e-waste transboundary movements for countries that might lack the infrastructure.

This study will be commissioned by the regional coordination as a regional contribution for the project and will be supported by the WAEMU Commission. The authors of this study are project country representatives from the finance ministry, representatives from the project municipalities, and individuals responsible for waste management and infrastructures, such as landfills, in the project municipalities. Under the guidance of a moderator hired by the project secretariat, they will be invited to compare prior, existing or under evaluation funding mechanisms for the waste sector in their country. It is understood that a financing mechanism that works for one project country might not be a good fit for another. A moderator and rapporteur will be hired by the project secretariat to coordinate the study with its authors, the participants from the project countries listed above and in the TORs.

The WAEMU Commission will give support to the project to establish this sustainable financial mechanism for the waste sector in each project country. During this study, discussions will be engaged with the production industries, importers, distributors, services of taxes, customs, communications, water services, electricity, jobs, etc. Various models can be explored, including reflow from loans to SMEs re-invested into SMEs, polluter pay principle, eco-tax, levies by the national electricity or water company, decentralization of the waste collection tax at the level of the municipality, payment of waste disposal fees.

This study is an output of the project. An outline of its terms of references (TORs) are included in Annex N. The cost for the study is integrated in componante 3 budget (cf. line 3.2.3.1).

The venue offered by Component 1 will allow a comparison of each countries practices and options being considered and a search for a best practice.

Online "follow the money" platform:

As noted during the PPG field visits, a successful establishment of sustainable financing mechanism for the waste sector must include transparency and adequate management of the proceeds.

Project countries will consider the set up of an online "follow the money" platform for citizens to know that their municipality is indeed receiving the proceed from the eco-tax and other taxation and levies mechanisms. Similar experiences in other countries will be evaluated in the design of such platform.

**Concession for the construction and operation of landfills**

Project municipalities will consider granting private partners specialized in the construction and operationalization of sanitary landfills contracts through a transparent bidding process, in the search for financially sustainable waste management solutions in areas that are more capital intensive and require more investment and technical know-how.

The participation of the private sector must be incentivized and underpinned by rigorous business models with the prospect of profitability of the required activities for the private sector involved.

The private sector contractors would construct and/or manage the sanitary landfills in the beneficiary municipalities. The financing of the private sector activity will be done through the collection of the municipality's solid waste tax and a payment of a state subsidy in the form of a tax credit. Additional financing models will be explored (see section on the white paper above).

The landfill operator would have a contract for the operation and maintenance of the landfill and equipment over the period agreed with the municipality. This operator may also contract other transport companies to maximize the quantity of waste delivered and would pay "unloading fees" for the waste transported to the landfill.

The contractor will have the right to exploit the landfill gas (LFG) for direct use or electricity production, as well as production of other valuable materials. In this line, municipalities and central government could still paly a support role through facilitation of waste export/import licenses, zoning and authorization, concession and risk mitigation/insurance.

**Central purchasing of waste management equipment**

In the context of public-private collaboration, the involvement of the private sector, which owns know-how and equipment, could help in optimising the impact of the technical assistance that the project intends to provide to microfinance and banking institutions for the promotion of financial support mechanisms adapted to the EIG and micro-enterprises for the acquisition of equipment, collection, treatment and recycling of waste.

In the project plan, the green window established as central tool will support the EIGs/SMEs through training in management and in the acquisition of equipment necessary for the collection, transport and recycling of waste. Collaboration between the green window, banking or microfinance institutions, EIGs and SMEs in need of equipment and the equipment industry will provide a more solid and comprehensive foundation. This collaboration can be further enhanced in the form of a “buyer’s club”, operated by the project secretariat.

The “buyer’s club”’s design will integrate the project country’s government institutions that have jurisdiction and a role in this type of operations, e.g. Caisse des Prets in Tunisia, and cover the acquisition of waste management equipment, the training required for their operation as well as their maintenance and upgrade.

The contracts for the waste management equipment and related services will be awarded to vendors on the basis of an open invitation to tender. The project secretariat will launch and manage the calls for tenders.

The scheme proposed in the project, aims to set up a guarantee fund, micro-loans and subsidies with a financial institution for loans to EIGs and SMEs that have difficulty accessing the traditional financial system. The green window could develop a memorandum of understanding between the financial institution and the equipment industry to ensure that the latter provides the equipment required by SMEs. Vendors will be selected on the basis of an open invitation to tender. The project secretariat will launch a call for tenders, the financial institution would pay the equipment supplier on loans granted to SMEs and would be reimbursed by them according to the usual procedure. The equipment industries involved would undertake to provide, in addition to collection and transport equipment, training and attractive maintenance and guarantee contracts for EIGs. The engagement of African industries from countries facing comparable problems would provide knowledge of national ecosystems, customised equipment and the capacity to provide tailored technical training for equipment operation and maintenance.

**Technical and financial assistance to commercial banks to increase exposure to waste management SMEs**

Historically, commercial banks with operations in West Africa, such as Commercial Bank of Africa (CBA Bank), Coris Bank, EcoBank, Banque Atlantique, Diamond Bank and BGFI Bank have a low exposure to SMEs in general, and waste management SMEs in particular. This is due, in large part, to limited experience to, and financial products for waste management SMEs, because of a lack of collaterals on the part of SMEs. The waste management sector is considered as too risky. As a result, this sector’s SMEs are largely auto-financed or can only access loans with high interest rates (up to 12%).

In addition to the creation of financial products to SMEs through microfinance institutions, the project will also provide technical assistance to commercial banks so that they can eventually complement and follow through the work of microfinance institutions. The objective is an interest rate to waste management SMEs at least equal, and eventually lower, than the current average in the region (10.3%) with a 40 years maturity and 10 years of grace period. To this end, the project will provide technical assistance to build the capacity of commercial banks and enhance their knowledge of the waste management sector and the design of relevant financial products, including loans.

**Component 4: Support for the construction of solid waste treatment and recycling infrastructure in the beneficiary countries**

This component will ensure the construction of solid waste treatment and recycling infrastructure. The cofinancing of the Banks will serve to implement the landfill. In other hand, the municipalities will promote partnerships with private companies preferably from WAEMU countries and if possible, from Africa for these activities.

Outcome 4.1: Improved infrastructure and waste recycling and treatment facilities in the beneficiariy countries.

The project will help participating countries to close small waste dumps in neighborhood, build integrated waste sorting and recycling centers and landfills. In cases where the land will be suitable in the municipalities to accommodate the integrated sorting and recycling centers, these will be built according to the model below.

Storage of parts containing hazardous materials (Mercury, POP, etc.) (Cf. Output 2.1.4)

Ecological elimination

Refusal of recycling and recovery

**Landfill**

Figure 3: Possible layout of Transit Center with waste recovery and recycling units

***Output 4.1.1:*** *Closure and rehabilitation of the small waste dumps in neighborhood*

As underscored in the baseline, poor waste management in beneficiary cities has resulted in the creation of small waste dumps in neighborhood with the associated negative social, environmental and even economic impacts. The purpose of this activity is to close at least 200 of these small waste dumps in neighborhood in the project intervention cities. To this end, the following sub-activities will be conducted: (i) completion of a landfill closure study, in each beneficiary city, based on security options and maximum protection of the environment and human health; (ii) organization of a series of information and sensitization of the operators of pre-collection of waste and riparian populations on the measures of closure of the small waste dumps in neighborhood and by making known to them the transit or transfer centers established for welcome waste now; (iii) recruitment of enterprises for the transfer of waste from the waste dumps to the landfill; (iv) rehabilitation of waste dump sites and the establishment of surveillance and deterrence measures.

These activities will be conducted during the first two years after the start of the project. The 6 main cities (Parakou, Niamey, Ouagadougou, Bamako, Lomé, and Thiès) are concerned by these activities.

***Output 4.1.2:*** *Construction of a landfill, treatment and demonstration sorting facility in Niamey*

This output consists of building a modern landfill in the city of Niamey and integrated sorting and recycling centers around which will develop a waste economy through recycling units. This output is complementary to Output 4.1.1 above. The main activities to be carried out under this output are: (i) the formulation of the technical and environmental studies necessary for the establishment of the landfill and transit centers, in particular a technical-economic and financial feasibility study, an environmental and social impact assessment (ESIA), a Detailed Project Plan (APD in french) and Tender Documents offer (DAO in french); (ii) the construction of the modern landfill and the acquisition and installation of the operational equipment of the landfill; (iii) construction of waste transit centers.

Workshops bringing together all the actors will be organized to validate the studies relating to the landfill and the transit Centers.

With the landfill, there will be, among others: (i) a reception area with offices, changing rooms and toilets for weighbridges, a waiting area for trucks, vehicle parking, washing station wheel; (ii) a waste storage area consisting of bins that are hydraulically independent of one another to limit the production of leachate; (iii) a technical stormwater storage and leachate treatment area of ​​the waste storage area; (iii) an access road to the site and an internal road, etc. The technical studies will specify the dimensioning of these infrastructures.

The Niamey municipality has acquired a domain of 50 ha for the construction of the landfill. It has also sites for the construction of waste transit centers. These lands constitute the counterpart in kind of the municipality under the project framework.

The lockers of the landfill will be dimensioned for an exploitation of at least 30 years. A period that can be extended with the intensification of sorting and recycling / recovery of waste that will reduce the amount of waste to be transported to the landfill. Fifteen (15) transit centers will be built for the benefit of the city according to the standards of protection of the environment and human health. The transit centers will be developed according to the model presented in Figure 3, as possible.

As part of the project, two (02) waste compactor bulldozers for 20 tons will be acquired by the municipality on the landfill.

***Output 4.1.3:*** *Construction of treatment and demonstration sorting facilities in Thiès*

This project plans to build a Landfill and ten (10) integrated waste sorting and recycling centers in Thiès to improve waste management in this city. The city of Thiès has a site of 25 ha programmed to house the Landfill. Technical and environmental studies will be carried out with a view to better dimensioning this Landfill as well as integrated waste sorting and recovery centers. The model presented in Figure 3 will be promoted, if possible. The infrastructures will be sized for a lifetime of at least 30 years.

In order to facilitate the transport of waste to waste sorting and recycling centers and the Landfill, 10 packer bins will be acquired by the municipality. In addition, two (02) sheepsteen bulldozers will be acquired by the municipality for the compaction of waste on the Landfill.

***Output 4.1.4****: Construction of the landfill and infrastructure for treatment and sorting in Bamako*

Bamako has a waste storage center. During the fieldwork, the authorities of Bamako requested the construction of a Landfill for the city because the current storage center does not meet environmental and social standards. As part of the project, it was proposed to build a modern landfill and waste transit centers that meet the standards of environmental protection and human health. The infrastructure will be sized for a 30 years operation. Fifteen (15) integrated waste sorting and recycling centers will be built.

The modern landfill will include the infrastructure mentioned under Output 4.1.2. The transit centers will be developed according to the model presented in Figure 3. Technico-economic, financial, environmental and social feasibility studies will be carried out in order to better dimension the infrastructures of the landfill.

***Output 4.1.5*** *: Construction of sorting and treatment infrastructures in Ouagadougou*

The city of Ouagadougou has a waste treatment and recovery center (CTVD). It is located at the northern boundary of Polesgo, district of Nongre - Maâssom. It was created following the deliberation creating a landfill technical landfill on March 1, 1999 and made functional by the decree to open the CTVD of Ouagadougou on April 15, 2005. Although operational, the CVTD faces some environmental and social management challenges. To overcome these difficulties, the Ouagadougou City Council is securing a site on which it can develop a Landfill in the coming years. As part of this project, the infrastructure to be developed in the city of Ouagadougou will consist to the construction of 55 collect and sorting centers, 7 waste transfer centers and the reinforcement of the CTVD of Ouagadougou. Technical, environmental and social studies will be conducted for a better dimension of these infrastructures and a better integration of environmental and social aspects. The infrastructures will be sized for a lifetime of at least 30 years.

***Output 4.1.6*** *: Construction of the landfill  and infrastructure for treatment and sorting in Parakou*

The present project plans to build a landfill in Parakou and ten (10) integrated waste sorting and recycling centers to improve waste management in this city. The activities include those described under Output 4.1.2 and complement the output 4.1.1. which aims to close small dumps in the city.

The municipality of Parakou has an area of ​​40 ha to build the landfill whose lockers will be sized for an operation of at least 30 years. The landfill will include the infrastructures mentioned under Output 4.1.2 and the transit centers will be developed according to the model presented in Figure 2. Technical-economic and financial feasibility study, environmental and social impact assessment (ESIA), Detailed Project Plan (APD in french) and Tender Documents offer (DAO in french) will be formulated within the framework of the execution of this work.

As part of the project, two (02) waste compactor bulldozers for 20 tons will be acquired by the municipality on the landfill.

***Output 4.1.7:*** *Construction and extension of the Lomé Landfill and waste transit centers*

As part of this project, the Municipalities of Lomé received funding from BOAD, the EU and AFD for a landfill in Aképé located about 20 km North-West of the city of Lomé. The lockers built are sized for the period 2018-2022.

This work includes the extension of the Landfill for five additional years of operation and the construction of 12 integrated waste sorting and recycling centers. Additional studies will be carried out for the extension of the Landfill and the construction of waste transfer and recovery centers. A site of 194 hectare was acquired by the Municipality as part of the implementation of the Landfill. Complementary studies will be carried out for the extension of the Landfill and the construction of waste transfer and recovery centers.

Outcome 4.2: The sorted waste recycled by sectors

The recycling will concern plastic waste, electrical and electronic waste, metal waste, and organic waste, papers, cardboard ang glasses. The waste recycling is designed to contribute to the job promotion, economic growth, financial enhancing, environment restoration, etc. The activities identified will contribute to reduce the POPs, UPOPs and mercury emission.

Following the initial review of investment proposals submitted to the Green Windows, a panel of five financial experts and practionners will be convened to evaluate the short-listed proposals and make a final decision on investments.

This panel comprises a representative from the waste management industry, a representative from the banking and financial sector, a representative from the ministry of finance and a representative from the ministry of environment in each of the project countries.

In order to ensure the protection of the environment and human health, recycling and recovery projects will be submitted to the ESIA Bureau of the beneficiary country. The bureau will determine, after an environmental and social screening, the project category as well as the environmental due diligence to be conducted to meet the environmental and social requirements of the country, of GEF and of BOAD, in accordance with the national ESIA procedure. For companies already operating in the field of recycling, the extension of the project will require an environmental and social approach as foreseen above or an environmental audit in accordance with the national requirements to reframe the activities.

The waste recycling will be done according to BAT/BEP, and laboratory verification, the Ministry of environment control promoted under the Component 2, the financing, certification and granting mechanisms under the Component 3 and in order the legal and regulatory framework to establish under the component 1 and 2.

The planned activities include: (i) Support to enterprises for plastic waste recycling; (ii) Support to pilot electrical and electronic equipment waste recycling; (iii) Support to hospitals or pilot companies for the treatment of medical waste; (iv) Support for pilot companies of composting for the development of peri-urban agriculture; (v) Valorisation of the biogas produced in the landfills in electrical energy, gas for kilns and furnaces to reduce the contribution of methane emissions to global warming; (vi) Support to metal waste recycling units; (vii) Support of Paper and cardboard recycling units and glass valorization.

Under this Outcome, around 100 SMEs will benefit from project support for the development of recycling and recovery activities. The selection and financing of these SMEs will be done according to the mechanism described in output 3.1.1 of the Green Window.

The following table summarizes the number of SMEs by sector and by country.

Table 4: Breakdown of beneficiaries SMEs per city for recycling activities

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Recycling activities** | **Nber of SMEs** | **Parakou** | **Ouagadougou** | **Bamako** | **Niamey** | **Thiès** | **Lomé** |
| Support to plastic waste recycling, collection companies (output 4.2.1) | *22* | *3* | *4* | 4 | 4 | 3 | 4 |
| Support to pilot companies for electrical waste and electronic equipment collection and treatment (output 4.2.2) | *16* | *2* | *3* | 3 | 3 | 2 | 3 |
| Support to hospitals or pilot companies for medical waste treatment (output 4.2.3) | *16* | *2* | *3* | 3 | 3 | 2 | 3 |
| Support to pilot composting companies for the development of peri-urban agriculture (output 4.2.4) | *16* | *2* | *3* | 3 | 3 | 2 | 3 |
| Support to metal recycling units (output 4.2.6) | *14* | *2* | *3* | 3 | 2 | 2 | 2 |
| Support of paper and cardboard recycling units and glass valorization (output 4.2.7) | *16* | *2* | *3* | 3 | 3 | 2 | 3 |
| Total SMEs per country | 100 | 13 | 19 | 19 | 18 | 13 | 18 |

***Output 4.2.1.*** *Support to enterprises for plastic waste recycling*

The plastic waste produced in the countries concerned consists largely of rigid pipes and tubes, food packaging, dishes, buckets and basins, chairs, tables, table cloths, bins and pipes, cable ducts, containers of cosmetics, etc[[3]](#footnote-3). The current mode of destruction of this plastic waste is mainly incineration. It generates dangerous pollutants such as dioxins and furans from the degradation of Polypropylene (PP), Polyethylene (PE), Polyethylene Terephthalate (PET), Polyvinyl chloride (PVC), Polystyrene (PS), Low Density Polyethylene (LDPE) etc.

In each beneficiary country, some recycling initiatives are undertaken by NGOs / Associations, EIGs, women's groups and individuals. These will be encouraged and new ones will be created through the project. The project will thus support the selected companies, on the basis of a call for expression of interest, for the recycling of plastics.

The generalization of sorting at source at the level of waste generation sources (households, markets, businesses, schools, etc.) will require the permanent availability of bins. The production of these plastic bins from recycled plastic waste will meet this need in bins. This garbage production will be entrusted, on call for tender, to local or national companies operating in the field of plastics or, failing that, to companies that are nationals of WAEMU or ECOWAS.

The operating model of companies and activities for the recovery and recycling of plastic waste under the project is proposed below.

Plastic waste resulting from sorting at source

Plastic waste resulting from secondary sorting at the transit center

**Plastic waste recycling units**

Categorization of waste on the basis of the list established with the support of Laboratory

National Laboratories for quality verification

Recycling of non-hazardous waste

Hazardous plastic waste

Recycled products:

Waste bins or garbage bins for households

Paving stones for building

Polytancks of water, beads, toys and other valuables

Waste precollect by GIE

Waste that can be processed and recycled using available methods

Hazardous wastes that cannot be treated by available methods

Elimination by equipped companies

Sale of plastics sorted by women and young people

**Landfill**

Collection of non-recycling by companies

Framework of the Basel, Stockholm and Minamata Conventions

Refusal of recycling

Figure 4: Plastic waste recycling model proposed

***Output 4.2.2.******Support to pilot electrical and electronic equipment waste recycling***

To ensure the sustainable management of electric and electronic equipment waste (e-waste) and reduce emissions of POPs and Mercury, the project aims to provide technical and financial support to SMEs / EIGs / NGOs to be selected on the basis of a call for applications at national level. These SMEs / EIGs/ NGOs will benefit from micro-credits and facilities put in place (component 3). This activity is complementary to the construction of waste storage facilities containing POPs and Mercury (Output 2.1.4.) and the elaboration of regulation relative to electric and electronic equipment importation and their sustainable management (Output 2.2.2.). Also, after recycling, the elements containing hazardous materials (POPs, Mercury, etc.) will be carefully stored to be conveyed to companies able to eliminate them ecologically. The recycling and / or the elimination of energy-consuming lamps for public and domestic lighting planned as part of the energy efficiency programs of the national electric companies will be conducted in this context. Thus, the proven recycling companies of lamps or the providers of lamps saving in the framework of the said projects will be responsible for this purpose to convey these lamps to the countries / companies able to recycle them. The collection of these lamps will be organized for this purpose.

In the other hand, the Green Window will help the country to solve definitively the e-waste pollution problem using the principle of “polluter-pays”. Thus SGS RENOVO® SOLUTION can be implemented in beneficiary countries (see output 3.1.1). In view of the limited quantities of e-wastes and for efficiency, e-wastes collection will be organized in each beneficiary city (2 to 3 e-waste per city) while the recycling will be organized at a higher level in the country or even regionally between the 6 countries. The diagram below illustrates the model of recycling and treatment of e-waste promoted by the project.

E-Waste resulting from sorting at source

E-Waste resulting from secondary sorting at the transit center

**E-Waste recycling or recovery units**

Categorization of waste or equipment according to the materials they contain

National Laboratories for verification

Recovery of recyclable materials or objects

Parts Containing Mercury and Hazardous POPs

Sale of recycled products

Waste precollect

Storage in secure stores

Elimination by equipped companies

Framework of the Basel, Stockholm and Minamata Conventions

Vente par des femmes et des jeunes

Reusable equipment (ex. computers)

Donate equipment to schools for example

Figure 5: Electric and electronic equipment waste management model proposed

***Output 4.2.3.*** *Support to hospitals or pilot companies for the treatment of medical waste*

As part of this project, pilot hospitals will be selected in each country to apply BAT and BEP from production to waste disposal. Appropriate and adapted technologies will be selected for the needs of the beneficiaries. On-site waste treatment will be preferred and promoted. To support this, waste management facilities will be established and local staff will be trained to strengthen their capacity.

When on-site treatment is not possible, a local enterprise or Economic Interest Grouping (EIG) will be contracted, following a call for applications for the management of biomedical waste. The selected enterprise must be certified as indicated in component 3. The company or EIG will be responsible for pre-collecting, collecting and transporting biomedical waste. Two to five companies or EIGs will be retained in each beneficiary city for the development of this activity.

The waste management facilities in the pilot centers shall consist of at least: (i) healthcare waste (HCW) collection and conditioning equipment; (ii) uncontaminated waste collection equipment; (iii) collective and individual protection equipment; (iv) a storage room reserved for BMW, etc. Traceability in waste management will be ensured through: (i) the agreement signed between the center and the authorized company and reinforced by the project; (ii) hazardous waste records; (iii) the monitoring sheet established for each removal operation; (iv) the results of analysis and control by the Laboratories; (v) receipt notes to the landfill, etc. The following figure illustrates the waste management model from hospitals.

During the development of the healthcare waste Directive under Output 2.2.2., The study that will be commissioned will make a complete point on the management of HCW will propose suitable options to implement for a complete eradication. poor management of HCWs at hospitals and health centers in beneficiary cities and at the national level.

Sorting at the source according to the nature of the waste, based on the hazard statements, danger pictograms and safety data sheets

Packaging and storage in a secure place

Removal and transport by an authorized company for hazardous waste transport

Treatment by a company authorized under the international conventions in force

Site specially built on the landfill for bio-medical waste traitement

Infectious waste, mercury, unused drugs, etc.

Uncontaminated and recyclable waste

Quality control by National Laboratories equipped

Recycling or recovery units (e-waste, plastics waste, composting, metal and papers, cardboard)

Refusal recycling

Landfill

Waste found to be contaminated

Waste containing dangerous POPs and Mercury

Elimination by specialized companies

Figure 6: Model proposed for medical waste management

***Output 4.2.4.*** *Support for pilot companies of composting for the development of peri-urban agriculture*

In order to strengthen the production of compost by companies / NGOs / Associations and its consumption by farmers, the project will undertake the following actions: (i) technical and financial support to compost production companies; (ii) approaching the municipalities to convert the gains made on the transport of garbage into the cost of transporting the compost to farmers' fields; (iii) approach to the Ministry of Agriculture for subsidizing the transport of compost to farmers, as is done in the context of chemical fertilizers; (iv) conduct, in collaboration with the Ministry of Agriculture, a campaign to raise farmers' awareness of the benefits of using Compost, particularly in terms of sustainable land management and sustainable improvement of yields , the preservation of water resources and human health; (v) consultation with the Ministry of Agriculture for the implementation of a national strategy for the production and the consumption of organic manure (see Output 1.1.3: Regional study of techno-economic comparison of treatment and recycling of waste in WAEMU). To prevent pollutants from contaminating the food chain, the beneciaries of this support, will collaborate with the Laboratories in the framework of the Global Monitoring Program (GMP). The development model of micro composting companies proposed by the project is illustrated by the following figure.

Putrescible waste from sorting at source

Compostable waste resulting from secondary sorting at the transit site

Compostable materials

National laboratories equipped for verification

Compost production and packaging

Unsorted waste precollection

Transport by EIGs

Farmers, gardeners, etc.

Transport of compost to agricultural poles

Subsidy by the States / Ministries of Agriculture

Awareness raising by NGOs / Associations

Refusal of composting

Landfill

Figure 7: Model proposed for composting units

The intensification of compost production and its use by farmers is at all very important as it will reduce the operating costs of the constructed landfill and increase the its life. According to data from the NGO ENPRO, the amount of waste processed by its platform is 4,500 tons per year. This waste, which is no longer conveyed to the landfill, is a gain for the City Council, which spends about CFAF 5,000 per ton of waste transported to the landfill, i.e. more than 22 million FCFA of gain for the municipality. In compensation for the composting company whose product is expensive to the farmer after transport, exchanges will be undertaken with the City Council for its contribution to the transport of the compost.

***Output 4.2.5****. Valorisation of the biogas produced in the landfills in electrical energy to reduce the contribution of methane emissions to global warming*

The project through Outcome 4.1, will realize/enhance landfill in the beneficiary cities. The storage of waste on the landfills will constitute a source of methane emission. In order to make the project viable and contribute to strengthening the benefits in terms of the global environment, the methane produced on the landfills will be valorized to energy. Part of the energy produced will be used to power the landfills infrastructures and the other part will be fed into the national / urban grid. In the latter case an agreement will be signed between the municipalities in charge of the operation of the landfills and the electricity companies. The cities concerned by this activity are Parakou, Ouagadougou, Bamako, Niamey and Lomé. The biogas upgrading activity will involve: (i) the covering of the landfill with clay / HDPE layer; (ii) the installation of biogas collection system; (iii) the installation of generators connected to the national electricity grid; (iv) active extraction of biogas; (v) the electricity production and delivery to the electricity grid. The following figure illustrates an example of the biogas upgrading system in electricity on a landfill.

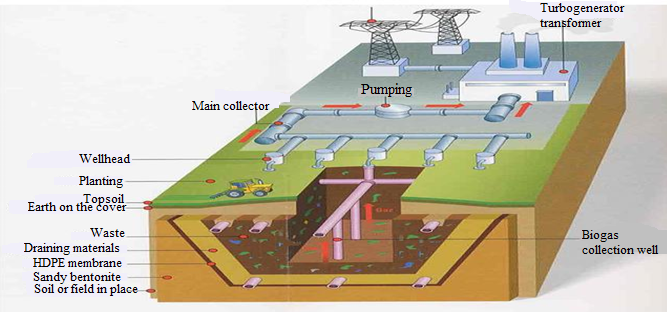


Figure 8: Example of a biogas upgrading system for electricity

Beyond that, other alternatives will be explored, including the production of briquettes or other recovered solid fuels.

***Output 4.2.6.*** *Support to metal waste recycling units*

Metal or scrap occupies a significant proportion of the waste produced in the different cities of the project. These metals are sorted on the dumps by young people and women. Other groups of young people move from house to house for the purchase, after weighing by balance, of this scrap. The collected metals are sent to foreign countries for recycling. The project, through this Output, seeks to support small recycling units of these scrap metal in order to create jobs and produce equipment based on recycled metal / scrap. 16 SMEs will be selected by call for applications for the metal waste recycling.

***Output 4.2.7.*** *Support for cardboard and paper recycling units and glass valorization*

Paper and paperboard occupy a significant part of the waste produced in the beneficiary cities. The rate of paper and cardboard in waste is, for example, 6.2% in Ouagadougou, 5% in Lomé and 3.5% in Bamako. The common practice is the burning of these wastes with greenhouse gas emissions. The project through this activity will provide support to SMEs for the recycling of this waste in each project beneficiary city. Regarding glasses, households will be encouraged to continue selling bottles to good women for their valorization. The rest of the glasses found in the waste will be sorted and valorized through grinding for their use in construction concrete. 14 SMEs will be selected by call for applications for cardboard and paper recycling and glass valorization.

**4) Alignment with GEF focal area and/or Impact Program strategies;**

The project is aligned with the GEF focal area : “Chemical and Waste (CW)” and “Climate Change Mitigation (CCM)”. The table below establish the alignement of project with the GEF focal area.

| Fund Objectives | Fund program | Project objectives/Components | Fund Outcomes | Project outcomes |
| --- | --- | --- | --- | --- |
|
| CW1: Develop the enabling conditions, tools and environment to manage harmful chemicals and wastes | Program 1: Develop and demonstrate new tools and regulatory along with economic approaches for managing harmful chemicals and waste in a sound manner | Develop national and local capacities for the promotion of best available techniques and best environmental practices (BAT/BEP) in waste management sectors for reducing emissions of UPOPs and mercury | Outcome 1.1: Countries have appropriate decision-making tools and economic approaches to promote the removal of barriers preventing the sound management of harmful chemicals and waste | Outcome 2.1: Strengthening the Institutional, administrative, legal, technical and regulatory framework for reducing UPOPs and mercury emissions |
| Outcome 1.2: Innovative technologies are successfully demonstrate, deployed and transferred | Outcome 2.2: Institutional, regulatory technical and funding mobilization capacities of public and private companies reinforced and made operational for sustainable waste management based on BAT/BEP |
| Outcome 2.3. Stakeholders operating in waste production, collection and treatment are sensitized on pollutants emissions and use best practices in the area |
| Provide support for the construction of efficient solid waste treatment and recycling facilities | Outcome 4.2. Waste sorted are recycled and valorised as part of a public-private partnership |
| Outcome 4.1. Waste collection and treatment infrastructure and facilities available in the countries |
| Enhance organizational, technical and financial of micro-operational enterprises in waste sector | Outcome 1.1: Countries have appropriate decision-making tools and economic approaches to promote the removal of barriers preventing the sound management of harmful chemicals and waste | Outcome 3.1. Organizational and technical capacities of micro-businesses are strengthened for the promotion of innovative practices in waste sector with due consideration of BAT and BEP |
| Outcome 3.2. Sustainable financing of waste sector |
| Outcome 1.3: Monitoring, evaluation and impact assessment |
| CW2: Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies/substances | Program 6: Support regional approaches to eliminate and reduce harmful chemicals and waste in LDCs and SIDS | Establish regional capacity to promote sustainable waste management and share experience among partner countries | Outcome 6.2: LDCs and SIDS regional/sub-regional plans include and account for the management of harmful chemicals and waste | Outcome 1.1: Decision-making tools are in place to promote sustainable waste management at regional level and reduce pollutant releases |
| Outcome 2.2: Institutional, regulatory and technical capacities of public and private companies reinforced and made operational for sustainable waste management based on BAT/BEP |
| Outcome 1.3: Monitoring, evaluation and impact assessment |
| Outcome 6.1: Capacity of LDCs and SIDS to manage harmful chemicals and waste is enhanced | Outcome 1.2: Capacity for sharing experiences and expertise on sustainable waste management in place and strengthened |
| Program 3: Reduction and elimination of POPs | Develop national and local capacities for the promotion of best available techniques and best environmental practices (BAT/BEP) in waste management sectors for reducing emissions of UPOPs and mercury | Outcome 3.1: Quantifiable and verifiable tonnes of POPs eliminated or reduced | Outcome 2.1: Strengthening the Institutional, administrative, legal, technical and regulatory framework for reducing UPOPs and mercury emissions |
| Outcome 2.3. Stakeholders operating in waste production, collection and treatment are sensitized on pollutants emissions and use best practices in the area |
| Outcome 2.2: Institutional, regulatory technical and funding mobilization capacities of public and private companies reinforced and made operational for sustainable waste management based on BAT/BEP |
| Enhance organizational, technical and financial of micro-operational enterprises in waste sector | Outcome 3.2. Sustainable financing of waste sector |
| Provide support for the construction of efficient solid waste treatment and recycling facilities | Outcome 4.2. Waste sorted are recycled and valorised as part of a public-private partnership |
| Program 4: Reduction of anthropogenic emissions and releases of mercury to the environment | Develop national and local capacities for the promotion of best available techniques and best environmental practices (BAT/BEP) in waste management sectors for reducing emissions of UPOPs and mercury | Outcome 4.1: Mercury is reduced | Outcome 2.1: Strengthening the Institutional, administrative, legal, technical and regulatory framework for reducing UPOPs and mercury emissions |
| Outcome 2.3. Stakeholders operating in waste production, collection and treatment are sensitized on pollutants emissions and use best practices in the area |
| Outcome 2.2: Institutional, regulatory technical and funding mobilization capacities of public and private companies reinforced and made operational for sustainable waste management based on BAT/BEP |
| Enhance organizational, technical and financial of micro-operational enterprises in waste sector | Outcome 3.2. Sustainable financing of waste sector |
| Provide support for the construction of efficient solid waste treatment and recycling facilities | Outcome 4.2. Waste sorted are recycled and valorised as part of a public-private partnership |
| CCM2 : Demonstrate Systemic Impacts of Mitigation Options | Program 3: Promote integrated low-emission urban systems | Provide support for the construction of efficient solid waste treatment and recycling facilities | Outcome C. Financial mechanisms to support GHG reductions are demonstrated and operationalized | Outcome 4.2. Waste sorted are recycled and valorised as part of a public-private partnership |

**5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;**

The analysis of waste management schemes in the countries covered by the project reveals that the sector meets several particular financial difficulties. The problems posed by the proliferation of waste and poor management in the countries covered by the project will become even more pressing, given the steady population groth of project cities and that consumer needs will increase accordingly. The government officers, the municipalities, the SMEs and local groups and population who are involved in managing these wastes are nowadays constrained by the lack of policies, regulation and organization, technical, material and technological deficiencies, as well as financial difficulties in order to play fully their roles. With no external funding, the concerned countries will not have efficient and sustainable waste management system. Thus, the stakeholders will be more and more unable to face the predicament of increasing amounts of wastes that contains mixtures of household waste and sometimes of harmful chemicals leading to the development of severe diseases, the deterioration of the living conditions of the populations and the degradation of the global environment. Without additional funding this situation will not be improve.

The implementation of best available techniques and best environmental practices (BAT/BEP) proposed under Stockholm Convention as well as those under development for Minamata Conventions have been hindered by lack of knowledge and resources as reported by Mali and Senegal in their National Reports. The GEF Funding will be used for technical assistance to support the enhancement of the harmful chemicals and waste comprehensive and sustainable management system to reduce POPs, UPOPs, Mercury, and GHG. GEF funded activities will provide guidance to the investment on BAT/BEP and help support decision on the costs and benefits of the selected technologies and practices for sustainable waste management and for improving the populations’ living environment and health as well as promotion of green jobs in the beneficiaries’ countries. Thus, the GEF funding will help for: (i) the establishment and implementation of policies, regulations and efficient, consistent and harmonised standards and tools to promote the removal of barriers preventing the sound management of waste (outputs 1.1.2, 1.1.3, 2.1.2, 2.2.2, 3.1.3, outcome 1.2.); (ii) the support of regional approaches to eliminate and reduce harmful chemicals and waste (outcome 1.1.), the strengthening of regional capacity for sharing experiences and expertise for sustainable waste management in the WAEMU members’ countries ; (iii) the building of organizational and institutional capacity at the level of municipalities, public administration and the private sector at national level (outputs 2.1.1., 2.1.2, 3.1.1., 3.1.2) to promote and implement the BAT and BEP approaches for Hazardous Chemicals and Wastes Management to reducing UPOPs and mercury releases (outputs 2.2.3; 2.3.3); (iv) the introducing of innovative practices for recycling and valorisation of waste to reduce emission of Mercury, POPs and UPOPs (outcome 4.2.); (v) the Establishment and operationalization of sustainable financing mechanism, appropriate tools and economic approachesfor the waste sector to ensure a continuous and secure waste management beyond the project period (outputs 2.2.2, 3.1.1., 3.1.2., 3.2.2., 3.2.3.) ; (vi) the development and operationalization of a communication and awareness system for the adoption of good practices by stakeholders for a sound waste management (outcome 2.2.) ; (vii) the strengthening and the improvement of the technical capacities and skills in project administration (output 2.1.1).

The co-financing of the BOAD, the Member States and others will be more focused on investments including : (i) the establishment of infrastructure such as the landfill installation and the rehabilitation of small waste dumps (outcome 4.1.); (ii) the support to the strengthening of the capacity of the micro-finance institutions for the promotion of financial mechanisms tailored to the micro-companies for financing waste collection and recycling equipment (Output 3.2.1); (iii) support to pilot companies (EIGs, SMEs and CSOs) for collection, treatment, recycling and valorisation of harmful chemicals and waste and methane valorisation (outcome 4.2.); (iv) the support of the information and communication programme (outcome 2.2.); (v) support of the project coordination (Outputs 1.1.1 and 2.1.1) in selected cities and a part of the management cost.

**6) Global environmental benefits (GEFTF)**

According to the Second regional monitoring report for Africa developed under the Global Monitoring Plan of Stockholm Convention; PCDD/PCDF are widely detected in air in this region which could be attributed to releases from uncontrolled combustion of wastes including municipal wastes, medical wastes incineration, biomass burning of agricultural fields, industrial power generation activities and related thermal processes. Addressing the releases of UPOPs from anthropogenic sources is one of the key elements for the effectiveness of Stockholm Convention. The Convention therefore requires that Parties; among others; undertake an evaluation of the efficacy of the laws and policies adopted to manage releases of unintentionally produced POPs; developed strategies for identifying products and articles in use and wastes consisting of, containing or contaminated with chemicals listed in Annex A, B or C; introduced requirements for use of Best Available Techniques (BAT) /and/or Best Environmental Practices (BEP) for new and existing source. Certain of the project countries Mali Senegal and Togo reported the state of advancement of these obligations and all three reports that they could not implement action plans due to lack of adequate funding insufficient information and or lack of necessary technologies. Mali and Senegal report not having introduced BAT/BEP. The other project countries provide no data showing the crucial need for support in sound waste management as proposed in the project. Also, the management of mercury and mercury-containing waste is the last step in the product life-cycle. The elimination of mercury in products and processes may be the most efficient way to avoid the presence of any form of mercury in waste. While mercury is being phased down from products and processes, there is still a need to manage mercury from this end of the product life-cycle.

The project is therefore key in addressing the needs of the Stockholm Convention on Persistent Organic Pollutants where it is a requirement “that each party shall adopt the measures as deemed necessary to reduce the total releases derived from anthropogenic sources belonging to each and all of the chemical products included in Annex C to protect the health of the population and environment globally”. Through the promotion of waste sorting it will also establish approaches that will facilitate the identification of harmful chemicals and their containers in the urban waste stream and ensure that such wastes will be channelled to appropriate disposal of waste centers.

By implementing all its components in the 6 participating cities and by engaging the surrounding municipalities and villages in training programmes, strategy development and by opening the landfills to their domestic wastes, the project will have multiplier effect in its benefits. It will ensure the effectiveness of Stockholm; Minamata and Basel Conventions; the project will have additional global benefit reaching out to Climate Change control through reduction of GHG emissions. This project will help reducing UPOPs emissions from open burning at dump sites and therefore assist participants meet the obligations of the Stockholm Convention. The UPOPs emissions in the 6 WAEMU countries are included in table in Annex I, more specifically emissions in the participating cities have been estimated at 492.78 g-TEQ/Y. Medical waste incineration, burning of municipal waste and the uncontrolled burning of household waste are the major contributors to UPOPs emissions. The project components will all be targeted to development of institutions, knowledge, businesses, infrastructures, as well as the domestication of best available technics and best environmental practices, which will secure emissions reduction.

Global benefits for POPs reduction will be reached through improved knowledge leading to the identification and elimination of hazardous chemicals including POPs and mercury containing products and equipment in the domestic environment (PBDE containing electronic equipment such as TVs and CRT monitors, mosquito coils from uncertified origins which are suspected to contain DDT, as well as remaining lindane containing products previously used for lice and scabies. The project will also facilitate the collection, storage and transfer of PBDE and other POPs in EEE towards POPs elimination projects. Although some cities like Ouagadougou have landfill sites, ducts were implemented to retrieve the methane and release it into air. The project implements biogas retrieval facilities to produce energy intended for the genset supplying in power the landfill facilities and the population. The energy produced will help replace part of the fossil fuels used in some factories, thereby contributing to reduced GHG emissions. The second working group established under component 1 will undertake a study of alternative landfill gas valorisation options to circumvent flaring in cases where the captured biogas would not be significant for power generation. The project will reduce: (i) 215 metric tons of hazardous chemicals including 200 metric tons of POPs and 15 metric tons of mercury; (ii) 200 g-TEQ of UPOPs; (iii) 2 000 000 tons of CO2e-. The details of the calculation of CO2 reductions through recovery of methane at the Landfill are given in Annex J.

**7) Innovativeness, sustainability and potential for scaling up.**

The project clearly indicates the innovative character of the approach in terms of capitalization of the achievements, research practices, introduction of new facilities and techniques for waste treatment and recycling and circular economy for waste valorisation in the WAEMU region. The project develops a technical approach and practices for handling various types of waste including plastics, electrical and electronic, biomedical, kitchen leftovers, etc. throughout their value chain. It also seeks to support the valorisation and the organization of the sector, transforming the waste sector, so far handled by people and the practitioners themselves, in an economic sector, job creation, improved living and socio-economic conditions of the country, attractive to investors to boost national and regional economy. Thus, an induced development comes from ecological waste management. Academics and research institutes amongst all other stakeholders will be mobilized in the context of the regional platform for exchange of experiences or expertise, or in monitoring studies. The project seeks the strong involvement of the private sector in the search for sustainable waste management solutions in order to ensure sustainability of the proposed initiatives. The intensification of the project will therefore be sought by linking the project activities to business opportunities related to waste management. Awareness-raising of the population and especially children, young people and women will consist of promoting healthy and sustainable waste management.

A project component will consist of maintaining and strengthening at institutional level the regional secretariat so that it may continue to play a coordination role in the area of waste management beyond the project. This network will need to establish synergies with African networks such as (www.sweep-net.org) or international networks such as (www.iswa.org). The network will monitor the project outcome and impact during its implementation and after completion. In addition to strengthening the technical capacity of municipalities, support to the implementation of management strategies as well as the operationalization of a constraining cooperation framework, will help ensure sustainability of waste management actions in the countries.

The project introduces an innovative approach to the circular economy to ensure the participation of all stakeholders in sustainable waste management. This model will help to: (i) reduce waste quantities, transportation and storage costs; (ii) reuse the sorted resources and materials; (iii) create sustainable jobs; (iv) create new income at the household level to support waste removal; (v) reduce the trade balance deficit; (vi) produce sustainable energy; (vii) reduce the import and use of chemical fertilizers by strengthening agricultural production with organic fertilizers; (viii) reduce polluting emissions of UPOP, mercury and methane; (ix) reduce pressure on natural resources and ecosystems; (x) reduce the depletion of mineral and fossil resources; etc. The various exchanges during the public consultation reinforced the idea of ​​circular economy proposed by the project. The figure below shows the possible ways of sorting, recycling and reusing waste in a circular economy perspective, to improve the economy, the environment and the living conditions of the populations.

**Waste generation**

households

companies

Shopping centers

Restaurant Hotel

Markets, Schools

Streets Roads

hospitals

Plastic waste, e-waste, putrescible waste, scrap, glass, cardboard, papers

Waste sorted at source

Unsorted waste

**Recycling/valorization units**

Plastic recycling

E-waste recycling

Composting

Metal waste recycling

Cardboard and paper recycling

Infectious waste

Non-infectious waste

Elimination by equipped companies

Transport by EIGs

Secondary sorting

National laboratories equipped

Non-recyclable waste

Refusal of reycling

**Landfill**

Framework, of Basel, Stockholm, and Minamata Conventions

**Recycled products**

Bins, Pavers, Beads, Polytanck of water, toys, other objects

Building materials

Compost standars or enriched

Precious elements, shredded, reusable electronic equipment

Recyled paper and cardboard, egg trays, etc.

Regional, strategic, economic and legal orientations

Awareness raising, Financial support, Technical capacity building for SMEs / EIG

Exchange platform, forums, working groups, sharing experiences,

Hazardous waste on the list established by the conventions / laboratories

Established sustainable financial mechanism

Sale of recycled products in national and international markets

Revenue generation

Biogas recovery in energy

Taxes and concessions (waste, water, electricity, GSM)

Partnership with private companies

Research of international markets for the recycled products sale

Figure 9: Circular economy promoted as part of the project

Sustainability of project results will also be ensured by ensuring that interventions are integrated with existing institutions and systems at national and regional levels. Given the national shortcomings in the development and application of a legal, strategic and economic framework for waste management, the active involvement of the WAEMU Commission, which has proved its worth in terms of strengthening legal capacity strategic and economic aspects of the Member States, is an asset to support the sustainability of the project. In addition, the current missions of the Environment Department of the WAEMU Commission integrate sustainable waste management into the development of Community policies. During the preparation of this project, the WAEMU Commission Environment Department expressed the strong desire and willingness to host the Regional Secretariat of the project. They reassured to ensure: (i) the promotion of sustainable waste management in beneficiary countries; (ii) extension of project activities to other non-beneficiary Member States; (iii) exploiting the lessons of the project for the preparation of a more ambitious project for the benefit of all the cities and villages of the Member States.

At the national level, the present project place emphasis on the involvement of the main institutions concerned by the proposed actions in the project identification and preparation process. These are: municipalities (Mayors, DSTs, Secretariat General, Department Heads, and other executives), the Stockholm, Minamata and UNFCCC Convention Focal Points, the GEF Focal Points, the WAEMU Commission, etc. These are institutions or services responsible for the management of waste, POPs, mercury, GHGs, MFIs, SMEs involved in waste recycling.

A process of ownership of project actions by these institutions is strongly supported by the development of technical capacities for intervention on sustainable waste management actions. The integration of BEP / BAT provided by the project into the daily practices of municipalities and SMEs will ensure the effectiveness and continuity of actions after the intervention. Public consultations during the project development process allowed stakeholders to fully understand their responsibilities. The actions that each stakeholder will undertake on a daily basis will be improved and supported as part of the project implementation.

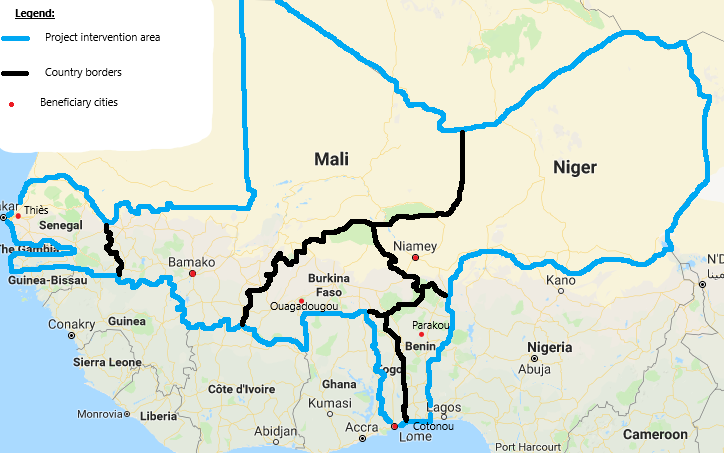
Long-term sustainability is also ensured through capacity building, integration of the project management with beneficiary municipalities, services in charge of POP, mercury, UNFCCC focal points, ministries in charge of the environment, the WAEMU Commission. This is reinforced through institutions that are already in this area, so that when the project is closed, the activities continue. The capacity of these entities will then be strengthened during the implementation of the project. These entities will be able to take over at the end of the project. The beneficiary city councils, the ministries in charge of the environment, the WAEMU Commission are committed to supporting the implementation of the project activities. This approach is also necessary for sustainability. At the end of the project, these institutions will be able to allocate resources to pursue certain activities. The improved actions proposed on the basis of BET / BAT will be quickly adapted by the beneficiaries who will be able to continue the practices after the closure of the project.

The BAT/BEP as well as the approach of a circular and lucrative economy that will be adopted by the municipalities and the SMEs will favor the maintenance and the operationalization of the various techniques and technologies beyond the limits of the project. These improvements in sustainable waste management and profitability will encourage beneficiaries to continue to implement these technologies and techniques and to ensure their sustainability.

*1b. Project Map and Geo-Coordinates*. Please provide geo-referenced information and map where the project interventions will take place.

The project covers 6 WAEMU countries: Benin, Burkina Faso, Mali, Niger, Senegal and Togo. Although the issue of waste is a general problem faced by every city (capital cities, secondary cities) and even rural areas, this is a pilot project which will target four capital cities and two secondary cities of medium importance. The choice of the capital city (except Dakar and Cotonou) is justified because primary efforts of governments in waste management started in these cities and the project seeks to reinforce these actions in order to address the challenges related to waste management in these cities considered to be representative of the country’s image. All segments of the populations of the countries are target groups of the project but the physical implementation will take place in selected cities. All the players in waste management are concerned.

The geographical location of the beneficiary countries is presented by the figure n°12 below.

Figure 12: Localisation of the project countries

2. *Stakeholders*. Please provide the Stakeholder Engagement Plan or equivalent assessment. (Type response here; if available, upload document or provide link) In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

The project will engage both public sector and private sector stakeholders in the preparation and implementation of the project. These include:: (i) Governments represented by the ministries in charge of environmental management, urban development, hospitals, community health centers, universities and laboratories, municipalities; (ii) the private sector consisting of companies active in the waste management chain ; (iii) the SME/EIG and civil society involved in waste collection and recycling; (iv) customs and tax services; (ix) the West African Development Bank (BOAD); the West African Economic and monetary Union (WAEMU) Commission; (x) the Global Environment Facility (GEF); (xi) the international development partners such as European Union, Agence Française de Développement.

**Project preparation launch workshop**

The regional workshop to launch the preparation of the full project document to be submitted to the Global Environment Facility (GEF) was held on 10 and 11 May 2018 at BOAD headquarters in Lomé. This workshop brought together actors from the beneficiary countries of the project: Benin, Burkina, Mali, Niger, Senegal and Togo, GEF and BOAD. The List of Participants is attached as Annex H-1.

This workshop was organized to share information with the beneficiary countries and invite them to participate fully in the process of drawing up the complete document for the appropriation of the project by these countries. The work was marked by a speech by the President of BOAD, the GEF Africa Coordinator and presentations on the state of waste management by the participating countries.

At the end of the various exchanges, recommendations were made to the implementation entity to be taken into account during the preparation and implementation of the project. These recommendations include:

* Use best practices in waste management: (a) Model legislation / regulations / standards / etc. ; (b) Characterization of waste; (c) Good practices for pre-collection, collection, transfer; (d) Various recovery / recycling channels; (e) Final treatment options; (f) Information / Awareness; (g) funding mechanism;
* Propose measures to harmonize policies at the WAEMU country level;
* Involve the actors (private, NGOs, Universities, Associations, parliamentarians, etc ...).

During the preparation of the project these recommendations have been taken into account in the programming of activities at regional and national level.

**Stakholders consultation**

During the project preparation, consultations with stakeholders involved in waste management were undertaken to gather information, documents and opinions on projects aspects. Fieldwork visits in Ouagadougou, Bamako, Thiès Niamey, Parakou, and Lomé were undertaken in order to make direct observations, interviews and focus group discussions with key stakeholders. A workshop was organized in each city to collect information from public administration officials, private sector, civil society organizations, communities, etc. and to understand the opportunities and constraints facing each of them for consideration in the preparation of the full project document. NGOs have been involved given that their actions in raising awareness are significant.

During these meetings, participants were invited to present past and current work in their countries, including lessons learned, gaps and opportunities related to waste management in the target cities and in the country to make improvements to the project. The following photos show some of the meetings between stakeholders in the beneficiary countries.

|  |  |
| --- | --- |
| SAM_0647 |  |
| Photo 12: Meetings with stakeholders in Bamako | Photo 13 : Meetings with stakeholders in Parakou |

**Landfills and waste recovery and recycling sites Visits**

During the fieldwork, authorised and uncontrolled landfills were visited and exchanges made with the managers in order to better identify the problems for their consideration during the construction of the infrastructures. During the missions, waste recovery and recycling sites and recycling companies in the beneficiary cities were visited. Discussions were held with local staff, including managers and employees of NGOs / Associations, EIGs and SMEs operating in these recycling and waste recovery activities. These actors have raised the difficulties of access to financing and capacity building needs for the large-scale development of their activities, job creators and wealth creators. These needs will be certainly satisfied through the implementation of the project through the activities planned under outcomes 1.2, 2.2., 3.1, 3.2. and 4.2 of the project. Visits were also made to health centers and Laboratories involved in waste management.

|  |  |  |
| --- | --- | --- |
|  | IMG_5143 | IMG_5145 |
| Photo 14 : Landfill visit in Parakou Parakou | Photo 15: Visit in Aképé landfill and exchanges with the sanitation Division of Lomé municipality and the company COVED operator of the landfill | Photo 16: Interview with the leaders of the NGO ENPRO and GEVALOR at the Soviépé composting site |

**CEO endorsement preparation Mid-term workshop**

A CEO endorsement preparation Mid-term workshop was held in Ouagadougou, Burkina Faso, from 30 to 31 October 2018. The workshop enabled project stakeholders to agree on unresolved technical and financial issues, to enrich the documents presented and to adopt a strategy for the rapid collection of additional information with a view to finalizing the CEO Endorsement draft. This workshop brought together:

* the focal points of the Stockholm, Minamata, GEF and UNFCCC conventions;
* the representatives of the beneficiary municipalities ;
* the representatives of the implementation Entity (BOAD) ;
* the representatives of the Consultant (Global Lead).

The list of participants is attached as Annex H-1.

|  |  |
| --- | --- |
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| Photo 17: Group photo after the opening ceremony | Photo 18 : Workshop in progress |

During this workshop, stakeholders wanted the project to focus on: (i) strengthening waste recovery/recycling at the expense of landfilling in a context of project sustainability; (ii) the introduction of incentives to encourage sorting at the source by producers; (iii) intensification of sensitization activities for all actors involved in the waste management chain; (iv) the appropriate treatment after characterization of the waste; (v) identification of possible ways to recover waste in different cities; (vi) strengthening the technical services of municipalities by setting up waste management services creating a platform for mayors / Municipalities to facilitate exchanges and sharing of experience; (vii) strengthening the involvement of private actors in waste management; (viii) the construction of transit sites and landfills for cities that does not have waste management infrastructure (ix) the establishment of Green Windows in the national environment management agencies, or if possible in the national environment fund; (x) the establishment of environmental police in the beneficiary countries; (xi) promoting green taxation to finance the waste sector; (xii) the promotion of a circular economy and adaptive management. The consideration of these issues in the project is presented in the following table.

Table 5: Concern and preoccupation of stakeholders and their consideration by the project

| **Preoccupation / wishes of the stakeholders** | **References of** consideration **of the preoccupations/ wishes of the stakeholders in the project** |
| --- | --- |
| strengthening waste recovery/recycling at the expense of landfilling in a context of project sustainability | The project focuses on the recovery and recycling of waste through its outcomes 3.1, 3.2. and 4.2. in order to enter the not only lucrative sector but also to reduce waste to bury on the Landfill. More than 250 SMEs / SMIs and EIGs will benefit from financial support for the development of waste recycling activities |
| introduction of incentives to encourage sorting at the source by producers | Incentive sorting at source is provided under Output 2.2.3, and 1.1.3..  The project is also planning to implement 50 to 100 programs of pilot activities to reduce waste generation at source and sorting (output 2.3.2). |
| intensification of sensitization activities for all actors involved in the waste management chain | Information, communication and awareness programs for households, schools, businesses, local and national authorities are provided by Output 2.3.1  ENVIRO-Mobile's activities to raise public awareness of food safety and sustainable waste management are planned under output 2.3.2. |
| Apply appropriate treatment after characterization of the waste | The project through the output 2.1.4. involves laboratories working in waste management to provide support in the characterization of waste and the proposal of appropriate treatment measures. Appropriate technologies and practices will be selected for the type of wastes. |
| Identification of possible ways to recover/recycling waste adapted by city | Outcome 4.2, identifies the various recycling and waste recycling sectors promoted within the project. A comparison study of the different waste recovery and recycling options is commissioned to propose possible and adapted modes for each beneficiary city (Output 1.1.3). |
| Strengthening the technical services of the municipality by setting up waste management services and creating a platform for mayors / Municipalities to facilitate exchanges and sharing of experience | A National Project Management Unit is set up within the Municipalities to facilitate the project's implementation by the Municipalities services (Output 2.1.1). Technical capacity building activities are genuinely planned for municipalities (Output 1.2.2.) As well as a platform of Mayors for exchange and sharing of knowledge and lessons learned (Output 2.2.1). |
| Strengthening the involvement of private actors in waste management | Planned acivities under Outcomes 3.1., 3.2. and 4.2. particularly target the private sector to strengthen their technical, organizational and financial capacities for the development of waste collection and recycling activities. |
| Construction of transit sites and landfills for cities that does not have waste management infrastructures | The project has planned under outcome 4.1, the construction of waste sorting and recyclingcenters in the 6 beneficiary cities and the construction of the Landfill for the cities of Niamey, Parakou, Bamako and the extension of a Landfill of Lomé. |
| The establishment of Green Windows in the national environment management agencies, or if possible in the national environment fund | After consultation with the various stakeholders, it was decided that the Green Window will be housed with the National Environmental Fund (FNE) in Benin, the Environmental Intervention Fund (FIE) in Burkina Faso, the Agency for Environment and Sustainable Development (AEDD) in Mali, the National Council for the Environment and Sustainable Development (CNEDD) in Niger, the Basel Convention Center in Senegal and the National Agency for Environment (ANGE) in Togo, asplanned under Output 3.1.1. |
| Establishment of environmental police in all the beneficiary cities | The project has planned to provide support for the establishment and / or operationalization of the Environmental Police in the beneficiary countries (Output 1.1.2). |
| Promoting green taxation to finance the waste sector | The project planned under output 1.1.3, the realization of a study on the establishment of a sustainable financial mechanism. This will define the appropriate options for each country. In addition Green Windows are planned and will be fed by taxes and fees for a refinancing of recycling activities and sustainable waste management |
| Promotion of a circular economy and adaptive management | Adaptive management and the circular economy are proposed in this project under Item A.6.1 (see Figure 9) and Item A.1.6: Innovation (see Figure 11). |

**Regional Workshop for CEO Endorsement validation**

The regional validation workshop, held on 14 and 15 February 2019 in Cotonou, brought together representatives of:

* Municipalities;
* Ministries of the environment, especially the GEF operational focal points;
* Ministries of Finance;
* Civil society organizations (private companies and NGOs) operating in the soild waste sector;
* BOAD;
* WAEMU Commission;
* GEF (GEF Africa Coordinator).

The list of participants is attached as Annex H-2.

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Photo 19 : Regional workshop

At the end of this workshop, recommendations were made to enable the approval of the GEF project approval process. These recommendations and their take into account in the document are presented in the following table. References are indicated by the following tavaleau.

Table 6: Inclusion of the recommendations of the validation workshop

|  |  |
| --- | --- |
| **Observations / recommendations** | **Reference taken into account in the project** |
| Find a mechanism to involve the private sector including SMEs, EIG / ONG / Associations in the financing of infrastructures such as the sanitary Landfill, waste recovery and recycling centers | Outcome 4.2., Outcome 3.1, Outcome 3.2. |
| Put emphasis on strengthening the technical capacities of private operators operating in waste management | Output 3.1.2 |
| Establish a sustainable financial mechanism adapted to the private sector | Outputs 3.1.1 ; 3.2.3 |
| Program a sanitary Landfill for the city of Thiès | Output 4.1.3 |
| Seek harmonization of legal texts for better waste management | Outputs 1.1.2; 2.1.1 ; 2.2.2. |

At the institutional level, the countries confirmed the integration of the Regional Secretariat for project coordination at the Office of the WAEMU Commission in Ouagadougou.

With regard to the counterparts of the Municipalities, each Municipality undertook to send to the BOAD supporting documents from said counterparties as well as requests for co-financing to enable the Bank to submit the CEO Endorsement to the GEF for its approval.

Given the priority that waste management represents in the intervention cities as well as for the beneficiary countries, the workshop strongly expressed the wish that the GEF approuved the CEO Endorsement and that the BOAD would set up the co-financing for complementary studies and project implementation.

During the initial implementation phases, the project will consolidate the different stakeholder roles. Civil society organizations will be involved in project implementation at all levels. In addition to those presented in the PIF, below are some key civil society organizations whose activities are aligned with those of the proposed project, and which could be enhanced during project implementation. The project will mobilize several actors from both public and private sectors through knowledge sharing platform planned under the Outcome 1.2.

Thus the project counts through the consolidation and the synergy of the different activities and components planned, establish a capacity for a sustainable waste management in the WAEMU. The following figure illustrates the capacity building in the project for coordinated and sustainable waste management.

Strengthening regional legal, regulatory, financial and waste management capacity,

Exchanges and sharing of experiences and lessons learned

Bénin, Burkina Faso, Mali, Niger, Sénégal et Togo

Strengthening national technical, technological, legal, strategic and institutional capacities

Public Technical Services:

Environment, City halls, Health, Hygiene, Customs, Education, Sanitation, Urbanism, Laboratories,

Environmental Policy

Private sector:

SMEs / SMIs

GIE

NGO

Associations

Group of young people and women

Chamber of Commerce and Industry

Strengthening national financial capacities

Public services :

National finance / plan ministries,

National Environment Agency, National Environment Fund,

Support Services for Youth Initiatives and Microenterprises

Private sector :

Microfinance institutions

SMEs / SMIs, NGOs, GIE, Associations

Group of women in the collection and recycling of waste

Raising (lifting) financial resources for environmental and climate management

National capacities for sustainable management of the value chain, recycling and storage of waste, job creation and strengthening of private enterprises established

State, Municipalities, Public Technical Services, SMEs, NGOs, EIGs, Associations, Youth and Women's Groups, Microfinance Institutions

Regional development institutions,

municipality, Ministries in charge of the Environment, Hygiene, Health, Sanitation, Town Planning (urbanism), Finance,

SME / SMI, GIE, NGOs Associations, MFIs, Research and analyzes Laboratories

Stakeholders consulted

Weak legal, regulatory, technical and financial capacities to promote sustainable waste management including POPs, UPOPs, Mercury

Low organization of SMEs / SMIs, GIE waste collection and recycling

Identified weaknesses

Stakeholder consultation during the preparation of the CEO Endorsement

Figure 10 : Establishement of capacity including all public and private actors for sustainable waste management

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body;

Executor or co-executor;

Other (Please explain)       NGOs / Associations, EIGs and SMEs / SMIs will be the direct beneficiaries of the activities planned under Component 3, Outcome 4.2, Outcome 2.3. They are associated in all activities under Component 1, Outcome 4.1., Outcome 2.1 and 2.2. They will be the important link in the implementation of project activities.

*3. Gender Equality and Women's Empowerment.* Provide the gender analysis or equivalent socio-economic assessment. (Type response here; if available, upload document or provide link)

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women’s empowerment? (yes  /no) If yes, please upload gender action plan or equivalent here.

During the project preparation phase, women's groups and associations were consulted in the six participating cities to gather their views and take into account their concerns in formulating the full proposal. Indeed, women make up a significant share of the workforce in the waste management sector.

|  |  |
| --- | --- |
|  |  |

Photo 20 : Women’s associations meet during the fiel visits

During the field visits, it was noted that vulnerable social groups involved in waste recycling are more likely to include women experiencing stress related poverty. These women rely heavily on this activity to secure a main or supplementary income.

The concerns raised by these groups of women met are as follows :

* Lack of technical capacity and involvement in decision-making related to waste management;
* Low organizational capacity;
* Lack of knowledge and awareness on best practices for sustainable waste management;
* Difficulties in accessing credit for the development of income-generating activities to reduce women's poverty and vulnerability and promote their development;
* Existence of brakes on the emergence of women's businesses in the recycling and recovery of waste;
* Low proportion of women in current waste management structures

These concerns were considered in the formulation of the project. Also, the project will ensure gender equality in the different activities to be implemented in the beneficiary countries. The project therefore proposes to remove the obstacles that women encounter in the development of their activities due to reduced access to production assets, credit, employment, training opportunities, etc. Thus, the project can facilitate the participation of women in training, education, micro-project development, mobilization of financing, implementation of income-generating activities. In this perspective, the project proposes to implement the following actions for the benefit of women to meet their concerns and demands (see table 7).

Table 7: Inclusion of women’s concerns in the project

| **Problems** | **Suggested solutions** | **Outcomes concerned** | **components** |
| --- | --- | --- | --- |
| Lack of technical capacity and involvement in decision-making related to waste management | Women's groups are particularly targeted by technical capacity building programs at local, national and regional levels to improve their involvement in environmental and waste management decision-making  The project aims to facilitate the training and learning of women to enable them to create their income-generating activities on the waste management chain in order to improve their living conditions.  Women will be involved in the exchanges on the platforms created by the project, in fora, in the working groups on issues of sustainable waste management. This will strengthen their capacities and their involvement in decision-making. The project will ensure that women are strongly involved in decision-making, validation workshops for regionally-planned studies and development of waste management guidelines.  Female applications will be encouraged in the establishment of the Regional Project Coordination Secretariat and National Project Management Units. | Outcome 2.1:  Outcome 2.2:  Outcomes 1.2 et 1.1  Outcomes 1.1, 1.3 and Project Management | Components 1 et 2 |
| Low organizational capacity | The project proposed to strengthen the organizational capacities of the stakeholders, especially women working in the waste management.  The women's groups will benefit support in view of their formalizations in EIGs/SMEs. These EIGs/SMEs formalized and owned by women will be more favored by the project in the process of certification and granting of approval for the development of activities of collection, recycling and recovery of waste | Outcome 3.1: | Component 3 |
| Lack of knowledge and awareness of best practices for sustainable waste management | Women's groups will be targeted by awareness-raising and education activities to teach them about sustainable waste management best practices (BAT / BEP) and to encourage them to be fully involved in sustainable waste management and especially to submission of microprojects. ENVIRO-Mobile's activities will target women in households, shopkeepers, etc.  Housewives in the markets and businesses are important targets in all communication and information program to improve waste management practices. Outreach activities will target a certain proportion of illiterate women. The vernacular languages will be used according to the zones and graphic illustrations will be promoted | Outcome 2.3: | Component 2 |
| Difficulties accessing credit for the development of income-generating activities to reduce poverty and vulnerability of women and promote their development | The project will put in place financial mechanisms to support the development of waste collection and recycling / recovery activities. To this end, it has been proposed to grant 50% of financial support to SMEs / EIGs led by women or women's groups..  Access to the Green Windows will be favored to women who carry innovative initiatives for sustainable waste management. | Outcome 3.2:  Outcome 3.2: | Component 3 |
| Existence of obstacles to the emergence of women's businesses in recycling and waste recovery | Selection criteria will be established to promote the selection of recycling and waste recycling initiatives promoted by women.  Priority will therefore be given to the initiatives of women's groups and associations and to orient women to decision-making positions as much as possible | Outcomes 3.2, 4.2 et 4.1  Outcome 3.1 | Components  3 et 4 |
| Low proportion of women in current waste management structures | As much as possible, 50% of the beneficiaries of the project will be women, i.e. at least one million (1,000,000) of women as direct beneficiaries of the project | All outcomes | All components |

Women will therefore play a very important role in the implementation of the project. The participation rate of women in the project activities according to the components is presented above as well as the estimated budget that will directly benefit women (see Table 8).

Table 8: Budget disaggregated by gender according to their involvement in project activities

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity groups** | **GEF financing** | **Rate of involvement of women, as much as possible** | **Profitability of GEF funding by women, as much as possible** |
| Establishment of a regional capacity and experiences sharing among project countries to promote sustainable waste management (Component 1) | 3,000,000 | 25% | 750 000 | |
| Development of national and local capacities for the promotion of best available techniques and best environmental practices (BAT/BEP) in waste management sectors for reducing emissions of UPOPs and mercury (component 2) | 5,000,000 | 65% | 3, 250,000 | |
| Organizational, technical and financial support to EIGs/SMEs in waste collect, recycling/valorization (Component 3) | 3,000,000 | 50% | 1, 500,000 | |
| Support for the construction of efficient solid waste treatment and recycling facilities (component 4) | 4,166,449 | 50% | 2,083,224.5 | |
| **TOTAL** | **15,166,449** | **50%** | **7,583,224,5** |

Based on these rates of youth and women's involvement, the GEF budget that will benefit women and youth to build their technical and organizational capacity and improve their lives and development is $ 7,583,224.5 ie. fifty percent (50%) of GEF funding for component of US $ 15,166,449.

If possible, indicate in which results area(s) the project is expected to contribute to gender equality:

closing gender gaps in access to and control over natural resources;

improving women’s participation and decision making; and or

generating socio-economic benefits or services for women.

Does the project's results framework or logical framework include gender-sensitive indicators? (yes  /no)

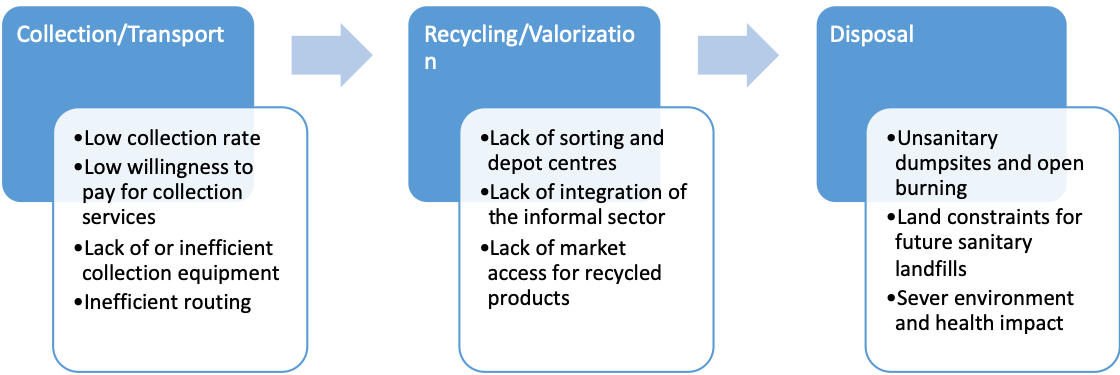
*4. Private Sector Engagement.* Elaborate on the private sector’s engagement in the project, if any.

The project approach is to provide regional planning on the legislative and institutional aspects of waste management, stakeholder capacity building and financial support to economic actors (SMEs and EIGs) as well as mechanisms for the recovery and environmentally sound treatment of waste in order to avoid practices that result in the emission of hazardous pollutants. The project aims to provide alternative technologies and options for the environmentally sound disposal of plastic, medical, electrical and electronic waste, etc. The project also aims to change people's behaviour and habits through information, awareness and communication activities; households will receive the knowledge and techniques necessary to reduce waste and carry out preliminary screening or sorting. To encourage pre-sorting by households, coloured bins will be offered. The waste collected and sorted by category will be sent to recycling channels to be used as secondary raw materials. Non-recyclable waste will be sent to technical landfill sites. The waste management scheme presented by the figure 3, under Ooutcome 4.1, will serve as a model.

**Private sector engagement and collaboration model**

According to research by the World Bank, in many low-income countries, municipalities spend between 20 and 50 per cent of their budgets on solid waste management, but are unable to serve all their citizens, as less than half of them benefit from it. Data collected in project municipalities during the project design phase confirmed these findings. Therefore, sustainable waste management cannot succeed without the involvement of the private sector and the financial and institutional scheme that provides the incentive for private sector operators to participate in the management of waste.

Below is the baseline scenario on waste management in project municipalities as related to challenges and opportunity for private sector intervention and the corresponding role and responsibilities of project municipalities and central governments in providing the regulatory framework and environment to ensure the private sector participation:



For integrated and sustainable waste management, public-private collaboration is essential for establishing solid, reliable and coherent logistical bases and to optimise the recovery chains. The private sector can intervene at several levels: pre-collection, collection and recycling (SMEs/EIGs) and at the level of the supply of equipment and the operation of landfills and recovery centres.

However, the commitment of the private sector must be incentivized and underpinned by rigorous business models with the prospect of profitability of the required activities for the private sector involved.

The traditional sources of financing for the collection and transfer of waste that fall within the financial scheme are:

* Municipal solid waste taxes;
* Environmental and sanitation taxes levied by the state;
* Resales of secondary raw materials for recycling by the population or the municipality;
* Resources from waste recovery such as recycled plastic or paper, biogas, electricity, as well as precious metals from electronic waste, marketed by the private recovery sector.

In addition, interviews with private sector waste management operators conducted during the project design phase identified that the private sector interest is incentivized if it is the waste generator that pays for waste collection and transport from its own financial resources, in contrast with the above financing coming from tax collection, which has historically been hampered by difficulties related to the recovery of the tax.

A combined use of these sources of funding to pay for the collection and management of waste would allow municipal and national authorities to provide guarantees to the private sector while committing them to generate resources from waste management in order to reduce the financial burden of the sector on sometimes deprived populations.

**Pre-collection of waste by the EIGs**

This classic scheme is based on the involvement of microenterprises in pre-collection and waste collection as well as at-source separation.

The project offers a platform to support EIGs through the establishment of a single Green Window that will facilitate their certification and access to financial support for the acquisition of equipment for waste collect and recylcilg and capacity building (Outcomes 3.1 and 3.2).

EIGs undertake to ensure the pre-collection of waste from a given area of the municipalities by agreement with the municipal authorities and are paid directly by the households with which they have individually concluded contracts for the collection and handling of waste. In order to ensure that the service paid for is actually provided, EIGs should undertake to deposit a certain quantity of waste in transit centres where their contributions are measured and recorded. The results of this monitoring will be used to ensure the renewal of the certification granted by the Green Window to these EIGs to continue their activities. The implementation of source separation and selective collection will lead to a reduction in waste quantities and increased quantity of recycled waste.

**Concession for the collection and recycling of areas by SMEs**

The project seeks the strong involvement of the private sector in the search for sustainable waste management solutions to ensure the sustainability of the proposed initiatives in areas that are more capital intensive and require more investment and technical know-how.

A second scheme of private sector involvement could be implemented in the waste recycling and recovery sector. SMEs experienced in the sector will receive a zone allocation for the complete management of municipal solid waste. The selected companies will be responsible for organising the pre-collection of waste with local EIGs or populations in a participatory approach and will have the opportunity to exploit all valuables in the wastes. The companies may hire pre-collectors or purchase sorted recyclable waste directly from households interested in sorting. The corresponding revenues will be deducted from the fees that households will have to pay for wastes collection services or granted in the form of products such as household equipment made from recycled materials. The recycled products will belong to the concession company.

The recycling company may receive incentives or government subsidies in the form of tax exemptions during the first 5 years of operation.

This autonomous circuit (self-financed and self-managed) will benefit from:

1. Contract with the municipality (approval or certification)
2. Loans facilitated for the acquisition of collection and transport equipment
3. State subsidies and incentives (tax exemption for the first 3 years, in proportion to the quantities recycled)
4. Support to collectors through training.

**Auto-financed landfill operation and recycling centre**

This option will be made through the establishment of a municipal contract with private parties. The contractors would transport the collected waste from the transfer stations and illegal landfills to the final treatment and recovery centre and would also manage the landfill.

The financing of this activity will be done through the collection of the municipality's solid waste tax and a payment of a state subsidy in the form of a tax credit.

The landfill operator would have contract for the operation and maintenance of the landfill and equipment over the period agreed with the municipality. This operator may also contract other transport companies to maximize the quantity of waste delivered and would pay "unloading fees" for the waste transported to the landfill.

The contractor will have the right to exploit the landfill gas (LFG) for direct use or electricity production, as well as production of other valuable materials. In this line, municipalities and central government could still paly a support role through facilitation of waste export/import licenses, zoning and authorization, concession and risk mitigation/insurance.

**Central purchasing of waste management equipment**

In the context of public-private collaboration, the involvement of the private sector, which owns know-how and equipment, could help in optimising the impact of the technical assistance that the project intends to provide to microfinance and banking institutions for the promotion of financial support mechanisms adapted to the EIG and micro-enterprises for the acquisition of equipment, collection, treatment and recycling of waste.

In the project plan, the Green Window established as central tool will support the EIGs/SMEs through training in management and in the acquisition of equipment necessary for the collection, transport and recycling of waste. Collaboration between the Green Window, banking or microfinance institutions, EIGs and SMEs in need of equipment and the equipment industry will provide a more solid and comprehensive foundation. This collaboration can be further enhanced in the form of a “buyer’s club”, operated by the project secretariat.

The “buyer’s club”’s design will integrate the project country’s government institutions that have jurisdiction and a role in this type of operations, e.g. Caisse des Prets in Tunisia, and cover the acquisition of waste management equipment, the training required for their operation as well as their maintenance and upgrade.

The contracts for the waste management equipment and related services will be awarded to vendors on the basis of an open invitation to tender. The project secretariat will launch and manage the calls for tenders.

The scheme proposed in the project, aims to set up a guarantee fund, micro-loans and subsidies with a financial institution for loans to EIGs and SMEs that have difficulty accessing the traditional financial system. The Green Window could develop a memorandum of understanding between the financial institution and the equipment industry to ensure that the latter provides the equipment required by SMEs. Vendors will be selected on the basis of an open invitation to tender. The project secretariat will launch a call for tenders, the financial institution would pay the equipment supplier on loans granted to SMEs and would be reimbursed by them according to the usual procedure. The equipment industries involved would undertake to provide, in addition to collection and transport equipment, training and attractive maintenance and guarantee contracts for EIGs. The engagement of African industries from countries facing comparable problems would provide knowledge of national ecosystems, customised equipment and the capacity to provide tailored technical training for equipment operation and maintenance.

**Geographical scope of private sector engagement**

Project countries will establish or strengthen enabling-policy support of and alleviate barriers to the exchange of waste between project and regional countries. Private sector will be encouraged to export recyclable waste to buyer countries that have strong recycling need, industrial capacity and regulatory framework as Egypt and Tunisia, thereby connecting regional economies.

In this model, municipality and central government play a key enabling role by issuing export licenses, for example.

**Phases of private sector engagement**

Phase 1: realization of a profitability study, as planned under output 1.1.3, which helps forecast the profitability of the end-to-end (generation >> collection and sorting >> recycling >> disposal) of waste management in the project municipalities. The profitability study must involve private sector actors.

Phase 2: The project establishes an experimental phase: a pilot phase for a private sector actor to intervene under the administrative concession model and specific framework conditions. For example, the ownership of waste collection and recycling equipment is in public hand and a private operator is contracted out for its management and the delivery of service.

Phase 3: Learning from the experience of and lessons from Phase 2 and the demonstration that the private sector can be encouraged to pursue commercially viable activities in the sustainable management of waste.

*5. Risks.* Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

A major challenge will be to launch a common dynamic mobilizing all countries to support improved waste management practices in the WAEMU region. This implies a common analysis of the challenges and restructuring options through a dynamic that requires a lot of efforts in terms of harmonisation of the courts and the policies. In addition, this project will involve several players from both the public and private sectors through knowledge sharing platform. This approach involves several organizational and intergovernmental coordination and inter-stakeholder challenges. In order to move to a country of the region, the secretariat will thus ensure coordination of this program in conjunction with national partners within the departments in charge of the waste sector. Another challenge will consist of conducting steadily approaches and studies to reduce disorderly dumps and construction of waste processing and sorting infrastructure. The constraints are not just related to land and financing but also to the participation of civil society and the acceptance of new infrastructure following the phenomenon “NIMBY: Not in My Backyard”. The waste sector involves at the same time several speakers and several departments and the implementation of policies therefore require extensive processes of consultation and coordination. All these aspects are so important, and the project secretariat will thus provide facilitation measures for the smooth running of the project. Other risks associated with the project are summarized in the following table as well as mitigation measures.

Table 9: Project risk and mitigation measures

| **Risks** | **Level** | **Mitigation measures** |
| --- | --- | --- |
| Low participation of stakeholders in waste management | weak | A participatory approach will be developed under the project. In its implementation, the project includes information, exchange and communication activities between the players in the field. Thus, through sensitization, radio and television stations, workshops, posters in local governments (city halls, departments, chiefdoms, etc), press releases and public places, populations and all the players will be widely informed of sustainable waste management sought by the project as well as the creation of job opportunities. |
| Emergence of constraints linked to land ownership for the installation of landfill | weak | Sites are already identified by countries on the basis of the development master plan of the cities. However, the project will ensure that the sites are not subject to any problem regarding land tenure |
| Weak powers of SMEs to cover expenses related to waste management | weak | The financial capacities of SMEs will be strengthened through the national “Green Window” that will be established under the project. A public-private partnership will also be promoted. The microfinance companies will also be involved in the implementation of the project to provide small loans to producers’ groups or associations in waste management. |
| Interference by political authorities in the project management | weak | The project foresees the strengthening of municipalities and other units in communal and national waste management with a view to the coordination of the project. These players will benefit from the support of the regional secretariat for project coordination at regional level. |
| Low participation of women | weak | The program encourages strong involvement of women through sensitization and building their capacity. Waste pathways involve more women and young people |
| Failure in coordination of activities due to conflicts of interest between stakeholders | weak | Establishment of a consultative platform, exchanges concerning information and sharing of know-how between the various players on the project at a time.  The secretariat to establish in a country of the region will thus carry out the coordination of this program in conjunction with national partners within the departments in charge of the waste sector. |
| Lack of financial flow to  sustain the waste  management operations  established by the project | Medium | In designing the project's financial modalities, a tax recovery mechanism will be designed to ensure sustainability of the waste management system. Waste management operators will be given a certain level of financial incentives that are proportional to the quality and quantity of the waste management treatment tasks performed by the operators. |
| A different pace of implementation for each country delaying the achievement of annual and overall project objectives | weak | The regional secretariat will put in place appropriate coordination of all activities in each country. Quarterly reports will be prepared by the National Project Management Units and sent to the Regional Secretariat. This will allow to detect the delays of implemented actions in each country. The Regional Secretariat will discuss progress with national units on a regular basis and take corrective action if necessary to move the project to the required pace in the countries. National implementation plans on an annual basis will be developed to guide country activities. |
| Environmental risks and impact from the construction and operation of the landfill, waste transit centers, waste recycling projects | Weak to Medium (TBC by subproject E&S screening) | Conduct an environmental and social impact assessment approved by the beneficiary country Impact Assessment Board/Agency and use the ESMP for the construction, operation and closure of the subprojects |

The complementary ESIAs will be necessary for some of the activities. Thus, according to the Environmental and Social Policy of the GEF, a screening is undertaken on the basis of environmental and social safeguard standards set by the GEF policy and those of BOAD (see annex K-1).

*6. Institutional Arrangement and Coordination.* Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

**A.6.1. Project management approach**

The waste sector activities are now considered non-profitable and humiliating. This project aims to transform the sector in attractive, lucrative, job-providing system, contributing to the national hygiene, health and environment restoration system, etc. The project wants to enhance the involvement of households, NGOs and associations, the private sector, the national and international finance sector, scientists, technicians, municipalities, states, and the community organization represented by the WAEMU Commission and the BOAD, in the sustainable waste management. Thus, the proposed municipal waste management system will be holistic, in contrast to the fragmented management that has often occurred in beneficiary countries. However, despite efforts to cover all aspects of municipal waste management in the proposed project, it should be recognized that this project may not only contain weaknesses to be addressed during implementation, but also that introduction of BAT / BEP and the required continuous learning will often require some reorientation with changes in approaches, changes to some proposed activities and monitoring indicators, adjustments in technical and financial resources, etc.

To achieve its objectives, the project will be managed in a systemic process of constant improvement of the approaches and the best practices introduced which is based on the lessons learned from the results. The existence of platforms for the exchange of scientists, technicians, municipal and private agents, will be a learning by doing opportunity to acquire knowledge, synthesize them, make choices of implementation management methods, with feedback. The planned actions must therefore be adjusted in time, according to their effectiveness and the evolution of the project's stakes. Project coordination should adopt a structured approach in an iterative process of robust decision-making, involving all stakeholders, in the face of uncertainties, with the aim of reducing uncertainty over time through system monitoring.

All project stakeholders, mobilized through project coordination, will have to learn together to create, monitor, evaluate progress, correct mistakes, readjust approaches, etc., maintain sustainable and efficient waste management in municipalities. This requires the project management bodies, flexibility in their decisions, an openness to the possibility of adjusting coordination, management, activities, indicators, assumptions, finances, etc. to improve progress towards the desired results. All the coordination units, the mayors' forum, the public and private sectors forums and working groups, etc. will contribute to achieve this goal.

The overall coordination of the project will therefore be through an adaptive management approach, which is schematized below.

Global Objective

Specific objectives

Expected results (Outcomes)

Activities planned

Implementation of activities on the field

M&E

Lessons learned from the project

Project coordination

Project planning

Stakeholders (Municipalities, Ministries of Environment, Health, Finance, MFIs, Banks, Regional and International Institutions, NGOs, SMEs / SMIs, EIGs, Associations, Youth and Women's Groups, etc.)

= Exchange and/or interaction

Exchange platform between experts and annual fora

Mayors' Platform

Working Group on Sustainable Waste Management

Capacities building

Figure 11: Adaptive management approach to be adopted by project coordination

**A.6.2 : Organizational framework**

The project objective is to increase investment in SMEs operating in the municipal and biomedical solid waste sector and strengthen national, legal, institutional, financial and technical infrastructure capacities to phasing out POPs, mercury reduction and sustainable waste management in 6 beneficiary countries. To achieve this, the project will rely on institutions already established that will be strengthened in their traditional missions. This choice made by the Stakeholders, is motivated by a concern for the sustainability of the actions to be undertaken in the context of the project in order to ensure their ownership and continuity during project implementation and after its closure. Project management arrangements will be at the regional and national levels to ensure ownership of the project by regional and national decision-makers.

**Choice of host structures of regional and national coordination**

During the evaluation process and the selection of regional hosting structure, the following criteria were considered. The host institution should :

* have a regional dimension and be able to represent the 6 beneficiary countries of the project;
* have at the regional level waste and / or environmental management in its traditional missions;
* demonstrate the ability to implement activities or projects in the field of the environment from a technical and / or financial point of view ;
* have experience and concrete results in terms of strengthening the political, legal, technical and financial capacities of WAEMU States;
* have sufficient space for the Secretariat offices and meeting rooms;
* have communications equipment (telephone, internet access, etc.) ;
* be able to support the secretariat to promote cooperation, collaboration and synergies between the 6 cities in efforts to help stakeholders and ensure sustainable waste management ;
* have a network or have the capacity to contribute to the stakeholders identification, the dissemination of information and knowledge ;
* have a reputation for efficiency, effectiveness and transparency;
* have the capacity to replicate the project and extend the lessons learned to all WAEMU countries ;
* ensure the project activities continuation and of its regional secretariat at the closing of the project even without the implementation of replication projects or the elaboration of another project financed by the original donors ;
* be able to ensure the coordination continuity of the regional secretariat's missions in case of closure and safeguard its achievements for the benefit of the Community experience in waste management and elimination of POPs and mercury.

Given the above, and after consulting the BOAD and WAEMU Commission, the choice was made to strengthen, at regional level, the WAEMU Commission which by its missions is already engaged in the harmonization of legislation, strengthening the coordination of national sectoral policies, the development of common environmental policies and the search for ways and means for sustainable waste management in the Member States. As a reminder, the report commissioned in 2013 by the WAEMU Commission on Plastic Waste Management was used in the development of this project.

At the national level, the appropriate departments of the municipalities, in particular, the Directorates of Technical Services, will house the national coordination.

**Project Management Bodies**

The bodies that will be set up to coordinate the implementation of the project at regional and national levels are therefore :

* the Regional Project Steering Committee (PSC);
* the Regional Project Coordination Secretariat (RPCS), housed in the WAEMU commission;
* the national Project Management Units (NPMU), housed in the Directorates of Technical Services of the beneficiary municipalities.

***The Regional Project Steering Committee (PSC)***

The PSC is set up by a Decision of the WAEMU Commission President with the support of the Mayors of the beneficiary cities and the Ministers of Environment of the countries concerned. The WAEMU Commission will act on behalf of the States.

The PSC is responsible for:

* provide general guidelines for the project implementation ;
* validate the annual budgeted work program of the project;
* ensure that the guidelines of the project activities are consistent with the full-size project and if possible, reorient such activities into an adaptive management context.

The Committee will meet once a year. They can organize extraordinary meetings if needed.

The PSC will consist of fifteen (15) members :

* the Commissioner in charge of the environment at the WAEMU Commission (President);
* the six (6) mayors of the beneficiary cities;
* one (01) representative of the Local Authorities Council of WAEMU;
* one (01) representative of the Regional Consular Chamber;
* six (6) representatives of the ministries in charge of the environment (mastering the POP, Mercury and greenhouse gas aspects of the project) in the beneficiary countries.

BOAD will participate the meeting of the PSC as an observer.

***The Regional Project Coordination Secretariat (RPCS)***

The Regional Project Coordination Secretariat (RPCS) is the Regional Project Management Unit.

The members of the RPCS will be recruited on call for applications from the BOAD. The RPCS is set up by decision of the President of the BOAD. In order to allow the RPCS to work in synergy with the WAEMU Commission, the regional coordination of the project is housed within the Office of the Commissioner in charge of the Environment, at the WAEMU Commission.

In an adaptive management context, the RPCS will be responsible for strengthening the regional, national, legal, policy, technical and institutional capacity for sustainable waste management.

Under the efficient supervision of the BOAD, the RPCS will be in charge to :

* implement the regional components of the project;
* prepare the regional ABWP to be submitted to the PSC for approval;
* prepare the legal, political and institutional texts of the Community and put in place the tools to promote their adoption and their implementation at the WAEMU country level;
* coordinate at the regional level platforms for exchanges between experts and the private sector and disseminate the results;
* Facilitate collaboration between recipient countries and municipalities in the exchange of knowledge and experience, efficient implementation of project activities in close collaboration with NPMUs ;
* manage the international and regional procurement of works, equipment, consultancy services on activities other than those related to the Construction of landfill and the for the Transit and Sorting Centers;
* disburse funds for the execution of the regional activities for which he is directly responsible;
* monitor and control the disbursement of funds related to the execution of national activities;
* ensure the overall quality and timely delivery of project results both at the regional level and within the beneficiary states;
* monitor and evaluate the results and activities of the project and report, in particular to the BOAD and the Regional Steering Committee of the project.

The RPCS will consist of :

* a regional coordinator, with a minimum level of Master degree (equivalent to French BAC + 5), specialized in municipalities management, with at least seven (7) years proven experience in the municipalities waste and waste infrastructure management including environment management aspect with hazardous waste management, associations/SMEs/EIGs support and/or partnership in waste management, sensitization ;
* a technical coordinator, with a minimum level of Master degree (equivalent to French BAC + 5) in local authority management and territorial planning. He/she must have at least 7 years of professional experience in a municipality of full exercise on waste management, support projects for SMEs / EIGs involved in waste management. He/she must have coordinated the development, construction and management of a modern technical landfill and provided evidence of environmental experience related to municipal waste management;
* an administrative and financial manager specializing in SME markets and financing. He/she must be minimum level Master degree (equivalent to French BAC + 5) with at least five (5) years experience in waste project management. He/she will be in charge of the procurement, the administrative management of the project and the implementation of the SME financing strategy ;
* a monitoring and evaluation manager, specialist in project monitoring and evaluation, awareness / communication, management and knowledge capitalization. He/she must be minimum level Master degree (equivalent to French BAC + 5) with at least five (5) years of experience in the field at municipality level.
* A secretary and a driver will be recruited to support the RPCS.

The Office of the WAEMU in charge of the environment will provide the RPCS with premises for its operation.

***The National Project Management Units (NPMU)***

To strengthen project ownership at the national level, each beneficiary Municipality will have a national Project Management Unit (NPMU). The number of NPMU is therefore six (6).

The NPMU will :

* coordinate the project at the national level;
* provide technical link with the RPCS for good coordination between the national and regional levels and support the RPCS in managing the overall quality and timely delivery of project results at the local level;
* ensure quality and timely delivery of project results at national level and report to RPCS ;
* give support to the Green Windows to select and finance the SMEs that will be involved in the recovery and recycling of waste with the support of the RPCS ;
* coordinate at the national level, exchange platforms between experts and private and disseminate the results after approval of the RPCS ;
* order and track disbursements for national beneficiaries ;
* manage the procurement of national works, service equipment with consultants as well as contracts related to the construction of landfill sites, transit centers and waste sorting;
* provide support in the monitoring and evaluation of sub-projects and send substantial reports to the regional project management unit.

On the proposal of the Directors of the technical services (Directeurs des services techniques (DST)) concerned by the project at the municipalities, the Mayor submits to the BOAD five (5) CVs of its executives, who will be in charge of the Coordination of the project. After having obtained no objection from the BOAD, the Mayor will confirm by Decision, the members of the NPMU. The NPMU team will be composed as follows:

* the National Project Coordinator. At least Master degree (equivalent to French BAC + 5), specialized in municipalities management, and/or municipalities infrastructures management, with at least seven (5) years proven experience in the municipalities waste management. He/she will be responsible for the overall coordination of the project at the national level, issues related to the construction and operation of the landfill and sorting centers. He/she will be an executive of the DST ;
* an environmentalist, of at least Master degree (equivalent to French BAC + 5), executive of the DST, responsible for environmental and social safeguarding, knowledge and communication management and awareness, capacity building, coordination of the platform for exchanges between experts and private individuals;
* an administrative and financial assistant. He/she will be in charge of administration and finances. He is an executive of the financial service of the Municipality;
* a project procurement specialist. He/she must be an executive of the city's municipal procurement department ;
* an expert in the internal monitoring and evaluation of the project. He/she will be provided by the project's monitoring and evaluation service.

The Mayor will assign a secretary, a driver and the necessary premises to the NPMU.

The organization and functioning of the NPMU will be such that the execution of the project activities is considered as a traditional mission of the municipality. However, the NPMU will be considered as representing the RSPC at the national level.

**A.6.3: Planned coordination with other relevant GEF-financed projects and other initiatives**

The proposed project will avoid duplication and seek to find synergy with other ongoing projects and programs, particularly the initiatives listed below which are not included as baseline activities but nonetheless have strong linkages with the proposed project activities. Collaboration will be done via communications with the responsible entities mentioned below and the entities will be invited to participate in stakeholder consultation meetings and be consulted in all project phases.

It is, among others:

* World Bank : Technical assistance for Management of hazardous and medical waste in Benin,
* AfDB: Creation of Waste Recovery and Treatment Centre (CTVD) in Ouagadougou, Burkina Faso. GEF/BOAD project will develop complementarity with the CTVD. The CTVD will be used for burying the ultimate waste and refusal of recycling from the waste recycling units. The capacities developed around this project can be used to strengthen the present project in its components 3 and 4;
* BOAD/AFD/EU : Construction of a Landfill centre in Aképé, Togo. The landfill construction project has been proposed as co-financing for this GEF / BOAD project. The constructed landfill is an asset to strengthen the results of this project. This landfill will be used for burying the ultimate waste and refusal of recycling from the recycling units. The capacities developed around this project can be used to strengthen the present project in its components 3 and 4;
* GEF/ONUDI/PNGD : Projet de Gestion Écologiquement Rationnelle des Déchets Solides Municipaux et Dangereux (PRODEMUD) in Senegal. It is implemented in the municipalities of Ziguinchor and Tivaouane. This project aims to "Reduce the emissions of persistent organic pollutants (POPs) from hazardous and municipal waste by strengthening the technical and institutional capacities of a group of private sectors capable of sustaining and replicating the best available techniques and the best environmental practices (BAT / BEP) demonstrated under the project as part of the implementation of the National Implementation Plan (NIP) under the Stockholm Convention ". It comprises the following components: (i) legal framework and institutional capacities; (ii) stakeholder engagement in waste management; (iii) improvement of rational waste management operations; and (iv) monitoring evaluation. The GEF / BOAD project will develop a synergy with PRODEMUD. The coordination of the GEF / BOAD project will ensure that the results that will be achieved and the lessons learned under PRODEMUD are used to strengthen the GEF / BOAD project, especially in its components 1, 2 and 3;
* The waste management project financed by the World Bank and AFD in Senegal financed the construction of a landfill in Tivaouane. This project will develop synergy with the GEF/ BOAD project;
* OSC : the national and international waste management programmes initiated by civil society, such as Health Centre of Bethesda in Benin, which assists communities to set up waste management systems and the Africompost programme, the development of biowaste composting units in 6 cities in Africa, including Lomé in Togo;
* GEF-SGP: Project to develop a unit for collecting, sorting and recycling plastic waste in the city of Lomé (2018-2020). These types of Micro-GEF projects related to waste management are also present in the other countries involved in the project. This project will develop synergy and complementarity with these micro-GEF projects in the organizational, technical and financial capacity building activities of SMEs / NGOs / EIGs, development of integrated waste recovery centers and recycling units (components 2, 3 and 4); During the fieldwork, meetings were held with the STADD NGO which is the beneficiary of the micro-GEF project and exchanges were undertaken in order to reinforce the implementation of this project, especially the financing of SMEs for the development of waste recycling activities;
* GEF-SGP: Project for the collection and recycling of waste electrical and electronic equipment in Togo. The GEF / BOAD Project, through its components 2, 3 and 4, will develop synergy and complementarity with this Micro-GEF project; During the fieldwork, meetings were held with the ASDI NGO which is the beneficiary of the project and exchanges were undertaken in order to strengthen the implementation of this project, particularly the financing of SMEs for the recycling of waste electrical and electronic equipment;
* National project for treatment and valorisation of plastics waste (PTVP) in Burkina Faso whose objective is the Organization of collection, transport, storage and secure recovery of plastic waste in the country. The project has stored on the landfill site of Ouagadougou more than 200 tons of plastics bought by the Ministry of environment. The Ministry and Municipality do not have funding and technologies to valorise the plastic wastes. There are fears that the stock could be burned one day;
* World bank and FAO: the Africa Stockpiles Programme (ASP) launched in September 2005 with the goal to clear all obsolete pesticide stocks from Africa and establish measures to help prevent their recurrence. Projects under the program are also designed to train and strengthen institutions on important chemicals-related issues, create opportunities to address broader hazardous waste management issues, and evaluate new cleaner disposal technologies;
* FAO GEF Full-size project (4740) on [Disposal of Obsolete Pesticides including POPs and Strengthening Pesticide Management in the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) Member States](https://www.thegef.org/project/disposal-obsolete-pesticides-including-pops-and-strengthening-pesticide-management-permanent) (Burkina Faso, Cabo Verde, Chad, Gambia, Guinea-Bissau, Mali, Mauritania, Niger, Senegal).

Many of the above projects are demonstration or pilot projects that have addressed some aspects of waste management. They have not been developed to establish a comprehensive system of sustainable management of harmful chemicals and waste. However, some results can be exploited in synergy and/or complementary with the present regional project. These results will be taken in account in the Full project at the Project preparation phase. The shortcomings of ongoing projects will be addressed by the activities of this project.

The project will consider support programmes embarked upon by other partners such as the Green Help Desk initiated by ESCWA and for this, coordination with ECA/SRO-WA will be committed. This approach which aims to capitalize the previous experiences and duplicate the best practices is critical to the success of this project as it has a regional scope.

*7. Consistency with National Priorities*. Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

* National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC
* National Action Program (NAP) under UNCCD
* ASGM NAP (Artisanal and Small-scale Gold Mining) under Mercury
* Minamata Initial Assessment (MIA) under Minamata Convention
* National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD
* National Communications (NC) under UNFCCC
* Technology Needs Assessment (TNA) under UNFCCC
* National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD
* National Implementation Plan (NIP) under POPs
* Poverty Reduction Strategy Paper (PRSP)
* National Portfolio Formulation Exercise (NPFE) under GEFSEC
* Biennial Update Report (BUR) under UNFCCC
* Others

The project draws on international conventions to which beneficiary countries are parties. These include, among others: (i) the Stockholm Convention on persistent organic pollutants (POPs), whose main objective is to protect human health and the environment against persistent organic pollutants, by reducing or eliminating their emissions into the environment, (ii) the Minamata Convention on mercury whose objective is to protect human health and the environment from emissions and anthropogenic mercury and mercury components; (iii) the Rotterdam Convention, which is intended to encourage the sharing of responsibility and cooperation between parties in the field of international trade of certain hazardous chemicals in order to protect health and environment against possible damage; (iv) the Vienna Convention and the Montreal Protocol on substances that deplete the ozone layer, which aims to reduce and completely eliminate substances that reduce the ozone layer ; (v) the Basel Convention of 22 March 1989 on the control of transboundary movements of hazardous wastes and their disposal; the Bamako Convention of January 1991 prohibiting the import into Africa of any hazardous (including radioactive) waste.

The project is also consistent with the environmental management policy, the strategic document on poverty reduction and promotion of employment, the strategies and plans on climate change, and the national legal texts regulating the waste sector in the participating countries.

In Benin, the project stems from the existing texts, inter alia: (i) the framework law on environment in the Republic of Benin, in its Article 67 which states “waste must be subject to adequate treatment in order to eliminate or reduce to a required level their harmful effects on human health, natural resources, or the quality of the environment in general.; (ii) Decree No. 2003-332 of 27 August 2003 relating to solid waste management in the Republic of Benin enacted by the Executive, in accordance with the framework law on environment and which aims essentially to: prevent or reduce waste production and its harmfulness, promote waste treatment of through recycling, reclamation, use as a source of energy, organize waste elimination; restrict, monitor and control waste transfer, etc. The project is also in line with strategy documents such as the national waste management strategy (2008); the urban housing strategy in Benin; the sectoral strategy for public investment in urban areas (urban public investment); the national strategy to combat urban air pollution; the national environmental communication strategy (2008); programme documents such as the national chemical management profile in Benin (2014), the national plan for the implementation of the strategic approach for the rational management of chemicals (2015); the document of the stakeholder information exchange mechanism for chemicals management in Benin (2014); the national plan for the implementation of the strategic approach for the sound management of chemicals (2015), the Benin Environmental Action Plan, the Benin National Hygiene and Sanitation Plan, etc.

In Burkina Faso, the project adopted texts aimed at improving the environment and the protection of human health and natural resources. These include, among others: (i) the law N° 005/97/ADP on the environment which remains the legal document of the basic environmental management code including waste management; (ii) Act No. 055-2004/AN of 21 December 2004 on the general code of territorial communities in Burkina Faso gives powers to municipalities regarding environmental, hygiene and natural resource management; (iii) Decree No. 98 - 323/PRES/PM/MEE/MATS/Julie/MS/MTT regulates the collection, storage, transport, treatment and disposal of urban waste, as provided under the Environmental Code in Burkina Faso; (iii) and more recently the LAW No. 022-2005/AN on the Public Health Code in Burkina Faso; Act No. 017-2014/AN prohibiting the production, import, marketing and distribution of non-biodegradable packaging and plastic bags; Decree No. 98-323/PRES/PM/MATS/MATS/MIHU/MS/MTT regulating the collection, storage, transport, treatment and disposal of urban waste; Decree No. 2008-009/PRES/PM/MS/MECV of 10 January 2008 on the organization of the management of biomedical and similar waste; National Sanitation Policy and Strategy (NSP) and Action Plan, adopted by the Council of Ministers on 4 July 2007; the third national climate change communication; the revised National Implementation under Stockholm Convention and the Mercury Initial Assessment document of Burkina Faso.

In Mali, the project is consistent with the Decree No. 01-394/P-RM of 6 September 2001 setting out the management procedures solid waste; Decree No. 01-397/P-RM of 6 September 2001 setting out the management procedures of atmospheric pollutants; Decree No. 07-135/P-RM of 16 April 2007; Decree No. 03-594/P-RM of 31 December 2003 establishing the study procedure for environmental impact assessment and the circular letter regulating stakeholders in the pre-collection sector since 1993. It is also aligned with the policy (OP N° 5: Promotion of greenhouse gas emission mitigation actions by encouraging the adoption and transfer of technologies and innovative environmental practices) where waste management has been selected among the 4 sectors promoted (P.19 - 20) under the national policy on climate change. It is in line with the National solid wastes management strategy of 2008, the priorities under the inventory of UPOPs and the Mercury Initial assessment of Minamata.

In Niger, the project is consistent with the national strategy and action plan for the management of persistent organic pollutants including the first strategic area “securing human and animal health and the preservation of the environment”. It is also based on the legal texts, including: (i) the Constitution of 26 December 1992 devoted to the title and rights of the human being, the right of everyone to a healthy environment; the State is also charged with protecting the environment (article 28 paragraph 1) ; (ii) the law N ° 98-56 of 29 December 1998 relating to the environment; (iii) etc. The project is in coherence with the most recent Niger's national urban environmental management strategy; the national operational strategy for plastic waste management (2006); the national policy on the environment and sustainable development; the five-year action plan of the national policy on the environment and sustainable development in Niger (2017-2021); the economic and social development plan 2017-2021 of Niger (2017); the third national climate change communication; the revised National Implementation under Stockholm Convention and the Mercury Initial Assessment document of Niger.

In Senegal, the project is in line with the priority actions (PAP) under the 2014-2018 plan including support for the creation of green job opportunities. It is also part of Act No. 2001-01 of January 15, 2001 concerning the Environmental Code which stipulates that waste must be disposed of or recycled in an environmentally sound manner in order to remove or reduce their harmful effects on human health, natural resources, fauna and flora or the quality of the environment (article L30); local communities and corporate bodies shall assume disposal of household waste possibly in conjunction with regional services and national public services, in accordance with the regulations in force (article L32); waste elimination includes collection, transportation, storage and processing operations necessary for the recycling of useful materials or energy, or any deposit or disposal of waste at appropriate places on any other dumps under conditions designed to avoid nuisance... (article L33), etc. The project fully supports Senegal’s national strategies for greenhouse gas emissions mitigation under climate change communication; the revised National Implementation under Stockholm Convention and the Mercury Initial Assessment.

In Togo, the project takes root in the national environmental policy which aims to promote a comprehensive and rational environmental management to improve life conditions of the people towards sustainable development. It consists, among other things, of (i) monitoring the quality of the environment; (ii) preventing and combating pollution, nuisance, natural and technological disasters; (iii) preserving natural resources. The guidelines for this policy are focused, inter alia, on: (i) improving conditions and life quality of the populations, (ii) building national capacities in environmental and natural resource management; (iii) etc. The project falls within the hygiene and sanitation policy in Togo which aims to put in place an appropriate legal and institutional framework to promote hygiene and sanitation sub-sector and ensure its development. Specifically, it aims to: (i) build national capacity in hygiene and sanitation; (ii) develop local expertise in hygiene and sanitation and provide municipal capacity to plan and manage urban sanitation services; (iii) create in the populations a culture of hygiene and sanitation for the acquisition of sustainable and supportive behaviour for improving their life and health quality, etc. (iv) It is also in line the texts such as: (i) Law No. 2008-005, May 30, 2008 pertaining to the framework law on environment, which represents the general legislative framework for environmental management and, in particular, waste; (ii) the public health code (Law n ° 2009-007, May 13, 2009); etc.

8. *Knowledge Management.* Elaborate the “Knowledge Management Approach” for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project’s overall impact.

Knowledge management will be undertaken under outcomes 1.2 and output 1.3.3 of the project, together with the monitoring and evaluations effort. A Knowledge Management strategy will be developed and will focus on collecting project level data, results, and lessons, and collating them in accessible and open databases. Open data will be a key feature so that project results will be available to policy officials, and development partners and civil society who will also be able to add to the knowledge base. Given the project’s focus on waste management, some of the most important areas to be covered are the recovery/elimination of hazardous wastes and the transformation of valuable components into useful material. The following areas will also be particularly developed:

* adaptation and development of new clean technologies;
* Integration of cleaner production approaches and hazardous waste minimization in all planning, and the adoption of specific goals;
* Promotion of the use of regulatory and market mechanisms;
* Establishment of long-term programs and policies including targets where appropriate for reducing the amount of hazardous waste produced per unit of manufacture;
* Achievement of a qualitative improvement of waste streams, mainly through activities aimed at reducing their hazardous characteristics;
* Facilitation of the establishment of cost-effective policies and approaches to hazardous waste prevention and management, taking into consideration the state of development of each city.

Knowledge will be brought to all stakeholders through the production and dissemination of information via fact sheets, notes for policy makers, press releases, scientific publications, database on practices and awareness raising tools (documentaries, guided tours of development stakeholders, etc.). A site dedicated to the project will be launched and will provide a platform for exchanging information and knowledge in the waste sector in the region. All experiments will be capitalized and documented for future replication, fact sheets on the status of the waste in the country and notes to the policy will be published and will be made available to all practitioners and other stakeholders in the sector. Project may further contribute to feed in from other programs relevant information on the household and hazardous waste sector. Complementary activities such as: (i) annual workshops bringing together community, departmental, regional and national stakeholders, private sector, associations, NGOs, etc. to discuss opportunities and constraints, share experiences and promote learning, incorporation of reports into the database of municipalities and statistics directorates; (ii) the dissemination of information on lessons learned and experiences shared through programs on public and private media (local, national and international televisions and radio stations).

9. Monitoring and Evaluation. Describe the budgeted M & E plan.

*This description of monitoring and evaluation activities complements the description given under Output 1.3.3.*

**Monitoring by project coordination**

For the execution of the project, the Regional Project Coordination Secretariat (RPCS) will establish a system to monitor the progress of the project. Participatory mechanisms with National project coordination teams will be put in place for the collection and recording of data to support monitoring and evaluation of the results and activities indicators.

Continuous monitoring of the project will be the responsibility of the Regional Secretariat through the National project coordination units and will be guided by the preparation and execution of Annual Budgeted Work Program (ABWP), supported by a quarterly progress report. The ABWP will indicate the activities proposed for the next year at regional and national level and will provide the necessary details on the objectives and the quarterly reports that include information on the monitoring of the activities implementation and the project results and objectives achievement. The Project Steering Committee (PSC) will meet twice a year to review the progress of the project. They will assess during the meeting of the end of year, the annual management report from the previous period and the budgeted annual working program of the next period. The budgeted annual working program is established in accordance with the results framework to ensure proper compliance with and monitoring of the results of the project.

**Annual evaluation**

Annual evaluations will be conducted with the project coordination units (regional unit and national coordination units), PSC, WAEMU Commission, BOAD, and representatives of the beneficiary countries. The GEF secretariat could be involved in this evaluation. The annual progress reports, including recommendations will be submitted for adoption to the PSC. They will take into account the progress toward goals, lessons learned, risks management, status of implementation of environmental and social management plans of the subprojects including gender mainstreaming, implemented budgets and difficulties. The annual inspection by the Regional Project Management Unit will be complemented by the financial monitoring by a competent body.

**Technical assistance for the control and monitoring of UPOP, POPs, mercury and GHG emission reductions resulting from the implementation of project activities**

Technical assistance will be provided to the Project Coordinating Units for the assessment and reporting of UPOP, POPs and mercury emission reductions through the implementation of the project. An external consultant will be solicited to provide this technical assistance. During his mission, the consultant will evaluate the emission reductions of POPs, mercury releases, GHGs and other pollutants based on the methodologies approved by the GEF. It will work in collaboration with national programs on emissions reductions of pollutants and greenhouse gases including focal points on the Stockholm, Minamata, Basel, Bamako and climate change conventions.

**Mid-term evaluation**

Twenty four (24) months after the start of the project, a Mid-tern evaluation will be conducted independently with one or more independent consultants. The purpose the Mid-tern evaluation is to review the progress and effectiveness of project execution in terms of the achievement of objectives, outcomes and outputs. The conclusions and recommendations will be crucial to bring about improvements in overall project design and execution strategy, if needed, for the remaining period of the project. The regional coordination will make the necessary arrangements for the mid-term evaluation, in consultation with the various regional and national institutions involved in the project.

The Mid-tern evaluation shall include at least the following elements:

* an analysis of the project’s execution in terms of effectiveness, efficiency and compliance with set timeframes ;
* an analysis of the effectiveness of the interaction mechanisms between the coordination units;
* identifying issues requiring decisions and corrective actions ;
* a proposal for interim corrections and/or adjustments to the execution strategy, as necessary ;
* a status of implementation of environmental and social management plan of the project ;
* a status of gender mainstreaming ;
* a description of the technical achievements and lessons learned arising from design, execution and project management.

Some of the critical elements to which both the Mid-term evaluation and the annual evaluation must pay particular attention are:

* the degree of acceptance and involvement of the beneficiary SME's in the project activities ;
* the level of incorporation, among the direct beneficiaries, of the BAT/BEP activities ;
* the level of understanding and awareness among decision makers and beneficiaries of the need and importance of measures for sustainable waste management measures, UPOPs elimination, GHG and mercury reduction ;
* the level achieved in terms of adaptive management approach, monitoring and evaluation ;
* the reduction of negative impacts achieved in different areas (environmental, social, economic) ;
* the level and the impact of the private sector involvement in the sustainable waste management ;
* the level of integration of sustainable waste management measures in the regulations, policies and action plans at regional and national level and their efficient implementation ;
* the degree of participation and representation of women in the planning, training, and execution of project activities and the project's effect on the productive activities ;
* the impact of the project on the WAEMU state members development ;

All the institutions involved in the monitoring and the execution of the project will give their support to this independent mid-term evaluation. It is:

* at the national level, among others: the governments, the commerce and industry chambers, the general directorates in charge of MFIs, the institutions and associations in charge of women and youth, the national institutes and laboratories in charge of research on waste, the general directorates of environment, regional and general directorates of sanitation, regional and general directorates of health, experts in sustainable waste management;
* at the regional level, the Department of environment of WAEMU Commission and the BOAD.

The report of the Mid-term evaluation will be submitted to the Implementing Entity (BOAD).

**Final Evaluation**

Shortly before the completion of the project an Independent Final Evaluation will be led by an independent Consultant. The purpose of this evaluation is to describe project impacts, sustainability of results and the degree of achievement of long-term results. The Independent Final Evaluation should also indicate any future actions needed to ensure the sustainability of project results, expand the impact in successive phases, integrate and increase products and practices and disseminate the information obtained amongst the authorities and institutions with competencies in sustainable waste management areas, so as to ensure the continuity of the processes initiated by the project. The independent final evaluation will assess the status of implementation of environmental and social measures including the gender mainstreaming, the UPOPs, mercury and GHG management.

**Ex-post evaluation**

In accordance with BOAD procedures, an ex-post evaluation is conducted two or three years after the end of a project. This activity will therefore conducted by BOAD to measure the impact of the project on beneficiaries.

In anticipation of this ex-post evaluation, the M&E framework, including data collection and analysis arrangements, baseline information, the Annual Working Program Budgeted, will be updated at the start of the project with the participation of the responsible for the monitoring and evaluation of the BOAD. The updated framework will be submitted to BOAD for approval no later than three months after the inception of the project.

The costs associated with implementing of M&E system are detailed in the table below.

During the monitoring and evaluation process, all the reports prepared by the regional coordination and approved by the project steering committee will be sent to the BOAD which will send them to the GEF, if required.

Reports that are prepared by the regional coordination, specifically in the context of the monitoring and evaluation plan, are as follows:

1. the report of the projectlaunch workshop;
2. the annual budgeted working plans;
3. the half-yearly reports;
4. the annual management reports;
5. the technical reports; and
6. the final report.

**Technical reports**

Technical reports will be prepared as part of the project results, as well as to document and disseminate lessons learned. The projects of all the technical reports of each country must be submitted by the national project coordination to the regional coordination Unit for review and approval. The technical report will be submitted to the BOAD for its comments and observations, before the report should be finalized and published. Copies of the finalized technical reports will be distributed to the indicated actors.

**Financial Reporting**

In terms of financial monitoring, the regional coordination with the support of the National project coordination units will provide BOAD, with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of funds according to the established procedures.

**Half-yearly progress report**

The regional secretariat of coordination with the support of the National project coordination units will submit half-yearly progress reports to the BOAD within 15 days of the end of each semester. Analysis tools will be used to identify constraints, problems or bottlenecks that hinder the execution of the activities of the project in a timely manner in order to take appropriate corrective actions. This report will present the status of implementation of the environmental and social measures of the sub-projects.

They are assessed on the basis of systematic monitoring of performance indicators and products identified in the framework of the results of the project. The regional coordination will forward these reports to the members of the Steering Committee.

A regional coordination risk log will be regularly updated in intervals of no less than every six months in which critical risks to the project have been identified.

**Final Report**

Within 3 months before the date of completion of the project, the Project regional coordination will present the draft of the final report. The main purposes of the Final Report are to provide guidance to ministers and officials on political decisions necessary for following up the project and to present the donor information on the use of funds. As such, the final report will consist of a brief summary of the main products, findings, the global status of implementation of environmental and social measures during the project, lessons learned, conclusions and recommendations for the project, the descriptions or technical details. The final report will include an assessment of activities, a summary of training and recommendations expressed in terms of their practical application. This report shall specifically include the findings of the final evaluation. Prior its finalization, a project evaluation meeting should be held to discuss the Final Report draft with the Environment Department of WAEMU and BOAD. The final report will be submitted to the PSC for approval.

The costs associated with the implementation of the planning and monitoring and evaluation activities are detailed in the following table.

Table 10: Costs of Planning and Monitoring Activities Evaluation

| Activity | Responsible for implementation | Delay / Frequency | Budgeted cost (USD) | Budget reference |
| --- | --- | --- | --- | --- |
| Monitoring the impact on the ground and evaluating progress | RPCS, NPMU | Annually | 100 000 | Included in project budget (line 1.3.2.2) |
| Biannual progress reports | RPCS, NPMU | Biannual | Included in NPMU allowances and salaries of RPCS staff | Included in project budget (work of RPCS and NPMU members) (line) |
| Annual management reports | RPCS, NPMU | Annually |
| Technical assistance for the control and monitoring of UPOP, POPs, mercury and GHG emission reductions resulting from the implementation of project activities | Consultant with support from RPCS, NPMU, PSC from BOAD | Annually (from the second year of the project to the fifth year) | 56 000 | Included in project budget (line 1.3.2.1) |
| Mid-term evaluation | Consultant with support from RPCS, NPMU, PSC from BOAD | After 30 months of project implementation | 40 000 | Included in project budget (line 1.3.2.3) |
| Final evaluation and report | Consultant with the support of RPCS, NPMU, PSC | At the end of the project | 80 000 | Included in project budget (line 1.3.2.4.) |
| Ex-post evaluation | Consultant with the support of BOAD | After project closure | 80 000 | Included in project budget (line 1.3.2.5.) |
| Audit of accounts | Consultant with the support of RPCS, NPMU and BOAD | Annually | 200 000 | Included in project budget (line 1.3.2.6) |
| Total (USD) | | | **556 000** |  |
| *GEF financing* | | | *241 500* |  |
| *Co-financing* | | | *314 500* |  |

10. *Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

This project aims, among other things, the optimization of the pre-collection, the increasing of the subscription rate for pre-collection services, the better management and organization of collection, the preparation, construction and operation of the Landfill sites, the technical, institutional, legal, strategic, financial and waste management capacity building, the strengthening of recycling and solid waste development (organic, plastic, electrical and electronic), the economic and social development of waste sector. The project offers environmental, social and economic benefits for women and youth as well as for municipalities and private.

**Economic and social benefits**

Beyond the environmental economic values that the present project generates, we note the creation of direct and indirect jobs, the improvement of the urban landscapes aesthetic, the improvement of the access roads quality, the sanitation and improved public health, which contributes to a general improvement in the living conditions of the population and sustainable tourism. These jobs generate income for households and help reduce poverty.

Recycling structures (NGOs and SMEs) will see their income increased and municipal taxes will be improved. Recycling allows the reduction of waste volumes transferred to landfill sites and thus produces benefits related to waste treatment costs and those related to the depreciation of the landfill infrastructure. The generalization of sorting at source at all waste production sites (households, markets, businesses, schools, etc.) will require the permanent availability of garbage cans. The production of these plastic garbage cans will be entrusted to local or national companies operating in the field of plastics. The recycling of plastic waste will be the main source of raw material for this activity.

The adoption of BAT and BEP will improve animal and human health by reducing emissions of substances such as: hydrochloric acid (HCl), ammonia, carbon monoxide, carbon dioxide, sulfur dioxide, nitrogen oxides, hydrogen sulfides, dioxins, furans, mercury, lead, beryllium, cadmium. The risk of cardiovascular, pulmonary and cancer diseases, among others, can be reduced. The bioaccumulation, in the food chain, of heavy metals and dangerous and toxic molecules contained in UPOP and Mercury will be considerably reduced.

The sustainable management of solid waste and biomedical waste will also prevent or limit the proliferation of pathogenic germs such as *Escherichia coli, Salmonella sp, Aspergillus fumigatus, Cryptosporidium sp*, hepatitis A viruses, Ascaris lumbricoides, legionellae ( responsible for Pontiac fever and legionellosis), etc..

**Environmental benefits**

Daily management of the project will be guided by the principles of good environmental practices and sustainable development and the integration of best available techniques in the field.

The solid waste recycling planned in this project will reduce the pressure on natural resources, the quantity of waste and the various pollutions. According to the FEDEREC activity report in 2015, 1333 kg of CO2 are avoided per tone of recycled ferrous metals and 600 to 700 kg of crude oil saved per ton of recycled plastic. In addition, recycling 1 kg of aluminum can save about 8 kg of bauxite, 4 kg of chemicals and 14 kWh of electricity. Each ton of recycled cardboard saves 2.5 tons of wood and each sheet of recycled paper saves 1 liter of water and 2.5 W of electricity in addition to 15g of wood[[4]](#footnote-4).

Based on these data, considering a recycling rate of 30% of waste targeted by the project and taking as an example the city of Ouagadougou whose annual waste production is estimated at 600 000 tons, the recycling of plastic waste represents 17.4% of city waste (i.e. 104 400 tones) will reduce approximately 18,792 tons of oil (fossil energy) per year. The recycling of 30% of the 9 600 tons of ferrous metals by the city will save 3 840 tons CO2e per year. The recycling of cardboard and paper will save approximately 14 200 tons of wood per year, 550 000 m3 of water and 1 395 000 kW of electricity. These savings related to the reduction of CO2e emissions, the economy of oil, wood, water and electricity will be more important during the implementation of the project. With the sustainable financial mechanism put in place, coupled with capacity-building activities, etc., the recycling rate may exceed 30% and provide more environmental benefits. The closure and rehabilitation of wild dumps will reduce nuisances and odors and methane emissions. Waste wild dumps will be conveyed to the landfills where the biogas will be upgraded into electrical energy.

The project will help reduce at least 2 million tons of CO2 emissions over 20 years, which should contribute to global warming. The BAT/BET applied in waste management will reduce emissions of UPOPs and mercury that have negative impacts on the overall environment. Through this project, peri-urban agriculture will be reinforced by the application of compost.

The rational management of plastic waste will prevent the obstruction of gutters and thus reduce the risk of urban flooding ensuing.

1. A baseline situation will be specified at project start for each intervention site [↑](#footnote-ref-1)
2. Government staff seconded to work in the execution of the project cannot be supported from the GEF PMCs. Such costs should be charged out of the co-financing budget that includes government contributions. [↑](#footnote-ref-2)
3. According to the study on the plastic waste management in the WAEMU countries, carried out in February 2013 and the basic assumptions defined at the level of each State, the production of plastic waste was estimated at 802,713 tons for the year 2010 in the beneficiary countries of the project. The rate of collection of plastic waste would be 60% in Cotonou, 67% in Ouagadougou, 54% in Bamako, 40% in Niamey, 80% in Dakar and 34% in Lomé. [↑](#footnote-ref-3)
4. <http://www.ecocompare.com/L-importance-de-recycler---visite-d-un-centre-de-tri_d35.html>, [↑](#footnote-ref-4)